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NEW YORK STATE JOURNAL OF MEDICINE

Vol. 13
No 1



January
1913

OUT TO-DAY

December Murphy Clinics

Besides the usual wealth of clinical material, this December number contains many special features. In connection with an operation for Salpingitis, Dr. Murphy goes exhaustively into the subject of Pelvic Infections, giving in tabulated form all the sources of infection. There is an excellently illustrated article on the diagnosis of Obstetric Palsy and its relief by Tenoplasty—of particular value to the general practitioner, because the vast majority of maternity cases are conducted by him. While visiting Dr. Murphy's clinic, Dr. Raffaele Bastianelli, of Rome, delivered an extremely instructive talk on the Treatment of Cancer in Italy—this in connection with an operation for Carcinoma of the Breast. Another side talk by a European authority is that by Dr. Caan, of Heidelberg. Dr. Caan is associate to Professor Czerny, and his talk on Radio-active Remedies (particularly Thorium and Thorium-X) for malignant growths is eminently instructive. Dr. Murphy is now using a new form of Scalpel devised by himself. It is nothing more or less than a safety-razor blade inserted in a specially-constructed handle. This scalpel is here illustrated. Then Dr. Murphy's famous case of Ankylosis of the Jaw is included. The patient now has complete voluntary movement of the jaw. This case is the talk of surgical America. This December issue also carries an Index to the year's six numbers. By all odds this December number tops them all.

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EDITORIAL DEPARTMENT

THE TREATMENT OF CANCER BY AUTOLYZED HUMAN FETAL TIS- SUES AFTER FISCHERA.

ALL attempts to effect cure or even limit the growth of inoperable cancer have been so uniformly unsuccessful in the past, that one hesitates to try out any new proposed methods. From the time when the much vaunted Cundurango was discarded, to the present, false hopes have continually been aroused, only to create bitter disappointment in the minds of both profession and laity. The logical queries which arise when a new cancer cure is proposed are:

- (1) What is the rationale of the treatment?
- (2) What is the treatment and how carried out?
- (3) What results are obtained?

As to the rationale of the treatment the following three facts are offered by Fischera for consideration.

1. Observations show the extreme rarity of

spontaneous malignant tumours in young rats. This fact recalls the absence, or the very exceptional occurrence of simple neoplasms or specific tumours as epitheliomata or sarcomata in the newly born and young subjects, and leads one to believe that, in the early epoch of life, the factors necessary for the genesis of malignant tumours, do not exist.

2. The fact of the noteworthy and frequent resistance to the inoculation of neoplasms which rats acquire by previous injections of embryonic or foetal tissues. Such a fact suggests the existence of a substance contained in, or originating from, the inoculated foetal tissues which, on diffusion, render the subject immune to subsequent attempt to reproduce malignant growths.

3. The demonstration that homogeneous embryonic or foetal tissues, when subjected to autolysis, by hypodermic injection or by local application, bring about the involution of the inoculated neoplastic elements, which always reproduce themselves and prove fatal. This fact

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strengthens a belief in the existence of substances which are generated by the special tissues during the process of autolysis, which when injected into the organism, act on tumours in a way similar to that brought about by the preventive injection of embryonic or foetal emulsion.

Fischera's method is as follows:

Fresh sterile human fetuses of 2-6 months of intra uterine life, are ground or chopped up and placed in a flask of sterile physiological salt solution, in the proportion of 1 gm. of the former to 20 centigrammes of the latter. Thymol or carbolic is added as a preservative and toluol is placed on the top and the entire mixture is incubated for about 2 months at 37 C. The emulsion is then ready for use.

It is used hypodermically and may be given either at the site of the disease or at a distance. The dose is 2-4 cc. given at intervals of 2-4 times a week. Injections given at the site of the disease give rise to areas of hemorrhage or necrosis, while injections given elsewhere cause merely cytolysis with a moderate growth of connective tissue to replace the tumor. The constitutional affects of the injections are very different, according as to whether they are made in the tumor or at a distance; in the former case there may be a sharp rigor with a temperature of 102-104, while the same dose given in some other part of the body will give rise to no disturbance. This initial disturbance, Fischera considers a toxic phenomenon, and explains its production in case of local injection, by the abundance and fragility of the blood vessels in the tumour, and by the possible entrance into the circulation of the products of cytolysis of the new growth. The action of the foetal extract he considers enzymotic, and as direct and selective. From this follows a relation between the dose injected and the size of the tumour. To avoid the use of too large a dose, he injects at the site of the disease, resulting in more energetic action; in case of large tumors, he advises excision in addition to injection of extract.

Fischera's observations upon the human subject were begun in September, 1909. Thirty-six cases have been treated, all past surgical cure. Twenty-nine had been previously operated upon. In all cases, diagnosis was established histologically, and in all cases during the progress of the disease, excisions were made of fragments for

microscopic examination, in some cases as often as 8 times. Fourteen abandoned treatment at commencement for various reasons; 4 cases though favorable were of too recent date to pronounce upon, so that 18 cases remain. Of these 18, 8 have shown no improvement. Of these 10, 5 are reported cured and 5 are well on their way towards cure. Of the 5 cured, 3 are cases of carcinoma of breast with multiple metastases. One of carcinoma of rectum and one of adenocarcinoma of thyroid.

The microscopic results of the inoculation are a diffuse cytolysis of the neoplastic cells, which gradually becomes more pronounced, until the morphological entity was lost and the elements had broken up; there is intense infiltration of smaller cells of various size, especially around the blood vessels. There is active proliferation of connective and vascular tissue invading the whole region, some with giant cells. In short there is transformation of tumor substance into adult connective tissue, both fibrillary and sclerotic, with a cessation of all reaction and production of infiltration and multiplication.

In some cases, there is intense vascular stimulation of a lymphatic type; whence come a turgidity of the neoplastic tissues, and a marked increase in volume, with a change of consistency, amounting to clear fluctuation. By aspiration a limpid lemon-yellow liquid is obtained, having the characteristic of a transudation, containing whitish particles in suspension.

Our cases showed a marked variation in their behavior towards the injection of the fetal autolysate. Not only did the different types of cancer respond differently, but even the same stages of the same varieties of cancer in different individuals responded differently. Most of them were unaffected showing no symptoms of any kind, whether the injection was made at the site of the tumor or at a distant part. Some showed slight general and local reaction if inoculated in the tumor. Only one case showed marked local and general reaction, the temperature rising to 103-104. This was a case with carcinoma of the uterus. This case showed the greatest improvement. The local pain, discharge and offensive odor disappeared and there was quite marked general improvement, a return of appetite and strength and a normal temperature.

In conclusion, I wish to express my deep appreciation to my colleagues for their co-operation in this work.

WM. LINTZ.

Original Articles

PUBLIC HEALTH WORK IN CITIES.*

By FRANCIS E. FRONCZAK, A.M., M.D., LL.B.,
BUFFALO.

PROBABLY the best way of describing the public health work in cities is by giving a general description of the work as it is done in one of the first-class cities of the State, namely: Buffalo. The cosmopolitan population of that city brings about many varied conditions which, of course, are quite common in every large city, and, therefore, in order to meet these conditions, matters relating to public health must be handled in a systematic, well organized manner. As a matter of fact, when I became Health Commissioner of Buffalo and looked at the manner in which the Department was being conducted, it vividly brought to my mind an excellent editorial which I found at that time in one of the New York papers entitled "The three most important words in great success: Organize, Deputize, Supervise." It seemed to me that those three mystic words were just the ones I needed to make the Health Department of Buffalo a successful department. It was necessary to *organize*, or rather, in this case, reorganize; to get the proper machinery; after organization, it was necessary to lay out the work for others and *deputize* them so that these men could do the work—and then—let them do it. It is necessary to have good men as well as good organization to do good work, for no one, no matter how great may be his intellectual powers, if he does not deputize his work, is able to run his own organization as it should be. *His* duty is but to *supervise*, keep his hand on the lever and see that the men do the work properly. In view of this, I organized the following bureaus:

I. Bureau of Vital Statistics with divisions of Communicable Diseases, Tuberculosis, Placarding and of District Physicians.

II. Bureau of Tenements and Sanitation with division of Tenements, Lodging Houses and Hotels, division of Sanitation, which includes nuisances, division of City Scavengers, and division of Free Public Baths.

III. Bureau of Food and Drugs with divisions of Milk, and subdivisions of Country and City Milk Inspection, division of Food and Drugs with sub-divisions, including Commercial Industries, Fertilizer Works, Glue Factories, etc.

IV. Bureau of Bacteriology which also has a division of Fumigation.

V. Bureau of Chemical Laboratory.

VI. Bureau of Psychopathy.

VII. Bureau of Child Hygiene with divisions

of Medical School Inspection including School Nurses, and division of Child Labor.

VIII. Bureau of Plumbing and Drainage.

IX. Bureau of Hospitals, including hospital for contagious diseases, a hospital for small-pox cases, and now organizing a hospital for advanced tuberculosis.

Of course, in a paper which is limited to 15 or 20 minutes, it is impossible to describe fully the work done in each bureau and division. I shall only scrape the surface, as one might say, without going into a detailed description of the work performed.

Originally, the average Health Department of any municipality consisted really of the Bureau of Vital Statistics, whose duty it was to keep a more or less complete record of births, deaths, and marriages. Twenty-five years ago any city that had about 50 per cent. of the record of births was doing fairly well. About the same number of marriages was officially recorded and probably 80 per cent. of the deaths. Now-a-days, in this State, it is absolutely impossible for any city not to have a complete record of deaths in accordance with the standard adopted by this State and the Census Bureau at Washington, such a record of every person dying, with all the details required by State Laws and City Ordinances, is possible because no one can be buried unless a burial permit has been issued by the proper authorities. The cemeteries of our city must give weekly and monthly reports of all burials. The crematories cannot cremate a body unless a proper affidavit is filed in the Health Department and in the office of the crematories. The laws on this point are so strict that it is almost an unheard of thing for anybody to be buried in a city of the first class without the knowledge of the health authorities.

There was considerable difficulty, for a time, to get a complete registration of all marriages, but since the enactment of the law whereby a license must be procured in the City Clerk's office before a marriage can be legally performed in the city, and requiring that this license be properly filled out by the person who performs the marriage ceremony, and finally returned to the County Clerk's office for record few marriages remain unrecorded. This is attained by frequent comparisons being made between the city clerk's and the county clerk's offices to see whether or not all marriage licenses have been returned; if not, a police investigation is made to find out if the ceremony has been performed, and if performed an explanation must be given why the certificate was not filed with the Clerk as made mandatory by law, and if necessary, the delinquent is prosecuted. I believe that, in cities, we now have a complete record of all marriages.

It is very hard to get a complete record of births, however; but even this has materially improved in various ways in the city of Buffalo, and all cities. In Buffalo, for instance, from

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 17, 1912.

time to time, an inspector is sent to the churches where infantile baptism is practiced and a complete record of all baptisms is taken and this is compared with the records in our office; and all certificates of children dying under two years are looked up in the index to see if their births have been reported. The State Law provides that a birth must be reported within thirty-six (36) hours. This does not apply to Buffalo and several other cities. In our city a birth certificate must be filed within three (3) days. We also compare the lists of children whose births are published in newspapers, and see if they are recorded. If we find any child's birth not reported, we immediately send either a letter or an inspector to the parents and ascertain the name and address of the attending physician or midwife. We then have him or her call at the office where the "riot act" is read to him or her as the case may be; and if the offense is repeated, the case is sent to the Corporation Counsel for prosecution. After a number of physicians and midwives were brought before me, or were summoned to appear in Court, the result was very gratifying, in so much that in two years the number of births reported in Buffalo jumped from about 8,000 to over 10,500. I do not believe that Buffalo's fertility has been largely increased during these last two years; but the results are there, and I think they are due to the strict investigations made in the manner indicated above.

In this Bureau, there is also a division of Communicable Diseases. Twenty-seven (27) various diseases are enumerated by the Health Department as infectious. During the year 1911, there were reported about 10,000 cases of these various communicable diseases. Immediately upon reporting such a disease, which is usually sent to us by telephone, steps are taken to prevent the spread of the disease, and, if the disease is diphtheria, scarlet fever, or smallpox, the house is placarded. In cases of smallpox, the patient, unless his removal would place his life in jeopardy, is removed forthwith to a hospital kept for that purpose by the municipality. All persons in the household, and others with whom a smallpox patient came in contact, are vaccinated. If they refuse they are kept in quarantine for ten (10) days. In diphtheria and scarlet fever, strict quarantine is also maintained. In cases of diphtheria, quarantine is not removed until two consecutive cultures give a negative result—the last one being taken by a medical inspector from the Department. In scarlet fever, quarantine is not removed until after at least thirty-five days have elapsed from the time of the report of the disease and after the attending physician has reported to us that the patient has fully recovered and a medical inspector is sent by the Department to verify the report. Fumigation of the entire premises is ordered. Whenever any communicable disease is reported, we immediately notify the school authorities; the children from that house-

hold cannot attend school until they produce a certificate from the attending physician duly approved by the department, showing that all danger of infection has passed. Public and private libraries are notified. Milk men must not leave milk in bottles, but in bulk. An inspection of premises is made by a medical inspector and investigation made as to the source of infection. The bread earners are not permitted to stop in the same house, and if they do, they are not allowed to go to work, except under certain conditions among which is the provision that they not come in contact with the patient, nor use the same bath room, and do not come in contact with any one who looks after the patient. The Sunday School* is also notified. A paper of mine which appears in the Buffalo Medical Journal (April and May, 1912) and entitled "The law as it relates to physicians and the Buffalo Health Department" covers these points more fully.

In view of the fact that the Health Department is open all the time, we are able to placard a building as soon as we hear of any case of communicable disease.

Measles, whooping cough, chickenpox and many others are under modified quarantine as understood under the State Department of Health rules.

In the division of Tuberculosis, we employ two medical inspectors, a clerk, and six nurses, who look after those patients who are unable to look after themselves, or whose family is not able to take care of them, or where an attending physician is unwilling or unable to take such precautions as are indicated by the law. While on this subject, I believe that the section of the law which provides that \$1.00 should be paid to physicians who "report cases of tuberculosis and are willing or able to take care of their patient and take various precautions," should be repealed. It opens a very wide gate for abuse.

The City of Buffalo has ten District Physicians who look after the indigent sick. They also investigate suspicious cases of communicable diseases, or cases not fully determined by an attending physician. All cases of chickenpox, without exception, are investigated by district physicians, or, if necessary, by an expert from our department, to determine whether or not a mistake has not been made and a case of smallpox diagnosed as chickenpox. Such mistakes are sometimes very expensive for a municipality, to which Buffalo can testify. The City Physicians also investigate all sudden deaths, due to causes other than violence or accident. These latter are investigated by the County Medical Examiners, who are the equivalent of Coroners in other counties of the State. Erie is the only county in the State without coroners.

The Bureau of Tenements and Sanitation is popularly known also as the "Nuisance Bureau"; as a matter of fact, the entire health department

in many communities including Buffalo is known by many as the "Nuisance Bureau" in more than one sense. Under the State Tenement House Law, a tenement house is any house or building, or portion thereof, which is either rented, leased, let or hired out, to be occupied, or is occupied, in whole or in part, as the home or residence of three families or more living independently of each other, and doing their cooking upon the premises, and includes apartment houses, flat houses and all other houses so occupied.

The object of the tenement house law is to provide light, ventilation, sanitation, fire protection and privacy.

The Department of Health is charged with the enforcement of this law as it relates to light, ventilation and sanitation, the Bureau of Building in the Department of Public Works having charge of construction, and the Fire Department looking after fire protection.

Before the construction, alteration, or conversion of a building for the use of a tenement house is commenced, and before the construction or alteration of any building or structure on the same lot with a tenement house, the owner or his agent or architect, must submit plans and specifications to the Department of Health for approval or disapproval.

Any one interested in this particular work of public health in first-class cities is referred to the Tenement House Laws which went into effect in 1901. There have been many subsequent amendments. In Buffalo, there are, approximately, about 4,000 tenement houses, and I can assure you that they create plenty of work for the Bureau.

The Division of Sanitation, which includes nuisances, is one which probably tends to shorten the life of the average chief of that division and the Health Commissioner more than any other. We all know or are supposed to know what constitutes a nuisance, but the complaints sent to the average Health Commissioner in large cities show that some people have a very queer idea of what really constitutes a nuisance. Let me give you a few examples. Two neighbors have had a falling out. One of them has a fine tree on his lot, the branches of the tree extend over the roof of the adjoining house. Under this tree, the neighbors have had many a friendly chat, until they had this falling out, and then some one is looking for a chance to get even with his former friend and "show him a thing or two" as they express it; this tree gives him the opportunity. How? The branches are over his roof, the leaves fall on the roof, they decay, the roof begins to rot away, the people who live in the house are exposed to dampness and sickness. It is up to the Health Department to remove the tree.

A girl is practising on the piano until, say, about nine o'clock at night; a neighbor may have a grouch; telephones a call to the residence of the

Health Commissioner to come immediately, and, as the head of the Health Department, stop this "nuisance," which is detrimental to public health in so far that it does not permit people to sleep.

A baby crying for an hour or two at night in the adjoining house or perhaps in a room in the same building; a telephone call to the Health Commissioner to either come himself or send an inspector to stop this baby crying, which has become a serious nuisance and a menace to public health. I sometimes wonder, under those circumstances, what would be the best way to stop the baby crying—chloroform it or put it to sleep with a sledge hammer.

The feline members of the community feel like having a small entertainment on the back yard fence; a concert follows and in a very short time you will hear from some person in the neighborhood complaining of the public nuisance which the cats are creating, and a call upon the Health Department to put a stop to it immediately.

Of course, in instances like these which I have mentioned, it is a question who is the biggest nuisance creator, the baby crying, the piano practicing maiden, the tom-cat concert, or the person who makes the telephonic complaint at 2 or 3 o'clock in the morning, and thereby awaking my entire family.

On the other hand we find that many people have good grounds for making complaints to this division. Excessive noises in factories, both day and night; foul smells; building a pig pen under the bedroom window; allowing goats to partake more or less copiously of the neighbors vegetable or flower garden; keeping piles of manure on premises, and so on and so on. All these are investigated by one of our several inspectors and reported back to the chief of the Bureau. If there is no cause for complaint, the complaint is filed away. On the other hand if the complaint is well founded, a notice is sent, requiring the abatement of the nuisance in a manner indicated by the Department. If the nuisance is not abated in a few days, a re-inspection is made, the Corporation Counsel notified to prosecute, summons issued by the City Court, and the person, perhaps, is either fined, or sentence suspended upon him upon his payment of the costs of the action and a promise to immediately correct the nuisance complained of.

The City Scavengers, of course, look after the various dead animals, which in a large city, include anything from a mouse to a dog, cat, goat, calf, cow, horse, lion, or a snake. So far we have had no requests to remove a dead hippopotamus or an ichtyosaurus.

In the division of public baths, there are two large free public bath houses in the crowded sections of the city and a beach bath on the lake shore. Over 150,000 people have taken advantage of these baths and thousands and thousands have taken advantage of the opportunity

provided to laundry their under-clothes free of charge, the City even supplying them with a piece of soap and an individual towel. I am strongly in favor of building more bath houses and opening beaches both on Lake Erie and Niagara River.

Probably no Bureau in any community, at the present time, is more important and in greater popular demand than the Bureau of Food and Drugs. Of course, milk, meats, fruits, vegetables, in fact, anything that comes under the general understanding of food and drink is included in this bureau. Our milk inspection begins with the cow in the country which supplies milk to the city. We inspect the water, the barn, the surroundings where the cow is kept, examine the cow itself to see if it is healthy, examine the people who look after the cow to see if they are healthy, whether they have any communicable disease, or come in contact with any one suffering with any communicable disease, examine the utensils and cans, and God knows that milk cans need frequent examinations badly, for we are liable to find the bottom of the cans full of holes and the holes filled with old rags, pieces of carrot, or potato, or pieces of soap; in fact, anything that is handy is used for that purpose, and we find that scum a quarter of an inch thick has collected on the inside of the can, that the tin cans have become so rusty that they almost look as if made of copper. There is only one remedy for these cans, the bottoms are knocked out of them by the inspector.

No milk above a temperature of 55 degrees can be sent into the City of Buffalo; it must not contain more than 500,000 bacteria to the Cubic Centimeter, and it must be up to the New York State standard. Yet there was a time when milk was examined and there would be several million bacteria in a cubic centimeter. Just imagine five or eight or more million micro-organisms in one-quarter of a teaspoonful of milk. How crowded must have been these poor germs. And more than that you wonder how any milk could have been crowded in between the bacteria at all. Milk of that kind, in fact any milk containing more than one million bacteria, is immediately dumped into the sewers, shipment from that dairy is interdicted, and conditions are immediately investigated to find out why this milk was of that type. If colon bacillus is found or pus organism, or anything that spells danger to the users of the milk, a most thorough investigation is made of everybody from the farmer in the country to the delivery man in the city who has anything to do with the handling of this milk. We have now in the Committee on Ordinances of our Board of Aldermen over 150 sections of ordinances relating to foods, some covering sale of cattle, hogs, lambs, sheep and poultry which may be diseased or tainted in any way; others forbid the packing of any fruit or garden produce in boxes, crates or

containers that are dirty or unsanitary; some forbidding the use of cellars for bakeries, candy factories, and so on; some forbidding a person suffering from any infectious or contagious disease, among them tuberculosis, gonorrhoea, and eye diseases, from work in restaurants, kitchens, bakeries, sausage factories and so on and so on.

The exposure of bread and flour products or candy in the open air is not tolerated. These goods must be kept covered in glass cases so as to protect them from flies, dust and dirt. There is a strict enforcement of the ordinances relating to the exclusion of rats, mice and vermin in various industries. Ordinances relating to cold storage of eggs and vegetables. The prohibition of feeding cows on putrefying or decayed brewers' or distillery waste, or anything that is capable of exerting a pernicious influence upon milk. Milk must contain at least 12 per cent of solids, 3 per cent. of butter fat and 1029 specific gravity. Certified milk cannot contain more than 10,000 bacteria to the cubic centimeter. The question of pasteurization and sterilization is also taken care of in some way in these proposed city ordinances. Saloons with their free lunches and beer which is pumped up by air which sometimes is drawn from dirty and damp cellars, even from off closets—all this comes under the ban of our department. So, you can see that this division is a fairly busy one, not mentioning our investigations of various commercial industries, like fertilizer works, glue factories, crematories, soap factories and other industries, which may contaminate the air with offensive smell, stench, gas or odor.

In the Bureau of Bacteriology, last year, over 26,000 examinations, of various samples submitted for examination were made; sputum for tubercular bacilli, cultures for Klebs-Loeffler bacillus, dog brains for Nigri bodies, to determine whether a dog which has bitten some person is rabid, Widal re-action, para typhoid A, para typhoid B, smears from suspected gonorrhoea, Wasserman's test, examination of milk, water, food, eggs, eatables, and drinkables; examinations of our drinking water are made daily. All these and many other examinations are made under the eye of the Director of Bacteriology in the Bureau of Bacteriological Laboratories.

Our experts in the chemical laboratory look after everything that comes within the province of a chemist; examinations of suspected food or drink that are suspected of being poisoned; candle power of city gas—both natural and artificial, and electricity; besides many investigations of water, candy, milk, and food stuffs.

In the Psychopathic Ward, we look after suspected cases of insanity among men and women who are sent there either by the courts, police, physicians, or friends. We have an expert psychopathist formerly connected with the Buffalo State Hospital, a female attendant and

male nurses—police officers who have had experience as nurses in State hospitals for insane.

The Bureau of Plumbing and Drainage, of course, looks after work which comes within the sphere of plumbing and drainage. No trench can be covered, no city water can be turned on, no sewer connected with the main sewer unless it is inspected, tested and O.K'd. by one of the several inspectors of plumbing and drainage, who are under the direction of a chief and assistant chief.

In the Bureau of Hospitals, the head of which is Superintendent of Hospitals, we have two buildings one for contagious diseases, like scarlet fever, diphtheria, measles, chickenpox, whooping cough, erysipelas and so on with a staff of physicians, nurses, orderlies, maids and cooks. A disinfecting plant is part of the institution. Any person who is suffering from any of these diseases can be sent to this hospital. If he is poor, he is taken care of at the expense of the city. If he is able to pay, a charge of \$10.00 a week is made for treatment and maintenance. We have two motor ambulances with patent removable linings for each disease so that all danger of cross infection is avoided from the start. A Municipal Hospital is maintained for smallpox exclusively with a physician in charge and nurses and such other help as may be indicated from time to time being employed. We are well prepared for any smallpox epidemic being able to accommodate eighty (80) patients, but we rarely have anybody in this particular hospital. So far this year we have only had 2 or 3 patients. The city on July 1st will open a large hospital for incipient tuberculosis at Perrysburg and an eighty (80) acre farm has just been bought on which a hospital to accommodate 300 to 400 chronic tubercular patients will be erected at once.

The Bureau of Child Hygiene is my pet and the apple of my eye. It looks after the children almost from the time before they are born. The prospective mother is instructed on the care of her child. When the child is born, and the family a poor case, we notify the District Nurses; during the summer, we send circulars in various languages to the mothers, instructing them how to look after their children during the hot weather; from time to time we send other circulars on various phases of children's health, on dry sweeping, on dusting, on flies, mosquitoes, communicable diseases, etc., etc. In school, we give the children a thorough physical examination every year. Buffalo has five medical school inspectors, twenty assistant medical school inspectors and three nurses whose duty it is to investigate the one hundred thousand children of Buffalo who attend the public, parochial and private schools and institutions of our municipality. They examine them from head to foot; their chest, heart, lungs, skin, throat, eyes, ears, nose and even hair, because in this latter part of the

child's anatomy there may be something which if not attended to will keep them busy scratching their little heads and thereby prohibiting them from concentrating their minds upon what the teacher may be saying. Pediculosis, which, in common ordinary English means lice, is found not only in backwoods districts, in the slums of the city, but even in the best private schools of our most aristocratic districts. Whenever a child has any physical defect, the medical school inspector notifies the parents, in writing, of the defect, and suggestion is made that the family physician be sent for, that he may attend and remedy the condition. School nurses go to the homes of the poor and attend to trivial cases, like bandaging, preparing salves for skin diseases, instruct mother, in preparing foods for the underfed and so on. The school nurses also help the physicians in the school work. If the child is nervous, or anæmic, or has a tendency to any disease, he is sent to an "open air" school maintained by the municipality; and "open air" schools are certainly a necessity. As a matter of fact, I believe that every class room and every school room should be an "open air" class room and an "open air" school room. I have no faith in artificial ventilation, whether it be vacuum, plenum, or any other kind. I believe there should be no windows in school buildings at all; holes in the wall should be the only means for ventilating the class room. If sickly ænemic, sub-normal children show such great improvement, both physically and mentally in the "open air" schools, where they are kept in the coldest weather in rooms where the windows have been removed entirely, why should not healthy children undergo the same treatment and study and be taught in rooms where God's fresh air can come in abundance all the time, and not regulated by the whim of the janitor or by machinery which may get out of order any time and usually is out of order most of the time.

I have but scraped the surface, enumerating only a few of the many public health duties performed in a great city. I must not forget to mention the sending out of pamphlets, sanitary bulletins and circulars, the giving of lectures often illustrated by stereopticon pictures; all these are being lavishly used by the Health Department of Buffalo in the education of the people in order to protect their health and prevent them from being a menace to the community. The literature is published in various languages, English, German, Polish, Italian. In a cosmopolitan city like Buffalo, when we give lectures we can always find some intelligent person who is able to discuss matters in the language of the people he addresses. This is an era of education and I believe that money spent for educational purposes is not wasted. At the present time, public preventive medicine is making progress by leaps and bounds, and the large cities of the State are certainly taking advantage of what scientists

have decided to be of advantage to the community in the way of preserving health, prolonging life and preventing disease. For only with these factors present, namely: preservation of health, prolongation of life and prevention of disease can a community be a happy community; and the city of Buffalo in no small measure endeavors to contribute to the happiness and general welfare of the community through its various Bureaus of the Department of Health.

A NATIONAL DEPARTMENT OF HEALTH AND THE NATIONAL LEAGUE FOR MEDICAL FREEDOM; OR ORGANIZED MEDICINE VS. ORGANIZED QUACKERY.*

By WILLIAM J. ROBINSON, M.D.,
NEW YORK CITY.

ONCE more it has become my duty publicly to defend scientific medicine against the attacks of quackery, once more it is my task to defend the scientific and honest part of the medical profession against the unjust accusations and unworthy insinuations of the fifty-nine varieties of sectarians, faddists, cult followers, charlatans and ignoramuses, honest dupes and crafty schemers. For the question is not merely whether we shall or shall not have a Federal Bureau or a National Department of Health. The question is of much broader significance, and really embraces, as I hope to succeed in showing you, the old fight between science and ignorance, between progress and obscurantism, between altruism and egoism. For I trust I will have no difficulty in convincing you that the cry for so-called medical freedom is merely a cry for license to permit all ignoramuses and charlatans to prey and fatten on the public unhindered and unrestrained.

RADICALISM AND QUACKERY.

Before we go to the subject proper, it may prove not unprofitable to spend a few moments on the question of the relations of radicalism and quackery. To me it has always been an interesting problem. I could not understand why medical quackery and buffoonery had such a comparatively large following among our various radicals—liberals, freethinkers, single taxers, socialists and anarchists. One would suppose that people who think—or at least try to think—independently on subjects of religion, politics and economics, would also entertain rational views on general medical and sanitary questions. But, alas, as we know, this is far from being the case—there is not a silly, a contemptible form of quackery that has not its adherents among our

radicals—Sunrise Club members among others. Why is it so? This problem, as I said, puzzled me. But I began to look into the matter; and I have found the cause. There is no effect without a cause; and you will always find the causes, if you search for them diligently enough.

The causes for the unholy and ridiculous alliance between radicalism and quackery are manifold—and here are the two most important ones:

1st. The first cause is undoubtedly to be found in the general antagonism of the radical to everything regular, established orthodox, particularly to everything having the sanction of the regularly constituted authorities. Because the accepted theology is behind the times, because our old political parties are rotten, because our economic system is atrocious, it follows that regular medicine must be bad. And here comes the quack and tells him that regular medicine is bad, that the old doctors are but drug dopers and butchers, that we are old fogies who have no real knowledge of anything, that our so-called science is but a patchwork of guesses and empiricism, and that they, the quacks—they do not so call themselves—are the modern followers of modern medicine, that they have discarded the old ideas; they tell them these things and many others—and the radical takes them for pure coin; especially as nobody contradicts these statements.

2d. I said, "especially as nobody contradicts these statements." And here we have the second cause of the spread of quackery and its influence among the radicals. Up to very recently the quacks had the field to themselves undisputed. The scientific physicians considered it *infra dignitatem* to go to the public, to take the public into their confidence, to show them the false assertions, the absurd exaggerations, the bordering-on-insanity claims of the quacks, their deliberate lies, their juggling with figures, their intentional perversions; we were too proud to do that and to show to the public that the quack, who sometimes called himself a "liberal" physician, was nothing but a brazen ignorant impostor, whose sole object was to deceive the public in order to be able to fleece it, to prey upon it. We were too proud, the quack was alone in the field, and we therefore had to pay the penalty. But we have perceived our error; if I were not afraid to offend against modesty, I would say that I was among the first, if not the first, to perceive this error and to point it out. I was among the first to point out the pernicious fallacy of the belief that truth is bound to triumph, that error will inevitably die. Truth will not triumph unless you propagate it, help it, defend it; error will not die unless you expose it, unless you help to kill it. But now we are taking the public into our confidence, we are telling them the truth, and the quacks are beginning to have a hard time of it. For when it comes to a real combat between knowledge and ignorance; between science and pseudo-science, there can be little doubt as to the final result.

* Read before the Sunrise Club, February 19, 1912, in debate with officers of the National League for Medical Freedom.

THE NATIONAL DEPARTMENT OF HEALTH.

As to the proposed National Department of Health, if it would really do what the National League for Medical Freedom says it would, I would be decidedly opposed to it. I need not tell you how opposed I am to autocracy of all sorts. You know that my activities always have been and always will be in the direction of liberty, in the direction of true freedom. But the League for Medical Freedom, whose reason for existence seems to be to fight the Owen bill for the establishment of a National Department of Health, have set up a scarecrow, with which they attempt to frighten the people who are not capable of independent thinking. And I believe you will agree with me that I am not using too harsh language when I say that in many of their statements the members of the League are lying deliberately. For instance, when they tell you, as they are doing repeatedly, that the establishment of a National Department of Health will interfere with anybody's freedom in choosing a physician, will interfere with any method of treatment or any school of medicine, they are lying deliberately and they know it. For they know perfectly well that the Owen bill has absolutely nothing to do with the practice of medicine; it does not in the very least concern itself with the individual treatment of disease; it deals exclusively with the large matters of public sanitation, prophylaxis of disease, quarantine, pollution of streams, etc. They know that if the Federal Government wanted to, it could not interfere with the practice of medicine, for the regulation of the practice of medicine is exclusively a state function; that if a state wanted to abolish all laws regulating the practice of medicine, permitting every butcher and every old woman to practice, the Federal Government could not interfere. Personally I should like it very much, for the sake of the public, if a law *could* be passed which would drive from the field of medicine all the quacks and harpies and ignoramuses and lunatics who now prey upon the public. But there is no hope that such a law will ever be passed—not in the near future anyway. And the chiropractors, naturopaths, mentapaths, oxy-paths, panopaths, naprapaths, magnetopaths, electropaths, hydropaths, psychometropaths, oculopaths, vitapaths, absent treatment charlatans, Christian scientists, mental scientists, new-thoughters, tuberculosis quacks, cancer cure scoundrels, lost manhood professors, and all other fakopaths, quackopaths, fraudopaths and humbugopaths, even including the pneuma-psycho-mana-soma-paths, who to our shame and disgrace are now so outrageously permitted to injure and kill the people, are unduly frightened. Their fear is altogether unfounded. For unfortunately the Owen bill is not going to hurt them a bit. They will be able to continue in their nefarious work in the future as they have

in the past. But it was a good battle-cry and the shrewd organizers and managers of the National League knew that it would unite into one army all the fakirs and nondescripts who felt there was something crooked and dishonest about their business; they knew that it would bring them at once into their camp.

I do not mean to say that all the members of the National League for Medical Freedom are quacks, frauds and fakirs, but I do mean to say that all the quacks, frauds and fakirs are members of the National League for Medical Freedom.

DELIBERATE MISREPRESENTATION.

I am as deeply aware of the fact as any man can be that we are not responsible for our opinions. I know full well that our opinions are the result of a number of factors, namely heredity, early environment, our social and economic position, the friends and acquaintances we happen to have, the lectures we have attended, the books we have read, the arrangement of our cerebral cells, the condition of our liver and digestive organs, etc. In the ultimate analysis, no man can be blamed or praised for his real, sincere opinions, no more than he can be praised or blamed for the color of his hair or the length of his nose. We must blame and condemn, however, the man who gives voice to opinions which in his heart he knows are untrue, we must brand the man as a criminal who for ulterior motives misleads the people and who in order to attain his object frightens them by the aid of non-existing phantoms into beliefs which he knows are false. And I regret to say that reading the literature and speeches of the National League for Medical Freedom, reading them in as objective, unbiased and dispassionate a mood as I was able to put myself into, I could not avoid the conclusion that many of their statements and writings are deliberately and knowingly false. For instance, when a high officer of the League, says, as he has been reported in the newspapers to have said, that "under a National Department of Health a sick person would be forced by law to call in a physician of the regular school, that homeopaths, osteopaths, eclectics, the Emmanuel movement and similar methods, Christian science and all other methods would be barred" (I quote verbatim), he says something which he knows, and which every schoolboy knows, to be false. For an officer of the League cannot be so ignorant as not to know that "Congress can exercise only those powers which have been delegated to it by the states, that the regulation of the practice of medicine stands on the same basis as the regulation of other occupations and trades, which is not a function of Congress; and that any Federal law attempting to regulate the practice of medicine in the states would be declared null and void." Nor can they be unaware of the amendment which, while altogether unnecessary, Senator Owen introduced for the pur-

pose of disarming any fears of those misguided people who were sincere in opposing his bill. The amendment is verbatim as follows:

"That the Department of Health established by this act shall have no power to regulate the practice of medicine or the practice of healing, or to interfere with the right of a citizen to employ the practitioner of his choice, within any state of the Union, and all appointments within the department shall be made without discrimination against any school of medicine or healing."

I say that while this amendment was altogether unnecessary, still to disarm any possible criticism Senator Owen thought it best to make the matter perfectly plain, so that there could be no misunderstanding in the matter, and so as to take away any possible excuse for a misunderstanding. And still the quacks go on repeating the silly falsehood about interfering with medical practice. Have we not the right to accuse them of deliberate falsehood, of deliberate misrepresentation?

THE QUACKS AND PROGRESS.

We live in a progressive age, or at least we flatter ourselves that we do. The worst reactionary thinks that he is a great libertarian, and that he stands for freedom, for progress, for advancement. And the quacks in and out of the League for Medical Freedom think it very clever to try to persuade the people that we the "regulars," the old school physicians, represent the old school physicians, represent the old time ideas in medicine, stand for reaction, for obscurantism, while they are the followers of modern ideas, have left the beaten paths, and stand for liberalism, liberty and the latest discoveries. Just the contrary is the truth. It is we who are employing every means afforded by the natural sciences—chemistry, physics, biology, botany, and zoology—to unravel the mysteries of disease. It is we who use every instrument of refinement and of precision in the diagnosing of disease; it is we who spend our lives in the laboratories, trying to make nature disgorge her secrets of the cause and treatment of disease; it is we who are lengthening the courses of medical studies and are increasing the preliminary education requirements for entering a medical college; and it is therefore that every discovery, without a single exception, in the prevention, etiology, diagnosis and treatment of disease during the past half century has come from the hands of the regular medical profession. What have the quacks done and what are they doing? Are they responsible for a single contribution to the science of medicine? What are they doing besides clamoring to be let alone, to be exempted from any preliminary education, from any regular medical studies? I ask again have the quacks and the so-called liberal physicians done anything to advance the science and art of medicine and surgery? Absolutely nothing. Where, I ask, are

their Trousseaus, Virchows, Listers, Oslers, Jacobis, Billroths, Pirogoffs, Bergmanns, Kochs, Ehrlichs, Metchnikoffs, Behrings, Wassermanns, Schaudinns, Flexners, Meltzers, Carrels, etc., etc.? They have not one man worthy the name of either physician or scientist, or worthy to unloosen the shoes of any one of the men I have just mentioned.

No, ladies and gentlemen, do not permit yourselves to be deceived or misled. It is the quacks who are the reactionaries, who are the ignoramuses, who are the obscurantists. Not from them can you expect any progress in the prevention and cure of disease. The future of medicine is in the hands of the regular scientific medical profession. It is sufficient to point to our progress in the etiology and treatment of diphtheria, malaria, yellow fever and syphilis and to our perfectly wonderful achievements in every branch of surgery, including surgery of those most vital organs, the brain and the heart, to be convinced that the future will bring us still greater results, still greater marvels. And when we see how everywhere where scientific, properly organized medicine has its sway the mortality rate is going down, we cannot help a feeling of resentment and contemptuous pity against those who, in ignorance and wickedness, join the camp of the opponents of regular scientific medicine.

ANCIENT AND MODERN MEDICINE.

The quacks, in their endeavor to ridicule and to discredit present-day scientific medicine, show the people how crude and ignorant the physicians of former ages were. They bring up the pharmacopeias and materia medicas of two and three hundred years ago and show what nasty stuff and what big doses "we" used to prescribe. We can afford to laugh at these silly charges, *for they do not concern us*. What have we, modern followers of a modern system of medicine, to do with the doctors of a century or two ago? As well cast ridicule on the chemists of to-day because their predecessors, the alchemists of old, were full of childish notions and silly prejudices. As well sneer at the great astronomers of to-day because the old astrologers entertained ideas and vagaries which would do credit to—a new-thoughter or Christian scientist of to-day. No, do not saddle us with the responsibility for the ignorance, lack of logical reasoning, fanciful notions and tremendous doses of our ancestors. Modern scientific medicine, which applies the experimental, analytical, scientific method, which demands proofs, reproduces the same conditions in animals and applies the remedies experimentally, is—as I have said many times before—but half a century old.

And I assert without fear of contradiction that no other science has in half a century made greater progress than has medicine. And, speaking of medicine itself, it has within the last fifty years made more progress than it has during the

previous 500 or 5,000 years. All our notions of disease, its nature, its causes, its rationale of cure, have undergone a complete revolution. And the future of scientific medicine is full of glorious promise.

MEDICINE AND RELIGION.

The quacks always like to compare medicine with religion. It is a favorite line of argument with them. What would you say, they like to ask, if one religious denomination tried to create a monopoly of all religion and attempted to suppress all other religious denominations? Are you not for religious freedom? And as they, of course receive an affirmative answer, they then ask triumphantly: Well, why are you not for medical freedom? This line of argument is as puerile as it is disingenuous. First, your professing a certain religion does not imperil the public health. But when a sect professes its belief that there are no germs, that no disease is catching, and acts accordingly, it becomes a menace to the community and must be suppressed. And when a man says that it is not necessary to know anatomy or pathology or chemistry in order to treat disease, he becomes as dangerous as any homicidal paranoiac and should be restrained. Second, they might as well ask, if you are for freedom to profess any religion why are you not for freedom to commit burglary, rape, and murder? Reasoning by analogies and similes is a dangerous thing. Only the analytical mind can perceive the fallacies and pitfalls—the average mind is caught in the net of sophistry and becomes too entangled to be able to find the way out. Religion has nothing to do with science. Religion is a matter of faith. All you have to do is to believe a certain way and you are fully competent to be a follower of that certain religion. No exact knowledge is necessary. But, in order, to practice medicine some definite knowledge is necessary. Even the lowest and worst of quacks will admit that. And we do not want to suppress this or that way of treating disease. *But* we do want that he who undertakes to treat human disease should show that he has devoted some years to a study of the anatomy, physiology and pathology of the human body. Somehow or other we do not think that it is sufficient for a man to say that he is a physician to make him a physician. If a man wants to engage in the plumbing business he has to study several years and show his proficiency in the work. If a man wants to be an engineer he has to undergo several years of study and pass a rigid examination; if a man wants to be a ship captain his mere statement that he could take a steamer across the Atlantic is not considered sufficient. And we don't let him try either, unless by many years' work in subordinate positions and by a successful examination before a competent board he has shown that he is a safe person to be entrusted with

the guiding of a ship in tempestuous waters. We do not tell him that he must guide the ship in a certain definite line, but we do want to be sure that he knows how to guide a ship in general, and that he has judgment enough in case of difficulties. Why should it be different in medicine? Why should every charlatan, every ignoramus, every good-for-nothing who is unwilling or unable to earn an honest living at street-sweeping or shoemaking, every vagabond who has not brains enough to acquire a medical education, be permitted to call himself a doctor and to deceive, rob and injure the sick? I have asked these questions before, but they have not been answered yet, for they cannot be answered.

Yes, we do live in a glorious country. If you are too stupid or too ignorant or too lazy to obtain the degree of M. D., do not despair; all you have to do is to turn the letters around and call yourself D. M., which means Doctor of Magnetism, and does not cost any time or labor to acquire. Or you can leave the D in its place, but instead of M take the next letter in the alphabet: that is, instead of M. D. call yourself N. D., which means Naturopathic Doctor, and is so easy that any paranoiac is competent for the degree. As our alphabet contains twenty-six letters, you can make any fanciful, meaningless combination, and the more meaningless the more dupes and victims you will have. Yes, this is a glorious country, and I call for three cheers for medical freedom—freedom to befog the minds and injure the bodies of the American people!

SUMMARY.

Let me summarize this necessarily brief and incomplete address:

1. The most important task that the true liberals and radicals have to accomplish is as quickly as possible to get a divorce from quackery. They must learn that quackery is masquerading in a false garb, that it does not represent liberal and progressive tendencies, but stands for ignorance, reaction and obscurantism.

2. A National Department of Health would deal only with the large affairs of public health, prevention of epidemics, quarantine, pollution of streams, etc. Its purpose is to co-ordinate the existing bureaus of health in order that matters of public sanitation may be attended to more expeditiously and more effectively.

3. A National Department of Health could not and would not interfere with any school or system of medicine or any sect. Regulation of the practice of medicine is purely a state function, with which the Federal Government has nothing to do.

4. It is not our intention or desire to interfere with anybody's method of treatment. All we want is that those who wish to treat the sick should show their competence for this delicate life-and-death work.

5. The National League for Medical Freedom has set up a man of straw, to act as a scarecrow to the gullible and weak-minded. It is trying deliberately to deceive and mislead the people. I do not like to say it, but as it is true, I must say it.

6. And last but not least, I would like you to carry this thought away with you. The fight is not between a mythical medical trust and medical libertarians, between medical tyranny and medical freedom; the fight is between progressive, scientific medicine on the one hand and organized quackery on the other. The National League for Medical Freedom is misusing the last word of its title; it should change the word Freedom to the word Quackery—and then the world will know just what it stands for.

PUBLIC HEALTH EDUCATION AMONG WOMEN.*

By CORA B. LATTIN, M.D.

BUFFALO.

IT is my purpose in this paper to emphasize the need of women's aid and enlightenment if public health education is to bring to successful issue the reforms necessary to improve national health, and raise the racial standards of the Anglo-Saxon race. These standards, scientists engaged in study of human development and our social conditions, feel confident, are evincing formidable signs of physical, mental and moral decadence.

A startling amount of youthful immorality has been unmasked in this public health crusade. Investigators believe this immorality to be a result of distorted views and soiled minds, regarding sex questions. The depravity of the young; the prevalence of venereal diseases in family life which contaminate and sterilize parents or bring forth still-born, defective or degenerate children, and the equally serious conditions of declining birth rate among the fit and a formidable increase in birth rate among the unfit are problems which scientists alone can never solve for the interest of the race. If these questions relative to the health of present and holding in their grasp the destiny of the future are to even approach a solution, the woman, the mother, must be informed of the presence of such conditions, and the pressing need for the welfare of home and humanity that they be ameliorated. These are to me the most vital of all questions of public health education. Woman's hand has not ceased to rule the world even though in its present mother enlightenment, it has ceased to rock the cradle and I feel it is the hand that must chiefly

be depended upon to work the Herculean task of cleansing these Augean stables, and turning through them the purifying waters of life.

All humanity for a goodly portion of its formative period is under mother rule, woman rule, and to the young of to-day must we look for future reforms.

Public health education has become a world movement, and in this movement are involved these other important questions of racial welfare. Dean Bailey of Cornell says, the greatest promise of the situation is our awareness of the present tendencies. Our public health committees of the A. M. A. must make it their endeavor that this awareness becomes general.

The eugenic world brings a charge to our profession that in the many trying scenes of most professional lives has surely not always been accredited to us. It is that we are making too many cures, saving too many lives for the good of posterity. In an article published in the *Eugenic Review*, London, January, 1910, Dr. James Alexander Lindsay, Royal College of Physicians and Surgeons, writes: "Does the medical profession make it its business to preserve the unfit, in this manner increasing degeneracy?" The question he leaves entirely unanswered. This is only one of many investigators who hurls the charge not as a question, but as an assertion at our door. Is it a sign of the times that the healing art is being relegated to the background, while preventive medicine is advancing to the post of honor?

Something more than three years since the *A. M. A. Journal* published a review of a series of articles written for the *British Medical Journal* by Mrs. Hodgkinson, Editor of the *British Health Review*. The Editor of the *A. M. A. Journal* in his review says: "These articles may be read with profit by both English and American physicians." In commenting on the changed attitude of the public to the profession, Mrs. Hodgkinson says: "The thinking minority of the public are conscious of a change taking place in the professions and limitations of modern medicine, and are convinced that their greatest hope lies in the recognition, by both public and profession, that, whereas the medical science is progressive, so should its relations to the public be progressive." The Editor's comment is: "That as change and progress are sure to come it behooves us to recognize and adapt ourselves to them, rather than ignore, oppose and suffer."

Mrs. Hodgkinson's first criticism was that the medical profession, a body of immense social and legal weight, had made no organized protest against the absence of sound training and teaching of hygiene in our schools, and the average man was brought up in ignorance of the laws of health and the natural needs of the body. She considers just this criticism of the public, "that the interest of physicians begins and ends with diseased conditions." She feels the physician's pecuniary reward should be based on the health

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

not on the disease of the community. She ends with the prediction that in the future, we shall call physicians more to instruct in ways of health and right living than in correcting disastrous consequences of ignorance and folly. The *A. M. A. Journal* concludes thus: "We agree with Mrs. Hodgkinson that the possibilities of such a future are infinite." Very humbly but very emphatically the writer endorses these sentiments.

Much has been accomplished in the three years since the writing of the above to verify the predictions of the author and the conclusions of the editor.

Take for instance the subject of Sex Hygiene. Three years ago our committees felt delicate about presenting this subject to any but the most carefully selected audiences, and then the topics were handled with great reserve. To-day it is a vital question, commanding the attention of Church and State, of educational bodies as well as Mothers' Clubs. The present outlook calls for no discussion regarding the *parental* obligations in the instruction of children in sex matters, for the belief is quite general among the intelligent of the laity that the old taboo of silence must be broken, and parents must encourage confidence and extend information. This is surely ideal, but will never be accomplished in its entirety. Many parents are unwilling or unable, ignorant or unworthy to impart such knowledge. What then, shall the large majority of children be left to poison the minds and corrupt the morals of youth as of old, or shall sex hygiene be taught as is other text in our schools? Here comes a difference of opinion. Let us hear the views of some of our contemporaries. Richard Cabot, in his "Conservation of the Affections," says: "He feels it is a dangerous subject to handle and more harm than good is likely to accrue," but concludes that the "decision should be left to the pedagogic profession."

I talked a few days since with the Professor of Educational Psychology at Cornell, who expressed himself as emphatically in favor of such instruction in our schools.

At the Manheim Conference in Sex Pedagogy, in 1905, the transactions of which have recently appeared in English, there was not a single dissenting voice from the proposition that sex instruction should be given in the later years of boys secondary schools. (This is quoted from Stanley Hall's article in the *Eugenic Review* for January, 1910). The what, and the how and by whom, were the only questions that called for a difference of opinion.

At the recent conference in Washington of our National Society of School Hygiene, the major portion of the time was taken up in the discussion of this subject. And one in attendance informs me consensus of opinion was strongly in favor of such teaching.

The "New England Journal of Education" in a March issue, publishes a symposium on the

subject and here again we find ground for the belief that the pedagogic profession generally is strongly in favor of the teaching of Sex Hygiene in our public schools.

Professor Compton, (M. D.) Superintendent of Physical Culture in the New York Schools, says: "The subject bristles with difficulties, but it must come." In some of Germany's largest cities, such courses are being successfully given. In Switzerland, in Hungary, and in Finland, sex instruction has been authorized for several years. (Hall.)

A few Normal Schools are at present training teachers for this instruction, chief among them and, investigators claim, doing the best work is Ypsilanti. I prophesy that such instruction will soon be recognized as a part of a more rational teaching of physiology and hygiene and as a natural termination of biological study.

CONSIDERATION OF VENEREAL DISEASES OMITTED SYPHILIS AND GONORRHOEA IN THE READING.

The outgrowth of those old faulty conditions of home and society are a menace to our country, and though, as Theodore Roosevelt says in the Outlook: "They are like morbid anatomy on the brain and heart of man," I contend they should be incorporated in every course of lectures on public health. To me, it is astounding how little knowledge is current, or has been to the present time among womankind regarding these diseases and their baleful effects. An evil cannot be avoided until its presence is known and its effects feared. Woman has been largely the innocent sufferer from these diseases. It is time knowledge was hers to know, to fear, and to avoid. For herself, for her children, for posterity, must she be educated and protected.

The City of Berlin, Germany, is issuing gratuitously to the public periodicals dealing with facts concerning the Great Black Plague, and designed to prepare and educate the public for laws soon expected to pass the Reichstag (if they have not done so already), for medical examination before marriage and certificates asserting to the fitness of the applicants, mentally and physically, for parentage. Similar protective measures have been legalized in Oregon, in Kansas, and in New Jersey. In the two first named States at least these laws are said to be more honored in the breach than in the observance. The reason generally given is that the public is not prepared with a sufficient education of the evils and the necessity for the enforcement of the laws. Here again is need of woman's aid in influencing their enforcement even though she does not make the laws. (A great tubercular campaign has swept through this and other lands. Much money has been contributed and the general public has been enthusiastic in aiding to diminish the number of sufferers, yet according to the report of the Vitality Commission of One Hundred on national vitality, there are only five hundred thousand tubercular patients to two millions of syphilitics

in the United States. The crusade has shown how ready is an educated public to aid for world betterment. I cannot choose but feel it would be well to exert its greatest powers on this greatest enemy.)

Carl Persons of the University of Oxford, says: "There is no real lessening of the number of tubercular patients, though the statistics show a slight decline in the death rate, which he considers owing to the past ravages of the disease, carrying away the less resisting and thus increasing the general immunity."

Better results than this might be looked for in a second general uprising for the lessening of disease by improving the general morality.

The next great effort in public health crusade from my standpoint should be the general dispensing of a knowledge of the science of eugenics or as some say "the hygiene of the future." (The subject of mating considered from the point of racial welfare, should be considered in every household using the psychology of summation of suggestion when the childmind is plastic and easily influenced).

The knowledge that heredity is greater than environment (nurture) and that care in mating will work wonders in family history and that the aristocracy to be valued is one not of wealth but of health should be a text of home instruction. These eugenics ideas thus introduced in the family will soon do much to create a sentiment in the young which regards moral and physical worth as a necessary accompaniment of physical charms, and as the best physical development contributes to the richest mental endowment, that culminating necessity of human advancement, a *strong, well balanced mentality*, may be an ultimate result. Such mentality will thus form a worthy receptacle for the piled up achievements of the ages. We are rightful heirs to all that has gone before. Let motherhood realize that the child of to-day is the parent of the future, and that she holds in the folds of her arms the future of the race and the vision of the "Superman," grows clearer to our view.

It may be interesting here to give a few of the opinions of some of our students of eugenics. The Rev. R. H. F. Peile in the *Eugenic Review* for October, 1909, writes, "The most effective weapon in the new cause is the education of public opinion. Now Church and State do all in their power as soon as children are born to fit them for the battle of life and the kingdom of Heaven. Society must recognize that pre-natal conditions are more important than post-natal ones. Eugenic education must have a place in the day school, the Sunday schools, the home school. The Church has claimed the right to regulate marriage of its members. Here is a chance for ministerial work."

Slaughter suggests: "That primogeniture should be abolished and titles and estates go to the ablest child, thus doing away with the dan-

gerous security of possession so fatal to achievement.

G. Stanley Hall in an address before the Social and Moral Prophylaxis Society in New York, April 13th, 1908, says: "One and one-half billions people on earth to-day are but a handful compared to the number proceeding from their loins. They demand the supreme blessing of being well born, there will be only curses for us if they are handicapped by our errors. The sacred torch of fire must be transmitted undimmed to our children's children. The somatic, or body cells, are only servants to the deathless germ plasm. The religion of the future must be the religion of the individual to posterity, a great social revival is imminent, such as has not been seen since the Renaissance. Racial decadence will be the day-spring of the uprising."

Another question that I consider of importance, not only in health education among women, but in general, is to familiarize them with the idea that, if we are to become a power among nations, not only must we use all means available to improve our racial stock, but, in the general question of race suicide, there is one source which we wish to cut off. That is the reproduction of the unfit. Here we run against that outstanding charge against our profession, that our science is responsible for an increase in the defectives, degenerates and the physically unsound, and the burdens of the capable are being enormously increased by the financial drain upon communities of the large percentage of the degenerate classes. We must make good, and here we need the assistance of every member of our State Association to aid in influencing public opinion of the necessity of limiting, by all justifiable means, such reproduction. It is well known to our profession that the boundaries between disease and crime are being closer drawn. Their interdependence is recognized by the sociologist in his study of criminology and the psychologist in his analysis of mental phenomena.

The recently translated work of Cæsar Lombroso, "Crime and Its Treatment," is having a salutary effect on the legal profession, and some of our sister States, Indiana, New Jersey, and others are forging ahead of the Empire State in this matter. (Since writing the above, New York has passed similar laws.) In Indiana, in 1910, surgical sterilization of the dependent unfit had been legalized and 900 cases had been surgically operated upon. The results on the whole were reported satisfactory. (Here the sentiment, Ex-Ambassador White might say the "slushy sentiment of womankind" is apt to be horrified, but the crime of bringing to life children destined to lives of misery and degradation is frequently sufficient, when mentioned, to turn the tide, and the economic importance of such a step quickly appeals to the sterner sex.) For two years, I

have missed no opportunity of presenting this phase of future hygiene to the laity generally, and they have appeared fairly reconciled to the idea.

Ex-President Ambassador White of Cornell in a recent letter on a kindred subject, says: "This legalization of surgical sterilization of the unfit is to me one of the most hopeful things in criminal law to-day."

I make a plea for the united endeavor of my colleagues for an organized effort to make these teachings general.

Woman is acknowledged by many writers to be the mainstay of the human race, upholding its dignity and deciding its destinies. Senior Ferrero, the Italian historian, who, in these later years, has been making fox and geese of ancient history in his recent article Aggripina, wife of Claudis, mother of Nero, one of his series of articles "Women of the Cæsars," says: "Woman is the vestal of the race, by nature more conscientious, more virtuous than man. No nation has arisen to the highest and best in life, which has not cultivated this virtue of its women." The Professor of Sociology at Cornell in one of last winter's lectures, made a similar statement, when he said, "The advancement of a race depends on the chastity of its women."

It has been my purpose this last winter to devote a little time to the study of heredity. (The old and now less regarded Malthusian theories, the theories of Galton of Meldal. From none of these can I find ground for the assertion that woman is more responsible than man for the heredity endowment of offspring. The Galton theory that children are one-half parents, one-fourth grand parents, one-eighth great grand-parent, and so on in geometrical ratio to infinity; the new conception of the old Mendelian theory that unit characters of the germ plasm of parents are the inheritance of the offspring in various combinations, making possible many changes and variations.) All theories point to the equal influence of both parents on hereditary characteristics. If this is admitted, how much greater is the possibility of physical, mental and moral evolution when the inheritance is equally good from both sides of the family. And when the two million syphilitics and many times that number of gonorrhœal infected are reduced to the minimum, there will be a chance for improvement in the human harvest which will render Nietzsche's Superman less the idle coinage of a philosopher's brain.

Education of women as to these great needs of the human race, and the disastrous and fatal consequences to the family, the home, the whole human harvest, from venereal invasions will work such a revolution as came in pro-slavery times, but we need the silver tongue of a Phillips, the oratorical strength of a Garrison to educate the public conscience and quicken the moral sense of the individual, and strike the fet-

ters of ignorance, mistaken reticence and false modesty from the human mind. As Jane Addams says—because these evils have existed for all eternity is no sign that they must for all eternity exist any more than did the slavery of our South.

When woman is educated to these evils, she will, I prophesy, demand measure for measure, the chastity that man has demanded from her since in remotest history, she was his by right of capture, and later by right of purchase, and in patriaarchial times, she was simply a chattel and man's wealth was counted as so many heads of camels, horses, women and the chastity of the wives added to the value of his goods. She will, I am sure, insist also the "Damaged Goods" shall be taken at its true value. Can any one affirm that the result of such a proceeding will not have a potent effect upon the welfare of our race? I conclude with a pen-picture of Nietzsche's Superman defined thus by Maximillian A. Mugge: "He is the accumulated condensed virtue of all ages, pure in body and brave in self-conquest. Of the strict strenuousness and endurance of the Spartan. Sound in body and steady in character. Of the ethical æstheticism and loftiness of soul of the Athenian. Able in body and acute in intellect, of the rigid rule of the citizenship of Rome, robust in body and regal in mind."

The Superman is a goal, a far away goal of terrestrial life, let us work toward it, it is a prospective possibility.

In all this work we greatly need the co-operation of this body of organized colleagues. We have Chairman in thirty-seven counties in this state; only five receive the active co-operation of the local Medical Societies. Other State societies are forging ahead of us. I receive proof sheets of the articles prepared every month by the profession in Dakota and printed by the Journal-Lancet, the organ of their State Medical Society. These proof sheets are sent out for insertion in local papers. District of Columbia, I understand, is engaged in a similar dispensing of medical articles to the laity. Cannot our State Society make a similar effort, and our County Societies aid the Committees to reach the public through their local county journals in this crusade?

Many non-medical organizations are surpassing us in endeavor. The Health League of New York City Y. M. C. A. are sending out to every one of their members a bunch of literature containing much practical knowledge of sex hygiene and the venereal diseases. I was surprised to find a book by Davenport on Eugenics in this literature. In our correspondence, at my suggestion, they at once sent for reprint of Jane Addams' articles in McClure's for public distribution. Our Committees, so ably organized by Dr. Rosalie Slaughter Morton, and working this year under Dr. Elanora Everhard's efficient management, are yet pushing forward the work with commendable energy; 226 lectures given, 25,000 peo-

ple reached in New York. (In our extension work letters have been written to State Boards of Health for information as to the extent of their co-operation in this work. Much knowledge has been thus secured as to extent of movement and work being accomplished.

Our effort this year has been exerted to carry teaching to the rural sections through Granges and other organizations of farmers. In some portions of the country prizes have been offered in rural communities, at County Fairs, etc., to the healthiest rather than the prettiest. Our Committees have also quite generally endeavored to interest the public in the much needed National Board of Health. The large cities are much more active than smaller towns and villages, where there is need for awakening influence. Rochester, under Dr. Allen's championship and New York under Drs. Masters and Van Vorst are doing a surprising amount of work. In many places the County Medical Societies themselves, it is reported, show little life, meetings few and illy attended. We desire your aid in such places, in gaining the interest of the County Societies. Very many non-medical organizations are aiding us with great energy, but there is no greater need than the hearty, active co-operation of this State Society. We must not forget Mrs. Hodgkinson's criticisms and our National Journal's comments. The Council on Health and Public Instruction recommends that the state and county medical societies co-operate with the American Medical Association Committee for Public Health Education Among Women by making the state chairman of said Committee a member of the State Public Health Committee, and the county chairman a member of the County Public Health Committee, in those state and county medical societies which already have standing public health committees, and in such as have not, the American Medical Association Council on Health and Public Instruction urgently requests that Public Health Education Committees be formed to co-operate with the American Medical Association Committee for Public Health Education Among Women.

This resolution to be sent by Dr. Frederick R. Green, Secretary of the Council, to the secretary of each state medical society.

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Discussion.

DR. ELIZA M. MOSHER, Brooklyn: The very interesting paper to which we have listened indicates the position which the Public Health Education Committee of the American Medical Association has taken regarding the vital subjects which the speaker has discussed so forcefully. The future stability of the entire social fabric of life in America depends upon the action that will follow the free discussion of these subjects, which has laready begun everywhere. The work of the committee, however, has not been conducted distinctively along these lines, important as they seem to us to be. The work assigned our Committee by the American Medical Association is instructing the public in general, and women in particular regarding the laws of health, the causes of illness and the best ways of preventing diseases of all sorts. We are expected by organized effort to conduct the teaching of Hygiene personal, domestic, municipal, child welfare, in all its aspects; and kindred subjects.

The report presented by the chairman of our central committee at the last annual meeting of the American Medical Association told how far afield the teaching of our committee has already gone, and yet we believe the highest usefulness of the work has not been fully demonstrated. It is the aim of the committee to carry the work, as way opens, more extensively into centers of our foreign population, schools, settlements and chapels, and among the people whose unsanitary modes of living not only increase the death rate, but menace the health of those who live under better conditions.

Perhaps nowhere has our teaching been more appreciated, or more promptly put into practice than in "Mothers Clubs." The Question Box method of conducting meetings, has in the hands of the speaker proved particularly successful among the uneducated. After two meetings in which a list of questions made out by those who were to be in attendance, were answered in an informal and conversational manner, the way was opened for other meetings on special subjects, which were well attended.

Clergymen have asked us to give special teaching to girls about to become members of the church, and it has been possible to give motherly, tactful instruction that has seemed deeply effective.

Sunday school sueprintendents have asked us to give talks to their girls which have opened up an avenue for the teaching of moral and physical hygiene most useful and desirable. In carrying out our methods, medical women have learned the value of "Team Work" more than this members of the medical profession of both sexes have discovered that we have a work to do for the uplift of mankind that cannot be done as well by either alone. With no hope of reward other than the satisfaction of doing what

we can to lessen human suffering and prolong human life, this committee of the American Medical Association has done, and means to continue to do, the work for which it was appointed. DR. PHOEBE M. VAN VOAST, New York:

In speaking of the work of the American Medical Association Committee for Public Health Education Among Women, I should like, as chairman for New York City, to say that the lectures given there have covered a very wide field; many phases of child hygiene, of personal hygiene and of municipal hygiene have been taken up, practical talks have been given on infant feeding and clothing, on the eye, ear and throat; the skin; fresh air, exercise, hygiene in the home, etc., etc. Much emphasis has been laid upon the prevention of various diseases. The number of people reached in New York City for the current year has been approximately 18,000.

The plan followed has been to notify the settlements, Y. W. C. A. branches, teachers and church societies of the work done by sending them letters describing the work, enclosing leaflets with the list of topics from which they might choose. As a result of this fifty-five lectures were arranged at which there were 2,000 present.

This work in the city at large is distinct from the course of lectures given at the New York Academy of Medicine, which were arranged by the Chairman and Secretary of the Public Health Education Committee of the Medical Society of the County of New York, Dr. Rosalie Slaughter Morton and Dr. Mary Sutton Macy. The attendance at these lectures during the current year was 6,000. In addition to these already described there were other lectures directly arranged between settlements and clubs and physicians who are members of or co-operating with our Committee. The number of people thus reached was over 9,310.

In closing, I should like to take this opportunity of thanking the sixty doctors who have gratuitously given their services. One doctor gave as many as thirty lectures, another fourteen, another nine, and many others one, two or three. To the cordial co-operation and public spirit of these doctors the success of the Committee work is due.

Dr. ROSALIE SLAUGHTER MORTON, New York, "In New York on the evening when the subject was 'The Common Cold,' I noticed working men in their flannel shirts, attentive listeners, which shows how great is the interest of all classes in the Public Health Work. Rectors of churches invited us to address their confirmation classes as a part of their preparation. The high ethical standard of the New York meetings was maintained throughout, and there was generally an overflow attendance. We owe a large debt of gratitude to the busy physicians who not only gave their time for their lectures, but remained throughout the sessions to answer the pelting

rain of questions. I would also like to add my tribute to the unselfish continuous contribution of time and strength by the devoted chairman of the New York Branch."

Dr. CORA B. LATTIN, Buffalo: "In closing the discussion I wish to express deep appreciation for the generous and cordial co-operation of the Medical Society of the County of New York, of the medical societies of Kings and Monroe, and to all other societies which have contributed to the work; also for the aid of individual physicians' women's clubs and an enthusiastic public; and lastly my thanks to the Medical Society of the State of New York for their appreciative resolutions and their kind invitation to the State chairman to present the subject at this meeting."

PUBLIC HEALTH AND THE CHILD.*

By LEGRAND KERR, M.D.,
BROOKLYN, NEW YORK.

IN the hygienic problems which affect the individual, it is just and wise to minimize the possible effects which restraint and compulsory control may have upon the affected individual, even though he be one of that class that bear restraint poorly, namely, children, because in full justice to the larger problem of social expediency and betterment, such control is necessary. This holds true just as long as the number of such affected individuals remains small, but when it becomes proportionately large the whole situation changes, because we are then dealing with many units which go to make up the whole mass of society and our restraint becomes generalized instead of remaining individualized. Now, with the establishment of a generalized control there is brought into play the inevitable consequence of the direct affection of other interests which were not and could not reasonably be considered when the control remained individualized.

According to the varying circumstances these several interests are made contributory to or antagonistic to the control. In so far as there is excited a favoring and contributory influence, society is benefited, but with the excitation of reasonable antagonistic influences, the benefit, the fairness and justice of such control is brought into dispute and its continuance along rational lines jeopardized.

This has been the history of public hygiene as it affects children and as it exists today.

Starting as a measure of social expediency, there was instituted such measures of restraint and control as were made necessary as a duty in the light of our beginning knowledge of infection and contagion. This control affected but few individuals and only affected them over a short period. With the constant advances in

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 17, 1912.

sanitary science there was necessarily added a larger measure of restraint and this more or less affected a larger number of the population, but it still remained an individualized problem. To properly carry out the provisions which were made there was selected someone who was representative of authority and who was expected and, if needs be, compelled to serve without antagonizing interests which were not directly affected by the actual needs of the case. This is as far as some communities have gone, either because of impossibilities of further activity being placed in their way or through a recognition of the fact that every so-called advance is not distinctively advantageous. In most communities, however, there has been a more or less steadily increasing activity, with the consequent necessity for more workers, and therefore boards of health have supplanted officers of health.

The great strides made by sanitary science within the past few years and the dangers which arise from the marked tendency of the population to dwell in congested areas have made necessary the employment of expert chemists, biologists, engineers and many others which were not essential when our knowledge was more obscure and the necessities of the situation less urgent.

In communities of any considerable size this associated body of public protectors is absolutely necessary and must be so constituted as to be responsible to one chief or head if it hopes to be and remain efficient for its purposes.

But the past history of the splendid results which have been obtained in the protection of society from the ravages of infectious and contagious disease, in the safeguarding of children from early death, in the prolongation of life in general, in the promotion of comfortable living and a decent food supply, should not make us blind to the fact that such bodies can assume too much and by so doing eventually defeat the very objects for which they were created.

Inasmuch as the several specialists in their lines are essential to the proper performance of the functions of public health bodies in all large communities, it is absolutely necessary that for perfect functioning there be a correlation of the administrative and scientific factors of such a body. Now, theoretically, all of these functions can be performed without regard to public co-operation. In fact, the laws are such that they compel co-operation, even though it be of the intolerant sort. The writer believes that it is an easy matter to prove that public co-operation is a most valuable asset in any problem of public hygiene and that without it no adequate progress can be made, and yet commonly we see it demonstrated that law is considered sufficient to secure it. Perhaps in some instances this may hold true, but there is no dispute upon this proposition: that public opinion is higher and more powerful than any law that was ever framed

in this country, because it is the creator of all such law, and public opinion is a tremendous factor in securing public co-operation.

Public opinion is by no means a unit in favor of the apparent advances that have more recently been made in the large communities in relation to the public hygiene as it affects children. Neither is it a unit in its antagonism to such procedures, but there is sufficient evidence of its unsettled state to warrant the prediction that before very long this unrest will resolve itself into an upheaval either in favor of or in antagonism to the present activities, which seem to have no reasonable beginnings or any definite ends.

Several bodies have seen the handwriting upon the wall and have made an honest endeavor to influence public opinion in the direction of co-operation by a campaign of public education. But has this education always been wise? It has not. Education upon matters of public hygiene is a step in the right direction, but the education offered must be of the right kind. A department of publicity as an adjunct to, or working in harmony with, a public health body is one of (if not the chief) the most valuable and effective means of securing the intelligent co-operation of the public. Such a method of education invites and excites individual effort in individual homes. It does this in an ideal way also, because it does not interfere with the continuity of parental authority. It cannot be too strongly stated that this feature is an important one and one that is far reaching in its end results. It cannot be reasonably denied that the more the state assumes of authority and control, the more the heads of the individual homes will relinquish their authority, and the final result to the child be deleterious. There are certain well-defined rights which all states accord to their citizens, and standing high among these is the right of the head of a home to protect his house, his home and his family.

So fixed is this ideal in the minds of the community that when the laws seem inadequate or are disregarded in the endeavor to carry out the spirit, if not the mere letter, of the law, the offender is excused by his peers from the results of his violation of the same. And while this right of protection is accorded in one instance, through minor agencies, the state robs the head of the home from the co-operation with it in protecting the health of his child.

What is the result? There is either a relegation of parental authority to that of the state, or a distrust of the state as a competent governing body. Either one of these is at once destructive of co-operation with the state. It is not too strong a statement to make that despite any and all kinds of laws, despite any and all kinds of education, individual efforts of the several members of a community are absolutely necessary if the aims of sanitary science are to

be effective. Of what use are laws that aim to govern and control the actions of those in a home in which there is infectious or contagious disease, if the disease be hidden? Of what use is the persistent suggestion that certain defects in the child be corrected, if the parent fails to realize the necessity for it? And so we might go on and ask many other questions to show that what makes such social conditions possible is nothing more or less than social ignorance. Too often the physician is left to fight this problem alone, and is held responsible by governing bodies for the results of a social ignorance which considers the suggested institution of protective measures an infringement upon their private affairs.

And all because so little is thought of adequate education and so little regard is paid to the eternal question: why?

It is taken as an affront by most persons to tell them in pamphlet or by any other means, for instance, to burn this or that article, to do one thing and avoid doing another; it smacks too much of law. Give them the reasons; tell them why. That is the way to secure their co-operation and interest. Many persons are too old to learn, of course, but they are in the minority. Social hygiene among children could be reduced to a simpler and more efficient working basis if the tremendous force of child education along rational hygienic lines was realized and the will to use it was strong enough to find the way.

In many large communities today there is evidence that the problems of public hygiene as it affects children are not being worked out with any detectable definite aim in view. Instead of unanimity of purpose of the several departments there exists often a wild stampede of varied interests, which, although they crowd one another and often come in contact, yet have apparently individual interests which to them are uppermost and therefore they remain dangerous and irresponsible units of a whole that has large possibilities for serious results.

What the remote needs will prove to be none of us can tell, because advancement will constantly alter existing conditions. But the immediate need is for a period of rest from further activities; a period of stock-taking to see where we stand in relation to this problem; a period of thoughtful consideration of what has been accomplished and determination as to whether it has been worth while.

The men in our public health service are just as noble in their purposes, just as public-spirited in their sacrifices of time, money and energy, as any other class of workers, but also, like many others, they have been driven by innumerable interests and varied factors to adopt many measures which they feel instinctively or consciously are not the best. With the strength that comes with periods of repose, with the safety that is ours when we "stop" and "look" and "listen,"

there would be a revival of public confidence, and in the inevitable activities that would follow every medical man, every medical interest, should give their undivided support, no matter what their personal views or personal interests.

POLLUTION OF HARBOR WATERS OF NEW YORK, ESPECIALLY REFERRING TO BEARING ON HEALTH.*

By LINSLEY R. WILLIAMS, A.M., M.D.,
NEW YORK CITY.

DURING the years 1908 and 1909 the Metropolitan Sewerage Commission made an investigation of the condition of the harbor waters of New York City. This investigation was published in a report to the Mayor of New York on April 30, 1910. Included in this report was a study of the relation of the harbor waters to the public health. It will not be necessary at this time to go into the entire investigation of this particular phase of the subject, but the more important possibilities of the harbor water affecting the public health of the community will be considered.

The dangers consist chiefly of the eating of shellfish taken from the harbor waters and of bathing in the harbor. There are other possible sources of danger, that of flies, insects and vermin, which may act as carriers of disease. The collection of driftwood and its use for fuel in the homes of the poor and the influence of odors along the waterfront may also be a cause of disease.

It must be obvious to medical men that a large amount of contaminated material is daily deposited into the sewers of our large cities. With the exception of one or two isolated purification plants the sewage of New York is emptied into the harbor without any disinfection or purification. Not only does the sewage from New York enter the harbor, but also the majority of the sewage from Westchester County and from the bordering counties of New Jersey and part of the county of Nassau on Long Island.

In the year 1909 there were 72,073 cases of infectious disease in the City of New York, and with the exception of a comparatively small number of these cases, they were all treated in their homes, and you may imagine how much disinfection of discharges occurs in the private homes of the poor. In considering typhoid fever alone; it was found that of the 3,499¹ cases reported in the year 1909 about one-half were treated in hospitals, and it is fair to suppose that the discharges of these patients were fairly well disinfected before being emptied into the sewers. In private homes there are but few conveniences for actually disinfecting the discharges of typhoid patients and there can be no doubt but that ty-

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

phoid bacilli make their way into the harbor waters of New York in considerable numbers.

The ever increasing numbers of reports of cases of typhoid carriers makes it evident that a definite percentage of the population are typhoid carriers. These individuals add to the number of typhoid bacilli which make their way into the sewers.

The typhoid bacillus, like the tubercle bacillus, is possessed of considerable longevity. Giaxa² found that typhoid bacilli would live for many days in sea water. Boyce and Hardman³ found that typhoid bacilli would live for a month in sea water. Foster and Freytag⁴ state that "typhoid germs will live for a long time in sea water." Lawes and Andrewes⁵ found that typhoid bacilli at 20 degrees C. would live in sterile sewage about a fortnight. Klein⁶ found that they would remain in sterile sewage three weeks, and if nitrates were added they existed in enormous numbers for eight weeks. Jordan, Russell and Zeit⁷ found that typhoid bacilli lived in Chicago drainage canal water for two days and once for ten days. Russell and Fuller⁸ found them alive in water in which sewage was added from three to five days. McConkey⁹ found that typhoid bacilli could be recovered, after being introduced into crude sewage, for six days, but that they did not multiply and died more or less rapidly.

There is unanimous opinion that typhoid bacilli will live in sewage whether or not the sewage be sterilized before these germs are added; that typhoid bacilli do not usually multiply in crude sewage, but retain their vitality for some days, and that typhoid bacilli may live a considerable time in sea water.

Danger of Oyster Culture.

Oyster culture is now only allowed after application has been made to the Bureau of Marine Fisheries of the State of New York and a site has been designated by them on grounds leased by the state. According to law, no oysters may be taken within the inner limits of the harbor. It has been noted, however, by inspectors of the Metropolitan Sewerage Commission that oysters are taken from the inner harbor.

Oysters and Clams in Polluted Waters.

The Bureau of Marine Fisheries¹⁰ of New York State, in its report for 1908, states "that it is now unlawful to place or allow to run into waters in the vicinity of oyster beds any sewage, sludge, acid or refuse, or any substance injurious to oyster culture, and upon it appearing that oyster beds have become polluted from one or more of these causes it becomes the duty of this bureau to cause complaint to be made in a criminal action against the person or persons so offending. Such person is also liable to damages to the persons injured. It will at once be appreciated that the vast amount of sewage, said to be five hundred millions of gallons every twenty-

four hours, emptied into our tidal waters by the City of New York is the most serious existing cause of pollution. In consequence of this situation, *no oysters for use as food are taken from New York Bay, nor have any oysters for the markets been taken from these waters* during the history of the Shellfisheries Department of the Forest, Fish and Game Commission." In spite of this official declaration, during 1908 and 1909 oysters were taken from natural beds off Robbins Reef. This was seen by members of the Metropolitan Sewerage Commission. Oysters in large numbers are still taken from the south shore of Staten Island in the lower bay. The limits of New York Bay in the report of the Bureau of Marine Fisheries are not defined; presumably the upper bay only is meant. Nevertheless, the bureau should be aware of the fact that oysters have been, until very recent years at least, not only grown in New York Bay, but "drinking" in that grossly polluted part of New York Harbor known as the Kill von Kull, and in the worse polluted waters of the Rahway River before being brought to the city markets.

Soft clams abound along the shores of Jamaica Bay, the waters of which have been shown to be sewage polluted. For the most part, these soft clams are taken by various persons for their home use. In the summer, at low tide, dozens of people can be seen clam digging in Jamaica Bay. It is obvious that many of the clams so taken may be given or sold to friends in the neighborhood. Soft clams are also taken in Newark Bay, Arthur Kill, the Rahway River, and off City Island, and sold.

Hard clams are gathered just outside the Narrows near Sandy Hook and in the East River between Throgs Neck and Hell Gate. All of these regions have been shown to be polluted, although the Sandy Hook grounds are the cleanest.

It seems hardly necessary to any more than refer to the long known fact that oysters may be the cause of typhoid fever, and a number of epidemics have been reported by Thorne Thorne,¹¹ Conn¹² and numerous French and English writers. Of special importance is the report of Soper¹³ on the Epidemic of Typhoid at Lawrence, where it was definitely proven that oysters which were taken from Grass Hassock Channel, which was polluted by the entire sewage of Arverne, were eaten by the inhabitants of Inwood and Lawrence. It may not, however, be quite so evident that there is extreme difficulty in isolating the typhoid bacillus in water even though it may be grossly polluted, and it is also of extreme difficulty to isolate the typhoid bacillus from oysters. I have not been able to find any report where the typhoid bacillus has definitely been determined in oysters. The reports of the British Royal Commission on sewage disposal and the report made by Fuller (investigation of the New York State Department of Health) on

the pollution of Narragansett Bay have definitely proven that the colon bacillus does not normally live in oysters and is only found where there are evidences of sewage pollution. With the overwhelming amount of evidence which has been obtained in the past twenty years, it is shown conclusively that oysters which are taken from contaminated waters or which are "drunked" in polluted creeks are a constant source of danger.

So long as no typhoid bacilli gain access to the oysters, of course there is no danger of typhoid, but the presence of colon bacilli in the oysters, or the presence of visible sewage in the water or of colon bacilli upon either the presumptive test or actual determination, should cause oyster culture to be prohibited. In New York Harbor oysters are taken from various places in the eastern part of the East River, below Liberty Island, on the western part of the upper bay, in Raritan, Prince's and Jamaica bays. The New York State Department of Health, the Bureau of Marine Fisheries of the State, the Metropolitan Sewerage Commission and the oystermen themselves are making efforts to improve the conditions. Oyster culture is most profitable. At present there is no source of danger in Raritan and Prince's bays, but there is a critical situation in Jamaica Bay. With the improvement of Jamaica Bay as outlined by the Jamaica Bay Improvement Commission, and the work of the Sewer Bureaus of the boroughs of Brooklyn and Queens, it is hoped that within a few years Jamaica Bay will be less polluted, but it is hardly possible to expect that the purification of the sewage discharged into Jamaica Bay will be carried out to such an extent that the effluent discharged into the bay will be bacteriologically sterile. The ultimate result will be that oyster culture in Jamaica Bay must be given up.

Another source of danger to the public health exists in the free floating baths. There have been maintained by the city for many years floating bath houses in the East and North rivers. From nine to twelve baths have been maintained, and about 2,500,000 baths are taken during the summer. On account of the enormous number of sewer outlets from Manhattan it is difficult to locate a floating bath without its being somewhere in the vicinity of a sewer outfall. It is a curious anomaly that the legislature should have passed a law in 1905 making it unlawful for any person to maintain a private bathing establishment within 500 feet of any sewer outfall, and to forget entirely that a *public* bath might be maintained with impunity within the same distance. So, apparently, the city has lived up to the letter of the law in allowing public baths to be maintained within 500 feet of a sewer outfall. Five hundred feet, however, does not prevent the contamination of water at these bathing establishments, as was shown by a number of experiments made by the Metropolitan Sewerage Commission during the summer of 1909. Thirty-

two experiments were made of conditions at 14 bathing establishments. Dyes were introduced into the water at neighboring sewer outlets and in six establishments the water within the bath was stained within a few minutes from the time the dye was introduced into the water at the sewer outfall. Not only was the dye found in the water, but in a number of the establishments floating particles of sewage were seen in the water within the bath, and in five of the baths not only visible sewage, but also fecal matter was seen floating in the water. In one bath a net similar to a crab net was kept in order to remove floating fecal matter.

In its report to the Mayor, published April, 1910, the Metropolitan Sewerage Commission recommended that the maintenance of the floating bathing establishments be discontinued as soon as possible.

From the examinations of the quality of the water it does not seem possible to find a place at present which is free enough from contamination to establish a bathing establishment in any part of the Hudson, Harlem or East rivers adjacent to Manhattan or Brooklyn.

Although it seems possible to medical men that bathing in such highly polluted water might be a cause of disease, there are many technical difficulties in ascertaining what amount of disease may be caused thereby. The difficulties in tracing up any one case of typhoid fever are so great that many cases are impossible of solution. The Metropolitan Sewerage Commission recognized the difficulties of finding cases of disease which had resulted from bathing in these polluted waters, and did not make any special investigation in this direction. It is obvious, however, that it is unsafe to bathe in sewage when it is known that this sewage contains germs from patients suffering with many different infectious diseases.

Many poor people depend largely upon driftwood for their fuel, which is collected along the shores of the harbor and carried to the homes. Samples of this driftwood have been examined from time to time and naturally found to give evidence of human contamination. Although it is not likely that this should be a source of danger, yet it offers another possibility for investigation. Rats along the waterfront and vermin are also only possibilities and not to be considered too seriously.

Little statistical evidence can be offered therefore as to how much sickness is produced by polluted harbors. The vital statistics of London before and after the construction of their present sewage system showed little change in the amount of any of the infectious diseases, nor could any cause of illness be found in Dublin when the River Liffey was so grossly polluted. It may be said, however, that the eating of shellfish taken from polluted sources is a positive danger, bathing in polluted waters is disgusting and dirty and may be a source of danger, and

odors from polluted harbors are unpleasant and have, perhaps, some subtle influence on public health.

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ADDRESS ON THE OWEN BILL.*

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HOUSE OF REPRESENTATIVES, WASHINGTON, D. C.

IT is one of the most interesting features of all the talk we hear about progressive movements that most people who discuss progress nowadays seem to imagine that they have made a discovery—that is to say, that a progressive movement is a new thing. Around this idea we see schools of statesmanship being formed. Seizing the work progressive, we see public men asserting themselves in the name of independence, political reform, and in the name of prosperity and human happiness. How strange that the world so easily overlooks a great progressive movement which has been developing with marvelous strides, especially since the freedom of our Republic has thrown open every door of advancement through which earnest seekers after truth and progress may choose to pass.

I refer to the progressive movement which has been carried on by the doctors of this country, the purpose of which is save human beings from the consequences of neglect, ignorance, and mistake in matters concerning health. The medical man who gives of his genius and study to the better health of the people is not only a professional man in the ordinary sense of the word, but he is a statesman of the highest order. Give the people of a nation security in health and all else that is needed in the making of a great country "will follow as the night the day."

You have invited me to speak to you to-day on the measure introduced in the Senate by Hon. Robert L. Owen of Oklahoma, providing for the establishment of a National Health Department, which, in short, is intended to establish a de-

partment of government possessing the powers of a board of health—powers in our time so tremendous and so necessary when conditions call for their application.

Senator Owen calls his measure "A Bill for Race Conservation—A Conservation of Human Life and Efficiency." Briefly epitomized, the bill provides that there shall be at the seat of government an establishment known as the United States Public Health Service, and a Director of Health, who shall be the head thereof. The Director shall be appointed by the President. As assistants to the Director of Health, the bill provides for three Commissioners of Health, two of whom shall be skilled sanitarians, and one a skilled statistician, also to be appointed by the President.

The head of the Public Health Marine Hospital Service, the head of the Bureau of Chemistry—charged with the investigation of the adulteration of foods, drugs, and liquors (under the act approved June 30, 1906)—and the head of the Division of Vital Statistics shall comprise the three Commissioners of Health, whose salary shall be fixed by law.

One sentence in the bill really tells the whole purpose of such a department of government. It is in Section III as follows:

"That it shall be the duty of the Health Service to collect and disseminate information relating to the public health and to enforce the observance of all regulations and laws of the United States relating to health: Provided, That this act shall not be construed as attempting to authorize the Health Service to exercise, or attempt to exercise, without express invitation from the chief executive, or other proper authority of the State, any function belonging exclusively to such State, or to enter any premises without consent of the owner or occupant thereof. But the Director of Health, upon request of the chief executive, or other proper authority, of any State, Territory, the District of Columbia, or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the Health Service to assist the health authorities of such State, Territory, District, or insular possession, in protecting the health of the people of such jurisdiction."

In the outset, the bill has encountered powerful opposition, and an opposition, which if I believed was well founded, I would favor with all my strength. That opposition, in brief, is founded on the belief that the purpose of the medical profession who have been urging this department is to favor, by law and the great powers which go with such a bureau, one school of medicine to the exclusion of all other schools of medicine.

On this point, Senator Owen, in one of his recent speeches in the Senate, said:

"Mr. President: I am entirely opposed to promoting one school of medicine over another

* Read before the First District Branch of the Medical Society of the State of New York, at Poughkeepsie, October 4, 1912.

school of medicine. My purpose in urging a department of public health has been to establish a department of human conservation, *educational* rather than regulative, which would deal with the matter from an educational standpoint, so as to make effective and efficient the knowledge which we are slowly acquiring with regard to the preservation of human life." Then, in order to meet the objection which was brought forward by the League of Medical Freedom, the friends of the bill voluntarily presented this amendment by way of emphasizing the sincerity of their purpose:

"And provided further, That the Health Service established by this Act shall have no power to regulate the practice of medicine or the practice of healing, or to interfere with the right of a citizen to employ the practitioner of his choice; and all appointments within the Health Service, including the head of the Service, shall be made without discrimination in favor, or against, any school of medicine, or of healing."

In the light of all this, one may contemplate this proposed legislation with gratitude to those who propose it, and with high expectation for its ultimate success.

Such a bureau, for instance, would not attempt to heal people, or to treat plagues, or fevers, or epidemics, because its mission would be to prevent all these, lending the great power of the government to the saving science of sanitation. Such a bureau would deal with sanitary engineering, sanitary construction of streets, alleys, houses, sewerage, water supply, milk supply, and food supplies in general. It would have to do with the proper care of markets, the control of insect life, which is so frequently the cause of disease—as in the case of malaria and the yellow fever mosquito—with the extermination of the house-fly with its typhoid germ, and with the education of the people through authoritative publications, the schools, and through special instructors on the rules of right living.

These are but a few of the purposes set forth in the debates in the Senate on the Owen Bill. If the government proposed to set up a school of medicine for the treatment of disease, which treatment the power of government would force upon the people, the thing would be so monstrous as to be spurned by all intelligent people. Of course, the government has no such intention. But when the government proposes to make use of every branch of science and discovery known in preventing sickness, and protecting the people from plague and epidemic, as they pursue their various avocations, it simply proposes to protect itself, and that government which does most for the happiness and health of its people is certainly the wisest and strongest of governments.

In a recent article by Doctor Alleine Ireland—who was the founder and first president of the American Public Health Association, and crea-

tor of both the Health Department of New York State and the New York State Lunacy Commission, and who is the author of the law for the state care of the insane—he told how the cholera used to be carried by pilgrims from cities lying along the banks of the Ganges in India to Mecca, where it was communicated to other pilgrims, and thus spread from country to country with its terrific consequences. Instead of devoting their talents to the discovery of how to treat this plague, the doctors proceeded to agitate for laws and regulations to prevent it. And the simplest of all the regulations, and, at the same time, the most effective, was that compelling the pilgrims to take a wholesome bath before they started for Mecca. Doubtless, some of the pilgrims objected to this, but nevertheless the regulation has been enforced with its inevitable remedy of the evil.

This distinguished writer predicts that all contagious diseases will disappear in the twentieth century. Of course, he does not mean that all contagious diseases are going to be exterminated by curing people afflicted with them; but rather by the scientific *prevention* of disease. It is to this great work that Senator Owen would commit the government.

We must not forget that the government is already doing a great work in keeping the causes of disease out of the country, as far as possible. And surely there is no school of medicine which will claim to be injured by the Immigration laws which shut out contagious diseases of all kinds. There is not a day that dawns on Ellis Island, that the government officers there could not pass into the teeming city of New York a dozen contagious diseases to be scattered among the unsuspecting people on the streets. This would make plenty of work for all schools of medicine, no doubt, but with sad consequences to our country.

Wherever the hand of government falls upon pestilential centers, with the determination to make clean and wholesome that which before was pestiferous and poisonous, it falls in its own defense, and in defense of its people. In this light, I am sure the country will hail a National Department of Health.

We need not go to Oklahoma for examples of work by the government in the interests of public health. We have a case in our own Congressional district, which I have the honor to represent in the House. I desire to briefly state the facts in the case, as it bears directly on the principle in hand.

Some years ago, Mrs. Russell Sage presented to the National Government Constitution Island which is located opposite West Point in the Hudson River. In connection with this property is a large swamp which is a very short distance below the village of Cold Spring. This swampy region, lying there neglected, became a breeding place for mosquitoes and of odors destructive of

health. In investigating conditions in Cold Spring, I was assured by physicians that malarial fever, traceable to that swamp, had become a dreadful affliction to the people of that beautiful village, and surrounding country. The President of the Board of Education told me, and he was backed in his statement by the teachers, that the children in the public schools at Cold Spring were in many cases unable to keep up to the standard required by the state because of the malaria which afflicted them.

The Chamber of Commerce, the Board of Health, the Board of Education, together with the physicians of that locality, signed petitions which I asked them to prepare setting forth the conditions. That the United States government should maintain a property in that condition, and be responsible for the illness of a whole community, including defenseless school children, seemed incomprehensible to me and to all of us. It was further learned that one of the loveliest regions of the Hudson Valley, a region already famous for its beautiful summer homes, must eventually be deserted by sojourners and visitors in general unless the menace of malaria from that swamp could be done away with.

In a Congress bent upon the curtailment of all unnecessary public works, it was a difficult matter to have a project of this sort considered at all. But, by insistent appeals to the War Department, and by submitting the proofs I had collected in the case, I succeeded in having War Department engineers sent there to investigate conditions and suggest remedies. The result was an appropriation in the Army Bill of \$30,200 to be expended by the government in abating that malaria-breeding menace.

I may be pardoned for the use of the pronoun I in this particular case, because it is an illustration of what the government can do, and what it would have done long ago if it had a National Bureau of Health under which all these things would be considered. The removal of all *causes* of disease would be the chief business of the bureau proposed by Senator Owen.

This is what I call true progress in government; and it is manifesting itself even amid all the country-wide discussion of just what progressive measures are, and what they are not. The present Congress, of which I have the honor to be a member, established a bureau to be devoted to the investigation and remedying of conditions surrounding children and their employment. At the head of this bureau was placed Miss Julia C. Lathrop, a graduate of Vassar College.

We shall hear of this bureau doing thundering against the iniquities of that greed and conscienceless propoganda that waxes rich on the products of child labor. We shall hear of this bureau doing more to remedy the awful sweat shop conditions in which children fade and perish than has ever done before. We shall hear

of this bureau setting up standards of cleanliness in city centers and elsewhere for the guidance of those in whose hands the destinies of these unfortunate little children are placed. We shall hear of this bureau demanding that the yearning souls of children shall not be stifled in loathsome employments, and that their little lives shall not be crushed, nor allowed to perish for lack of sunshine and pure air, God's precious gifts to his children.

What school of medicine will lift its voice to chide the government for interfering when its purpose is to attain results like these?

One would think in reading the public prints that New York City was given over entirely to police atrocities and political intrigues. And yet, the doctors of New York are doing more every day for humanity and for the country than all the agitators that defile the city's good name ever did. The work being done for the prevention of disease by the health department and by the doctors everywhere throughout the city is magnificent in its extent, and holy in its results. The hospitals of New York City are monuments to mercy, and their equipment and service stand unrivalled throughout the world. But better even than these is the patient, devoted, scientific, work for prevention of disease which the physicians and the city government of that metropolis are carrying on all the time.

Nearer home we find the same spirit. For the doctors of the Hudson Valley are certainly to be ranked with the doctors of any other locality in the world as champions of sanitation and its beneficent results.

Government regulation of health is no new thing. Every village has its board of health, or ought to have. For the law of self-preservation is found in operation everywhere from a nation to an insect. It is this progressive spirit which has found expression in this proposed legislation.

It is not my purpose to discuss the mission of the League of Medical Freedom; for my confidence in the American people and the spirit of our government is such that I know an injustice to any honest project has but to be pointed out to be remedied.

That humanity has suffered at the hands of the quack, the imposter, and the unscrupulous vender of nostrums and humbug remedies, there can be no doubt. But these are not going to be exterminated by an act of Congress. You cannot save people from the consequences of their own credulity, ignorance, or mistake, by an act of the legislature.

This much the government *can* do. It can cultivate among the people an intelligent understanding of health conditions, from the use of the bath to the necessity of pure air. It can point out the consequences to the human race of the violation of the laws of health. It can lend its power to the work of cleanliness in places from

which disease might spring if neglected, as it so often does.

Let me pay tribute to the unselfish patriotism of the medical profession which would, if it could, prevent disease and sickness of all kinds, thus sacrificing its own calling for the good of the human race. What profession ever undertook a more noble work?

The medical profession, by the application of the laws of sanitation, would if it could put all the schools of medicine out of business. But the fact remains that the doctor we shall always need, since human nature is not likely to be changed. The doctor, like the clergyman, belongs to us. He is our friend. He comes to us in our affliction. In his hands humanity registers its first kick against a disappointing world. The sanctity of our home life, the very eyes of our beloved children, are his to treat and preserve.

Not only is the doctor the great hope of the home in hours of sickness and gathering terror. He is fast becoming the statesman whose term of office does not expire every two or four years, but who gives his whole life to the bettering of conditions under which we must pass our days in this world.

MILK AS A FACTOR IN THE PROMOTION OF PUBLIC HEALTH.*

By GODFREY ROGER PISEK, M.D.,

NEW YORK CITY.

SO much has been written and spoken about the danger of using milk as it is offered for sale in the markets that the value of good milk in promoting the public health has not received the proper attention, nor the appreciation which it deserves.

It is true that epidemics of typhoid fever, for example, have been caused by milk that was infected through polluted water used in washing dairy utensils, and many scientists believe that human tuberculosis was largely caused by drinking the milk from cows affected with bovine tuberculosis. The great number of cases of diarrhoeal diseases seen among infants fed on cows milk in the summer time and the high death rate that accompanied these cases, also tended to give milk a bad name as the cause of much sickness and loss of life. So altogether milk has been looked upon by many more as a menace to public health than as a means for promoting it.

Those who assert that milk is a potent cause of sickness and death really mean that *milk from diseased animals, polluted milk, and good milk improperly used* are a danger to the com-

munity and we must all agree with them in this contention.

It is undoubtedly highly proper to condemn the use of milk obtained from unhealthy cattle, and milk that has been contaminated with virulent bacteria, but it is as great a mistake to condemn milk as a whole, because some of it is not fit for use as food, as it would be to condemn the use of meat because some butchers sold meat from diseased animals, or meat that had become tainted from lack of proper care.

There was a time when there was no general inspection of meat and diseased meat could be offered for sale, but that period has passed and it is not too much to hope that before a great while, when the public is educated up to it and demands it, little or no bad or tainted milk will be sold.

Since it is to be shown that milk is a very great factor in promoting the general health when it is used as nature intended it to be used, and as it is possible to have a perfectly wholesome milk supply when there is a demand for it, it will be worth while considering seriously the part good milk can play in promoting the public health when it is used intelligently.

Most people look upon milk as merely a liquid food, but it is in reality much more than this. It is a *specialized* food furnished by nature during the period in which the digestive organs of young animals and infants are developing.

Some of our national legislators are to-day working for the conservation of our natural resources, and while this is important work, it is not comparable in value to the preservation of the lives of the children of the nation. Milk is to them of vital importance, as its greatest and principal value here lies in the fact that its use enables infants to develop normal digestive organs which will make them better fitted to obtain nutriment from a variety of food materials later on in life and thus make them more able to adapt themselves to their environment. In a few words, milk is an important factor in fitting young animals for the struggle for existence. It has a profound effect in fitting them for living under a wide variety of food conditions.

Milks from animals of different species differ from each other in the quantities of the food elements which they contain and also in their digestive properties, each milk being peculiarly suitable for each species of animals.

We know that there is a great difference between young animals in the anatomy and physiology of their digestive organs, in the rate at which they grow and consequently in their demand for food which will cause formation of tissues. There ought to be no difficulty therefore in understanding why an infant or a young animal does as a rule so much better on its mother's milk than on a substitute food. And, furthermore, when we realize that even per-

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

fectly good wholesome cow's milk (just as it leaves the udder and before it has had a chance to deteriorate or become polluted), has the food elements present in different proportions from those of human milk, and that in its digestive properties it is also unlike mother's milk, it will be clear why it is that even the best of cow's milk may not agree with some infants.

An infant that has strong digestive organs may be able to take care of good cow's milk with little inconvenience, but let that cows milk be only slightly soured, perhaps not enough to be detected by taste or appearance, and digestive disturbances arise. It may seem strange, but it is a fact, that while slightly soured milk is highly indigestible for infants, fully soured milk, or buttermilk is quite digestible. When slightly soured milk reaches the stomach it is almost instantly converted into a tough rubbery mass by the action of the gastric secretions and this mass acts as a foreign body and is apt to be quite promptly rejected by vomiting or by diarrhoea. The complete souring of milk consists in the formation of enough acid to throw the casein out of solution and so change its properties that it will not form a firm lumpy mass in the stomach, but will break up into fine particles which are easy of digestion.

Milk was not intended by nature to remain fluid in the stomach for the digestive secretions of all infants and young animals change milk from a fluid to a semi-solid before digestion takes place.

The function of the adult stomach is to take the food after it has been broken up by the teeth and reduce it to a fluid consistency that can readily pass out into the intestine. If mother's milk remained fluid in the baby's stomach this organ would not develop properly and later on when the teeth appeared and food which had to be chewed was eaten, the stomach would not be prepared for it as the change from liquid to solid food would be too abrupt.

If we study the digestive processes in the young it will be found that at first a weak gastric secretion is poured out which produces a very soft mass from the milk, but as the secretion becomes more potent, *i. e.*, stronger in acid, and more like the digestive secretion of the adult, it causes the milk to become more solid in the stomach. At weaning time, therefore, the change from liquid to semi-solid food is not as abrupt as it appears.

In gymnastic exercises a point to be avoided is straining the organs or muscles, and in feeding infants it is also necessary to provide against overtaxing the digestive organs. Nature provides for this by furnishing in milk a food that even though its nutritive value remains the same, has a wide range of digestive properties. The most remarkable feature in this connection is that the digestive juices as they themselves change in character or strength, determine the digestive

properties of the milk when they come in contact with it in the stomach. The rule seems to be, the more capable of digesting solid food the gastric secretion is, the more like solid food it makes the milk become.

Success in life is directly proportionate to ability to perform work, and as the energy which enables us to do work is derived from food, it is evident that a successful life is dependent upon a vigorous digestive apparatus. Since milk plays such an important part in the development of the digestive organs, its use has far reaching effects, and success or failure in life of many an individual may be traced back to a supply of good milk properly administered or to its absence.

Among artificially fed infants, the skilled use of good cow's milk affects the public health to a large extent by causing an immediate reduction in morbidity and mortality, as can be appreciated by a glance at the charts and figures showing the conditions in New York City before Infant's Feeding Stations were established, and those after they had been in operation over the summer months.

As chairman of the committee for the Reduction of Infant Mortality, it was the writer's privilege last summer to be in close touch with the first comprehensive campaign ever waged to reduce the deaths among the 125,000 newborn babies of cosmopolitan New York. Poverty and bad housing conditions we were powerless to ameliorate to any degree, but by furnishing pure raw milk and instruction in the elements of baby hygiene to the mother's, a wonderful reduction in infant mortality resulted.

That the work done in this last summer's campaign effectively reduced the number of deaths in spite of extreme hot weather and drought, can be proved by a survey of the following statistics:

The number of deaths of infants from all causes under one year of age, during the first nine months of last year, was 11,733; while during a corresponding period of 1910, the deaths reached 12,920—in other words, there is a comparative death-rate of 124.6, this year, against 142.3 last year, a decrease of 17.7 per mille among infants.

Not only does the intelligent use of milk cause a vast improvement in the general health which appears at once, but it starts out in life large numbers of infants who are fitted for the struggle for existence and who are not as likely later on to succumb to infections and diseases not classed as infantile. Milk properly used can be made to raise the physical standard and to promote general efficiency. While a vast amount of misery and unhappiness can be avoided by the right use of milk at the right time, it should be remembered that good milk alone will not bring about Utopian conditions. It must be intelligently cared for and used properly, and,

furthermore, not until physicians as a class realize that there is more to the successful use of milk than knowing a few feeding formulas, will the best results be obtained.

The invalid adult is often quite dependent on milk for a cure and the treatment is hampered by a poor supply. The public must realize that the obtaining of a *good* supply is not difficult but its production is more costly, they must be ready and willing to pay the price of such a milk. The housewife forgets that a quart of milk is equal in nutritive value to two pounds of chicken, to eight eggs, or three pounds of fresh codfish, while each pound of any of these articles is relatively much more expensive than a quart of good milk.

The animals supplying a wholesome milk must be healthy and their attendants must be clean and have no disease. The surroundings of the cow must also be clean and the supply preferably milked into sterile utensils, must be immediately cooled to prevent the growth of bacteria. Surely these conditions are attainable and do not call for unusual skill.

When the public appreciate the value of a pure milk supply and demand it, it will be forthcoming. It will then be unnecessary for the Health Boards to so rule that the people are *obliged* to buy a good milk to preserve the health of the community.

The physician feeding the infant who is not normal must consider not only the nutritive properties of the milk, but must so alter its digestive properties so as to suit this particular case and he may be obliged to lower the quantities of the food elements for a time until the infant is able to assimilate. Later, when normal conditions in the infant are brought about, the problem is altered. It is then necessary not only to supply enough milk to satisfy hunger, but to bring about the highest physical development.

From this outline, it may be seen that milk holds an important place in influencing the health of the public; and that it is a specialized fluid having possibilities of which the physician must take cognizance. In other words, good milk is a tool with which wonderful results can be obtained in promoting the public health in the hand of its master.

ADVISABILITY OF AMENDING ARTICLES II AND III OF THE PUBLIC HEALTH LAW.*

By W. B. HANBIDGE, M.D.,
OGDENSBURG.

ARTICLE II, Sections 2 and 3 of the Public Health Law enacts, that the State Commissioner of Health shall be a physician, a graduate of an incorporated medical college, with

at least ten years' experience in the actual practice of medicine and with skill and experience in public health duties and sanitary science, and that the term of office of the Commissioner shall be four years, with a compensation of five thousand dollars per annum, and, travelling expenses.

Is five thousand dollars sufficient remuneration for a man possessing such qualifications, particularly when we consider the fact that the appointment lasts but four years? As a rule, a physician of sufficient ability to make an efficient Commissioner of Health, who has been ten years in actual practice, has succeeded to such an extent, that from a financial standpoint, it would be very unwise for him to relinquish the foothold he has gained in a community and accept such a position. It is true that, at the present time, we have an able officer, whose love for the work has caused him to ignore pecuniary considerations, but if his connection with the Department of Health should be severed, it is doubtful if the State could secure a competent Commissioner for the specified salary.

The meagreness of the compensation is more apparent when we consider the sums paid other officials serving the State. The salaries paid certain State officials are as follows: Commissioner of Agriculture, \$4,000; State Architect, \$7,500; Attorney General, \$5,000; Superintendent Banking Department, \$7,000; Comptroller, \$6,000; Commissioner Department of Excise, \$7,000; Superintendent of Insurance, \$7,000; Medical Superintendent and President State Commission in Lunacy, \$7,000; Judges of the Court of Appeals, \$10,000; Supreme Court Justices from \$7,200 to \$17,500. Public Service Commissioners, \$15,000. Surely the services performed by any of these officials are not more important than that of the Commissioner of Health, who is directing the Department that is trying to conserve the lives of over nine million people.

When we take all these facts under consideration, it would surely be a wise policy for the State to amend the Health Law and fix the salary of the Commissioner of Health at \$7,000 per year and make the term of office as long as efficient service is being rendered.

Article III, Section 20 enacts, that "There shall continue to be local boards of Health and Health Officers in the several cities, villages, and towns of the State." According to this arrangement, in cities of the first and second class, owing to their size, Health Officers are employed who give their entire time to public health matters, but as every city of the third class, village, and town in the State employs a health officer, there are hundreds of such officials actively engaged in the practice of medicine who are paid a small sum to give a portion of their time to public health duties. These physicians who are usually general practitioners requires a knowledge of all departments of medicine, and, as a rule, cannot be expected to be skilled sanitarians. A certain number who

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are intensely interested in the work, no doubt, become very efficient, but we cannot expect this of the average.

Then these Health Officers are under certain influences that make it hard for them to perform their duties impartially. They are frequently enforcing rules that are displeasing to their patients, friends or neighbors and there is great temptation to be lenient in such cases. When we also take into consideration the fact that the Health Officers are guided by Boards of Health composed of men who have very little knowledge of sanitary science, we cannot help arriving at the conclusion, that the time has come when it is advisable to employ men as Health Officers, who shall be specialists in preventive medicine and who shall give all their time to their public duties. In order to bring this about the number of Officers would have to be diminished, and the territory served by each greatly increased. It is the opinion of the writer that we will never derive full benefit from the great discoveries of preventive medicine until we have a Health Department fashioned after the following plan.

Appoint a State Health Commission of which the Commissioner of Health would be Chairman. Give this Board complete jurisdiction over all Public Health measures in the State. Let them appoint all Health Officers and have appointments and promotions made under Civil Service rules. Constitute each city of the first and second class a sanitary district; and divide the rest of the State into sanitary districts, approximately one hundred miles square, each district following no present geographical divisions, but being mapped out with due regard to convenience of travel from a point near the center. At this center, locate a district health officer who would have under him a certain number of assistant district officers, located in different places. Establish a laboratory at the place of residence of the chief sanitary officer. State laboratories would, I think, be more economical and efficient than county laboratories as each would serve a larger district and it is highly probable that when once established the Legislature could be easily induced to maintain them in an efficient manner. The difficulty with the county laboratory is that when it is established each succeeding Board of Supervisors has to be importuned for funds to maintain it. It would be much easier to convince one Board—the Legislature—than dozens of Boards of Supervisors.

No doubt, there will be raised vigorous protest against taking away from the different municipalities the enforcement of Public Health Laws and concentrating so much power in the hands of a Commission. I think, however, such a procedure is justified, for, owing to the mobility of our population, a contagious disease breaking out in any part of the state may quickly spread.

The health of one municipality concerns all the others.

Under the system outlined the Commissioner of Health would have as complete control of his officers as a General has of his army. If a communicable disease broke out in any part of the State, he could concentrate his forces and stamp it out before it gained headway.

If the sanitary organization of the Panama Canal Zone were fashioned after that of the State of New York, could any one think for one moment that he could point with pride to the fact that preventive medicine efficiently applied has made the building of the Canal possible?

WATER POLLUTION AND TYPHOID FEVER.*

By HENRY R. HOPKINS, M.D.,
BUFFALO.

STATE medicine which is effective is essentially militant. The state for its own preservation and progress must war against the communicable diseases, against the pathogenic ignorance of her people, against the enemies of the state in all cases where false theories or convictions lead individuals directly or indirectly to oppose or to obstruct the chief function of the state—the preservation of the public health.

To-day the effectiveness of an army or navy is measured by the preparedness of its medical corps—to-day the efficiency of the preventive medicine of a state is measured by the competency of the medical profession of that state.

In this sanitary campaign for the betterment of the public health we assume, we take for granted, we predicate our action upon the existence of the state and of its right to make war for its self-preservation and betterment.

The existence of the material universe as taught in works on physics and chemistry; of the world of living things, plants, animals and man.

The existence of abnormal unfavorable conditions, generally known as disease, sometimes found in living things, plants, animals, and man.

The demonstrated knowledge that certain diseases are caused by the presence of certain toxins or certain micro-organisms, known as pathogenic germs;

The demonstrated knowledge that some of these germ or toxic diseases are communicable, and therefore preventable; recognition of the general economic principle that from the nature of the losses and privations of disease, prevention is wiser, safer, and cheaper than cure;

That there is a special department of scientific knowledge known as State Medicine, in which municipalities and states find their chiefest occa-

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

sions for manifesting their intelligence and power of self preservation;

That State Medicine is not the product of any particular class or school of physicians, but is the priceless contribution of all men of science;

That typhoid fever is a conspicuous member of the group of the communicable diseases of especial interest, here and now, by reason of its scandalously high morbidity and mortality—and that typhoid fever as known in State Medicine, chiefly prevails in direct proportion to the pollution of the water supply.

The medical men of the Empire State have many reasons for pride in their profession, however, the record of the morbidity and the mortality of typhoid fever are not of these.

In the year 1911, as in previous years, many of the cities of the State of New York had from 5 to 47 times as many deaths per 100,000 from typhoid fever, as had the more fortunate cities of Europe, Christiana, Edinburgh, Stockholm, Berlin, Hamburg and Munich.

When the Regents of our University wish for a sufficient reason for doubling the height of the standard of the competency of the medical profession of the State, the said reason can be found in any current work on vital statistics—chapter on typhoid fever.

These elemental affirmations may appear to some of you as quite uncalled for, as too axiomatic to require statement. They are offered in obedience to the military principle, that it is never wise to forget the position, the purpose, and the power of the enemy; and the enemies of State Medicine of to-day and of the near future emphatically deny practically every one of these affirmations.

The medical profession of the various countries of Europe for many years, have like the members of the medical corps of the army and navy been selected and admitted from considerations of the service they might render the state, rather than for reasons of personal preferences as to income and vocation. By reason of their careful selection and consequent competency, the influence of that profession in matters of State Medicine has been of singular potency.

Vital statistics have been studied, problems of the communicable diseases have been investigated, men of science have spoken to the earth and the earth has taught them.

Inspired by their medical advisors, the States of Europe have made war upon the polluted water supplies of their cities, with the result that typhoid fever is almost as rare in those cities as small pox.

Modern science and with greater particularity the science of medicine owes its progress to the protecting, correcting, directing influence of the control experiment. To-day, America may be called the control experiment, the demonstration, the conspicuous illustration of the cause of ty-

phoid fever and of the effective means by which typhoid fever may be prevented.

A recent writer gives the comparative experience with this disease of the year 1910, of some 33 of the principal cities of 12 of the countries of Europe, including a population of more than 30 millions of people, and 50 cities of America of a population of more than 20 millions, showing that we of America, had very nearly four times as many deaths per 100,000 from this disease as did they of Europe.

With deep humiliation we are obliged to admit that in this group of American cities are many of this State, and further that many of the cities of this State having the highest typhoid fever mortality were not included. Right here, it may help us to recall that the average annual loss of America from this disease is more than 16,000 lives, and that many of this appalling number are men in the prime of life at the very height of usefulness.

The significance of the enormous disparity between the typhoid fever death rates of the State of New York and of the more intelligent cities of Europe, is the more readily appreciated when we recall that for years those same European cities suffered as we now suffer from a high prevalence of typhoid fever, and that this high prevalence was immediately improved when the polluted water supply of the city was replaced by a water supply of greater purity. This demonstration of the relation of the water supply and the typhoid fever death rate has been repeated so many times, in so many places, that sanatorians the world over are in accord upon the question. Give me the typhoid fever death rate of a given place and I will give you the degree of purity or contamination of the water supply of that place.

We have alluded to the intimate causative relation between the competency of the medical profession of a state and its death rate from typhoid fever; we have not hesitated to suggest to the Regents of our University the possible bearing of this fact upon the future growth of the standard of admission to the ranks of the medical corps of the State of New York.

We have had this conviction as to how typhoid fever is to be prevented for many many years, the progress in our knowledge of the causes of typhoid fever of the last decade what we know and believe of the role of the dust of our market places and the exposed vegetables and fruits; of milkman's milk, contaminated in many ways, possibly diluted with water rich with typhoid germs; of the contaminations of foods from flies, but recently visitors of the receptacle of typhoid fever excreta; of our rapidly growing knowledge of the role of the carriers of the typhoid germs; of the enormously significant fact, as a recent writer has stated—that a water supply to be safe must be free from contamination for 365 days of every year—all this rapidly growing knowledge

of the causes, great and small of typhoid fever, does only confirm the conviction that the responsibility for the existence of typhoid fever in common with the other communicable diseases, rests upon the medical corps of the state and the efficiency, the competency of that profession may be intelligently inferred from the death rate of that disease; and we of the State of New York have from 5 to 47 times as many of such deaths as have many of the cities of Europe.

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THE EPIDEMIOLOGY OF TYPHOID FEVER.*

By THEODORE HORTON,

Chief Engineer, State Department of Health.

FOR an engineer to address a body of the medical profession on the subject of typhoid fever might on first thought seem somewhat incongruous—somewhat like "carrying coals to Newcastle"; and, indeed, it would be, were other than the sanitary engineer meant, or were the subject other than that of epidemiology.

The fact is, however, that epidemiology occupies a somewhat unique, if not anomalous, position in the field of public health work; while not exclusively a part of any one profession, it is associated indirectly with four, those of medicine, biology, chemistry and engineering. And when we consider that epidemiology of typhoid fever has little to do with the cure of the disease, that over 80 per cent. of recorded typhoid fever epidemics have been traceable to contaminated water supplies, and that the sanitary engineer is by training versed in the principles and technique of bacteriology, it is simple to understand why state health departments have entrusted to their engineering divisions this important work of investigating epidemics of this particular disease.

Now, in presenting what I have to say on this subject of epidemiology this morning and limiting myself exclusively to a study of causes and not to remedial measures, I believe I can do no better than to assume a hypothetical case of a typhoid fever epidemic and outline briefly the successive steps that would be employed in the investigation. Let us assume, if you please, that

one of our municipalities has become alarmed over an outbreak or an undue prevalence of typhoid fever, that it has appealed to the state department for assistance, and that a member of the sanitary engineering staff has been dispatched to investigate the situation.

The first question that would naturally arise, and one which he would certainly wish to settle, is as to the extent or prevalence of the disease, *i.e.*, as to whether it is epidemic and how serious. This question is an important one owing to the general alarm, if not hysteria, that usually prevails in a community in which typhoid fever is epidemic, and it can only be answered by comparing the mortality rates during the progress of the supposed epidemic with the known rates of other municipalities under normal and epidemic conditions. To make this comparison I usually take the maximum weekly or monthly case rate as found and from this I compute the mortality rate per 100,000 population for the entire year, using a lethality of 10 per cent. This figure must, however, be corrected for seasonal variation, and fortunately this correction is a simple one. That is, if we study the seasonal distribution of typhoid through the entire year we find that it may be divided into three periods of four months each in which the prevalence of this disease is approximately in the ratio of 1, 2, and 3; *i.e.*, 1 for the months of December to March, inclusive, 2 for April to July, inclusive, and 3 for August to November, inclusive.

By applying this simple ratio, then, we obtain the equivalent yearly mortality rate corresponding to the occurrence of cases at the time of our investigation and can readily compare them with other rates; that is, with, say the average for the entire state, which is about 15 per 100,000; or with such cities as Niagara Falls and Pittsburgh, where for years the people submitted uncomplainingly to rates of from 100 to 200 per 100,000; or, finally, with places like Ithaca, Scranton and Butler, where, during the times when the epidemics were raging, the rates rose as high as from 4,000 to 5,000 per 100,000. By such comparisons, then, we can judge at once as to whether the disease is normal, unduly prevalent or epidemic, and how urgent must be our measures for its suppression.

With this picture before us, then, we approach the second and more important step in our investigation, *viz.*, a study of the source or inciting cause of the epidemic; and as a prerequisite to this study we must have two essential pieces of information.

One of these is a map or plan of the afflicted district, upon which must be plotted all known cases of the disease, with the respective dates of onset. Such a plan is indispensable not only in studying the progress of the epidemic, *i.e.*, the paths or channels along which the cases have developed, but in showing graphically the dis-

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tribution of cases with reference to any common focus or foci of infection.

The other indispensable information is a chart, in the form of a table, showing essential facts in connection with all of the cases. I will assume temporarily that all of the cases have been fully reported, appreciating, of course, how bold an assumption this might at times be. If, however, the cases have not been fully reported, this information must then be secured,—if necessary, by a house to house canvass. This table will record in the first column the name of each case in the order of its occurrence. In the remaining columns will appear, successively, information covering age, sex, dates of onset, and residence prior to illness; the sources of water supply, milk supply and ice supply; information concerning the eating of shell fish and other possible uncooked foods; information concerning the sanitary conditions of the premises, such as plumbing, screening of windows and doors, general cleanliness, etc.; and last, but not least, information with reference to prophylactic measures and disinfection in the care of the patient. In fact, these columns may be extended indefinitely. The more information we can record in this tabular form the better, and the most may oftentimes be found none too much to aid in a final solution of the problem.

With this map and chart before us, then, we shall be in a somewhat strategic position to determine, or at least fasten our suspicion upon, the probable cause of the epidemic. It is here that a broad knowledge of the principles of biology, chemistry and engineering must be applied. Sometimes a mere glance at our chart and map may reveal at once the inciting cause of the epidemic. More often, however, it will be necessary to study intently both chart and map, guiding ourselves always by the teachings of typhoid fever epidemics as they have occurred in the past.

Thus if the epidemic is due to the public water supply it will usually be characterized by a uniform distribution of cases over the entire map and by a gradual increase in the number of cases, approaching a maximum and then gradually receding. The rise may or may not be parallel with the normal seasonal distribution curve, and if not, and especially if the rise is in winter, the evidence will be strong that the water supply is the cause. In any event, however, a sanitary inspection of the source of the water supply, together with laboratory tests, will be necessary to confirm the evidence.

If, again, the epidemic is due to well water it will be evident at once from both chart and map—the map showing a cluster of cases in some restricted area, and the chart giving the information as to which well is involved. Here again an inspection, supplemented by laboratory analyses, will give the necessary confirmatory evidence.

Again, the epidemic may be due to milk and it may be explosive or slowly progressive in character. If explosive, *i.e.*, due to a sudden or intense infection, both the map and chart will show at once what milk route is involved, and a close search at the dairy, or along the route, will soon disclose the inciting cause. If, however, the epidemic is slowly progressive, it may be difficult to trace, and the suspicion would naturally lie in the direction of some bacillus carrier at the dairy. Close inspection, tactful questioning and laboratory tests will usually suffice to confirm the diagnosis.

Still again, the epidemic may be due to the consumption of raw shell fish or uncooked vegetables and fruits, and here again we may find it characterized by an explosive outbreak or a gradual progression. If it is shell fish it will probably be explosive in character, and by means of the chart we will be able to trace out the particular lot or consignment of shell fish which is responsible. If it is vegetables or fruit our search for the cause may be more difficult, but will probably be traceable to some garden or field fertilized with infected manure. The recent researches of the U. S. Hospital and Marine Corps are very illuminating on this point.

Finally, the epidemic may be due to secondary infection, in which case it will generally be characterized by a very gradual spread of the disease and an almost unmistakable continuity and chain-like sequence of the cases. It is here, however, that a study of the dates of onset, of the channels along which the disease has spread, and of detailed information concerning individual cases will be necessary. Indeed, the very complexity of the situation will often suggest secondary infection; and since this infection will probably take place through such agencies as fingers, foods and flies, it will require the closest scrutiny to confirm our diagnosis.

History has, of course, recorded epidemics which have been due to other causes than those mentioned, but time will not permit me to enter into a discussion of them. I fear I have already transgressed the short interval allotted, and in closing I wish to emphasize one point, and that is the close relationship, if not responsibility, which the practising physician holds in connection with this work of epidemiology of typhoid fever. The success of any investigation must be based largely upon the information available from the reports of practising physicians; and without attempting to moralize unduly I wish to state finally that I know of no way in which the practising physician can show his interest in public health work or contribute more to its success than by the promptness, completeness and accuracy with which he reports his cases of typhoid fever and other communicable diseases.

THE SURGICAL TREATMENT OF PROLAPSE OF THE UTERUS.*

By CHARLES CLIFFORD BARROWS, M.D.,
NEW YORK CITY.

ONE has only to review the literature bearing on the surgical treatment of Prolapsus Uteri to realize that operative procedures looking to the relief of this most distressing condition have not heretofore been entirely satisfactory.

The early operators believed that the primary thing to do in these cases was to remove the body of the uterus, basing this belief upon the supposition that it was the weight of this organ that carried downward with it in its descent the anterior and posterior vaginal walls and with them the bladder and rectum.

They soon found out, however, that after this procedure the cystocele and rectocele were worse than they had been before the hysterectomy was done. An effort was then made to sustain the vaginal walls by attaching the surfaces of the broad ligaments severed by the vaginal hysterectomy to the top of the vagina from which the uterus had been removed. This seemed reasonable at the time, but these cases soon relapsed and their last condition was worse than their first. And again, the abdomen was opened and either the stump of the vagina after the removal of the uterus in toto or the stump of the cervix after the removal of its body alone was fastened to the anterior abdominal wall. These cases relapsed as promptly as the others and the patients were subjected to constant distress due to the dragging on the abdominal wall. In this connection, let me call your attention to the following case:

M. O. B. a waitress, 48 years old, an alert intelligent woman tells us that about ten years ago she went to the Woman's Hospital to seek relief from backache. She was told that she had a displacement of her womb and was operated upon by one of the attending surgeons. After operation, she was informed that the displacement had been corrected, but that "nothing had been removed." She has never menstruated since. Her backache was relieved but she has had since her operation a constant nagging, dragging sensation at the lower angle of the abdominal wound together with such vesical irritability that she has been unable to follow her occupation without great discomfort and inconvenience.

About four years ago, she noticed what she believed to be her womb protruding from the outlet of the vagina. This protrusion has steadily increased until at the present time what she believes to be her womb lies well outside her vulva between her thighs. She comes to us for relief of this condition. In addition to this "falling of her womb" she feels a constant drag-

ging and pulling at the lower angle of the abdominal wound and a vesical irritation which is a constant source of distress to her.

Examination shows a small elongated uterus lying outside of the vulva with a well marked cystocele and rectocele traction on this organ resulting in a pitting of the lower angle of the abdominal scar showing evidently some attachment of the fundus uteri at this point.

I opened the abdomen and found the fundus of the uterus attached to the lower angle of the abdominal wall by an adhesion the size of an ordinary lead pencil. The uterus itself had been drawn out until it was no thicker than the thumb and from its point of attachment to the abdominal wall to the cervix lying between the woman's thighs the organ measured eight inches in length. The fallopian tubes and ovaries were intact, the ovaries having undergone atrophy so that they were about one quarter their normal size. What a commentary this case is on that unsurgical, unscientific, unnecessary, and what I have always believed to be unlawful procedure ventral attachment of the uterus whether it goes under the name of fixation or suspension. Of course the first thing to do in this case was to relieve the woman of her distress caused by the ventral fixation. That was tied off and cut away. The operation employed for relief of the prolapse will be described later.

These operations having proved failures in the hands of most gynecologists other methods were adopted most of them having for their basis approach from the vaginal direction, extensive anterior and posterior colporrhaphy, obliteration of the vagina by introduction of concentric rings of silver wire and various other procedures of the same kind. All of these procedures were destined to meet with the same inevitable relapse and condition worse than that before operation. Some operators then began to open up the anterior vaginal fornix and after separating the bladder attempted to bring together the tissues in the vicinity of the cervix with catgut or other sutures. Much success has been claimed for this procedure by some of those who have employed it, but I must confess at my hands, it has proved a failure.

Many years ago, Prof. Polk called my attention to the fact that any operative measure which in any way interfered with the nutrition of the anatomical structures comprising the upper floor of the pelvis by cutting off their blood-vessels or their trophic nerves must result in an increased relaxation of these structures and in this way defeat the purpose for which the operation was intended. This to my mind offers a very plausible explanation of the failures in many of the operative procedures which I have mentioned.

With this in mind and under his guidance, I began many years ago to adopt a plan of procedure which while it has nothing novel about

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

it, has proved to be satisfactory in most cases at my hands.

There follows the several stages of the operation all to be done at one sitting:

1. Amputation of the cervix uteri.
2. Anterior colporrhaphy.
3. Repair of the torn or relaxed perineum by the flap-splitting method with approximation of the separated perineal muscles and fascia, together with shortening of the round ligaments by Alexander's method.

This plan of procedure carries with it no danger to life with a short period in bed two weeks as a rule, very little discomfort to the patient and in properly selected cases a permanent cure.

I have pursued this plan in a large number of hospital cases and they are all reported as cures on the hospital records. This, of course, refers simply to their condition when they left the institution. It is impossible to follow up these hospital cases and therefore I shall not report them here. But I do want to call your attention to some cases upon whom I have operated in my private practice.

Case I.

Mrs. J., 55 years old, the mother of four children began to suffer from dragging pains in the back and irritability of the bladder about the time of her menopause seven years before coming to me. Shortly after her menopause was established, she was conscious of the fact that her uterus was protruding from the vaginal outlet. This increased steadily until the whole organ together with the anterior and posterior vaginal walls were outside of the vulva between the patient's thighs. In May, 1911, eleven years ago the patient was subjected to the operative procedures described above. She made a complete and satisfactory recovery and has been entirely well up to the present time.

Case II.

Mrs. B., 50 years old, presented the same symptoms and had the same condition revealed by examination with the addition of a small uterine polyp protruding from the os uteri. The polyp which had its attachment on a level with the internal os was removed and the procedures described above resorted to on January 10th, 1904. The patient is entirely well to-day and makes yearly trips to Europe, where she walks and motorts extensively without discomfort.

Case III.

Mrs. J., Jr., the daughter-in-law of the patient described under Case I, a young woman of thirty, the mother of two children consulted me because of a complete procedentia with cystocele and rectocele and extensive perineal laceration. She was induced to come to me because of the result of my operation upon her mother-in-law. She was operated upon in September, 1905, with a complete relief of her

symptoms. In spite of a most arduous life as an actress, she is now after seven years entirely well.

Case IV.

Mrs. D., fifty-five years old, the mother of five children was referred to me by Dr. Ambrose Becker. The patient, a woman weighing 250 pounds was practically invalidated by a complete procedure with tremendous cystocele and rectocele. There was extensive ulceration about the cervix, which gave her great discomfort. She was operated on in May, 1908, in the manner described, care being taken to remove thoroughly the tissues in the vicinity of the ulcerated surfaces together with these surfaces. In spite of her great size, she made a prompt recovery and Dr. Becker reports her to-day as well and free from any discomforts.

Case V.

Mrs. R. (referred to me by Dr. Jos. E. Winters) 25 years old, weighing 210 pounds, the mother of one child presented practically the same condition as existed in Case IV, except that she had a complete laceration of the perineum and practical incontinence of feces and urine. There was extensive ulceration about the cervix and corresponding areas on both thighs. Her life was a burden to her. Two years ago in January, I operated upon her in the manner described and she is now perfectly well and free from discomfort. She has but recently consulted me as to the advisability of her having another child which I assured her she might do with perfect safety.

I have selected these five cases from my private practice because they illustrate well the various kinds of cases to which this combination of surgical procedures may be well applied. It is particularly applicable to very fleshy women whose abdominal walls we do not care to injure and to young women who have had comparatively rapid prolapse following extensive perineal lacerations.

The resort to the shortening of the round ligaments by Alexander's method, I regard as the most important part of the procedure. This changes essentially the direction of the uterine axis and makes the cervix (transformed by the amputation from a conical to a blunted end), impinge upon the posterior vaginal wall above the restored perineal body instead of following the axis of the vaginal canal.

It is gratifying to find that while the outer portion of the round ligaments in many of these cases, especially in the very fat patients is very slender and sometimes the site of fatty degeneration, if followed up and drawn out carefully, the portion within the peritoneal cavity next the cornu of the uterus is unusually well developed. In many cases I have found them thicker than the end of the little finger.

I shall not take up your time in attempting to

relate the various surgical procedures which have from time to time been put forth for the cure of prolapse of the uterus and having for their essential principle the narrowing of the vagina from below but in conclusion shall offer you a single operation which I believe to be the ideal one in every case in which we have no hesitation in opening the abdominal cavity.

Exactly three years ago Prof. Wm. M. Polk reported to the American Gynecological Society a case of complete prolapse in which he had employed an original plan of operative procedure, the operation being done on June 10th, 1909. Following the report of the case, he presented to the society in the same paper a most scholarly description of the procedure and a clear and concise exposition of the anatomical facts upon which the operation was based.

The essence of the argument is the recognition of the fact that prolapse of the uterus is a hernia of that organ and its attached bladder and rectum due to a relaxation of the upper pelvic floor.

The object of the operation, therefore, is to restore the integrity of the pelvic floor without damage to its blood supply or serious interference with its trophic nerves. It has been my great pleasure to assist, Dr. Polk personally in many of the cases in which he has resorted to this procedure as well as to employ it myself on several occasions.

Dr. Polk has very kindly given me permission to refer to his cases and to make use of such of his drawings as I may need for illustrating this brief paper.

I quote here in description of this method Dr. Polk's own words given to me in a personal communication. The operation is as follows: "When you have cleansed the vagina, paint it over with strong tincture of iodine. Opening the abdomen the pelvis is freed and kept free of all intestines, except the rectum and lower colon. The cervix uteri is now firmly grasped in front with a bullet forceps and the structures put on the stretch forward and upward. Grasp the broad ligament and the utero-sacral fold between the thumb and forefingers. Locate the uterine artery where it leaves the uterus and curves outwards towards the main trunk. The thumb being in front against the uterus, will have the ureters just at its outer side—pass a suture from before backwards through the structures held in the grasp, entering about half an inch above the artery and about one-third from the uterus emerging beneath the utero sacral fold from half to one inch from uterus, according to the amount of elongation of this fold—the outline of this suture can be detected by touch, insuring its avoidance of the ureter which is to its outside, doubling it back above the sacral fold and above its track through the broad ligament, it is passed deep through the anterior lateral aspect of the utero-vaginal junction, and the ends are then

temporarily held with a pair of forceps. A suture is passed and secured in similar manner on the opposite side. If these sutures are drawn tight and tied now, the subsequent manipulation upon the vagina may loosen them. The peritoneal covering is now slit from the uterus to the bladder, the vagina being held taut upwards. Through this opening (it may be enlarged by lateral incisions if necessary) the bladder is separated from the entire anterior face of the vagina as far as the trigone, or even lower. This separation is made best with the gloved finger covered with gauze, or even with gauze in a sponge holder, the grip of the gauze displacing the tissue with the least risk of injury to important structures. One hugs the vaginal wall in this separation which is recognizable by its smooth and yellowish white appearance. The ureters are pushed up and away from the vagina, especially at the point the first plicating suture must transfix. This point is as far down as possible upon the antero-lateral column of the vagina. Seize it with bullet forceps (taking a generous bite), draw it up and pass the suture from without in, repeat this on the opposite side. In this fashion the vagina is plicated from below upward. The number of sutures required depends on the length of the vagina, rarely more than four. The uterine arteries are avoided, locating them by touch as you reach their region; arteries and veins, when necessary, are tied. Hemorrhage is rarely a troublesome feature and always easily controlled.

The next step is shortening the lateral and posterior attachments of the uterus, the base of the broad ligament and the utero-sacral fold. To this end the sutures already in position are drawn taut and tied. This brings all of the attachments included well forward and shortens them up effectively on each side. The next step is to bring the peritoneum together along the line of your incisions, taking in any slack that may exist therein. In this connection the round ligaments and peritoneum may be utilized. That is the round ligaments can be caught up about an inch and a half from the uterus brought together and fastened down at the utero vaginal junction. If the fundus then needs to be brought forward, you may seize the round ligaments an inch further out and attach that point to the uterus where the ligaments originate. The requirement is to get the peritoneum which belongs to the anterior face of the broad ligament well down into the utero vesical space, so as to make as shallow as possible the fossa between the uterus and the bladder. In this way you check the first effects of abdominal pressure. You meet it at the highest point in the field. The abdominal wound is now closed and the vagina becomes the field of operation.

More or less of a ridge will be found upon the central line of the anterior vaginal surface. Seizing this fold at the lowest point with a pair of

artery forceps you cut directly into it; the introduction of the director will then enable you to slit it from below upward quite to the uterus without danger of interfering with the sutures that you used in the suprapubic plication. The two folds of the vagina may now be treated as conditions require. You can remove as much or as little as the judgment of the operator may suggest. My own feeling is that a strip extending about half way between the line of plicating sutures and the cut edge may be removed. The surface then left may be brought together by chromicized gut, which may be put in either separately or continuously, as the exigencies of the case require. If preferred, this fold may be left and its opposite surfaces stitched together by through and through sutures. If the condition of the patient is good and the peritoneal body needs repair, as it usually does, this may be done now. This closes the operation. In one of my cases, I found the utero-sacral folds so well developed and elongated that I drew them through the opening in the base line of the broad ligament and approximated them in front of the uterus, but it is well to realize that the utero sacral fold is sometimes a very disappointing structure. Clearly outlined both as regards location, and direction, and well developed, it is speedily found in some cases—in others it may lack distinctness, and instead of passing directly back toward the sacrum as we hope for, we find it branching off to the right or left and presenting indistinct lines of attachment to the lateral posterior pelvic walls on the two sides. In these cases, I have found that the lateral attachments of the uterus as represented in the base lines of the broad ligaments are stronger and more developed than in cases in which the utero sacral folds have the expected growth. In all my cases, I have met with evidences of shock in but one, and these were such as required more manipulation behind the uterus than I have used in my later cases. Such hemorrhages as occur are easily controlled. Most of it is venous, which as a rule has ceased by the time the operation is over. The arterial hemorrhage, if any, is readily controlled. Of course, the vital points in the situation are the ureters, but by keeping close to the vagina in separating the bladder, especially as you approach the lower part of the field, and by carefully inspecting the portion of the vagina at which you pass your sutures, this danger is escaped.

All sutures, except those for vessels and closing the peritoneum, ought to be of good sized kangaroo tendon."

The operation upon the anterior vaginal wall was not resorted to in some of the earlier cases of Dr. Polk nor in my first two cases. The result was that there was left a semblance of a cystocele in spite of the fact that the bladder was well up and all vesical symptoms had been relieved. This was not of material importance

except that it left in the mind of some of the patients a belief that the cure had not been completed. The splitting of the vaginal wall with the cutting away of the redundant tissue and subsequent suturing has done away completely with this minor difficulty.

In illustration of the results derived from resorting to this operation of Dr. Polk for the relief of prolapse of the uterus, I want to report sixteen cases. Thirteen of these cases were operated on by Dr. Polk himself and three at my own hands. The time that has elapsed since the operation varies from three years to a few months. They have all been followed carefully and closely since their operations having been required to report at frequent intervals and be examined by Dr. Polk and myself and the house gynecologists at Bellevue Hospital and so far in every instance the relief from the prolapse seems to have been secured absolutely and without complication of any kind or discomfort to the patient.

Two of my own cases, of more than two years standing are well and free from any discomfort. In one of these cases (the first one operated on), I found a very exaggerated prolapse in a thin emancipated badly nourished woman of sixty years of age. It was reported to me that she had after two years a beginning of a return of the prolapse. But examination revealed the fact that the uterus was in excellent position, that there was really no cystocele and that the anterior vaginal wall was in the same condition that I have spoken of before, being lower than it should be and presenting at the vulvar outlet. In this case no operation had been done upon the vaginal wall and I am quite sure that if I had followed such a plan as was suggested later by Dr. Polk that is splitting the anterior vaginal wall and narrowing it by sutures, no suspicion even would have been held as to the success of the original operation.

The second case of mine has no discomfort of any kind and is apparently perfectly well.

In the third case, the splitting of the anterior vaginal wall was resorted to and this patient has perfect comfort. It has only been three months since this operation so that it has not yet had a fair test of time.

It can be readily seen that this plan of procedure is applicable to all stages of uterine prolapse, because the amount of tissue included in the sutures which have for their purpose the restoration of the integrity of the upper pelvic floor, can be modified to suit each individual case. Where the amount of prolapse is moderate and the corresponding relaxation of the pelvic floor of small degree the sutures do not have to plicate folds of much extent. But, on the other hand, where the amount of prolapse is extensive, broader areas of tissue must necessarily be included within the grasp of the sutures. In all of the cases operated upon by both Dr

Polk and myself the convalescence has been satisfactory and while in several cases, there seemed to be considerable induration in the neighborhood of the lower sutures shortly after the operation, this had entirely disappeared in all cases within a few weeks.

Discussion.

DR. RALPH WALDO, New York City: I have been much interested in Dr. Barrows' paper and in this class of operating for several years, having had exactly the same experience that Dr. Barrows has had with the methods of suspension, fixation, and so forth. After looking over the cases carefully, it has seemed to me that the operative procedures to cure procidentia have been very well carried out with one exception, and that was the operation to cure the cystocele. Dr. Barrows' method here is one that cures cystocele in addition to the methods of operating that have been followed before him and which he has mentioned. I have not followed the method he has to cure cystocele. I have followed up suspension by anterior vaginal section and bringing the uterus forward, the upper portion of it, within one-half inch of the meatus urinarius, and the bladder on top of it. While it is not the only method, it is an efficient method to cure cystocele. I have performed over two hundred of these operations in the last few years, and the results have been much more satisfactory than by any other method.

DR. BARROWS (closing the discussion): After this operation is done of tightening the pelvic floor and lifting up the base of the bladder, the prolapsed vaginal wall, which has existed there, should carry with it the bladder. It is not a cystocele now. The base of the bladder has been relieved by the primary operation, but there is a prolapsed vaginal wall which, at times, is felt by these patients, and they do not believe that the condition has been relieved because they feel and see that protrusion. It is for that purpose we slit the vagina up and take away enough of it to shorten up the anterior wall, but this is not done to cure the cystocele, because that is cured by the original procedure from above.

UTERINE FIBROIDS COMPLICATING PREGNANCY.*

By RALPH WALDO, M.D.,
NEW YORK CITY.

BEFORE considering uterine fibroids complicating pregnancy, it is well to review a few of the most salient points regarding uterine fibroids in general.

They are composed of the same tissues that

form the normal uterus. When the fibrous elements predominate, they grow slowly and are very hard in consistency. When the muscular elements predominate they usually grow much more rapidly and are frequently very soft in consistency. This variety is subject to rapid and sudden changes, while the hard varieties vary little in size, are of slow growth, and rarely undergo sudden changes. All fibroids have a capsule that is more or less marked. The harder the tumor the more pronounced is the capsule, while in some of the very soft varieties it is scarcely present at all.

All fibroids start as interstitial growths. Some remain so and become circumscribed, while others become quite generally diffused through quite a portion of the substance of the uterus, or may involve the whole organ. In other instances the more or less circumscribed growths develop either toward the external or the internal surface of the organ. In which instance they are called either sub-serous or sub-mucous depending upon their locality. Either of these varieties of fibroid may have a broad base or a small pedicle. In the last instance the pedicle may become strangulated and the tumor become gangrenous; interstitial growths and tumors with broad pedicles may become gangrenous. Many other varieties of degeneration may take place in these growths that may result in their disappearance without injury to the patient.

Fibroid tumors may be found in any portion of the uterus. They most frequently occur in the posterior portion of the body and rarely in the cervix. In reported cases of fibroid in the nonpuerperal uterus from 2 per cent. to 8 per cent. are found in the cervix. They usually occupy the posterior lip rarely both. In the puerperal uterus complicated by fibroids about 10 per cent. will be found in the cervix. Showing that probably the endometritis of the fundus caused by a growth in that locality is a more fruitful cause of sterility than the obstruction in the cervix.

Sub-serous fibroids that cause no perceptible change in the menstrual flow even though they may be fairly large are rarely a cause of sterility. In fact it is so common an occurrence to find a small fibroma on the peritoneal surface of the uterus during labor. When performing a hysterectomy or at a postmortum that little attention is paid to it. On the other hand interstitial and sub-mucous growths prevent impregnation in quite a percentage of cases probably the result of the accompanying disease of the endometrium. These growths, are usually multiple and vary widely in size and density. Some writers believe that sterility is the cause of fibroids; but a large majority believe that tumors are the cause of sterility. According to the older writers as Marion Sims, Winckel, Schroeder, Gusserow, Courtney, Simson and Spenser Wells, sterility is present in about one marriage out of every eight, while in women with fibroids, sterility is found

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

in one out of every three. From these observations, it appears that a woman with a fibroid is about 3-8-as liable to become pregnant as a woman who has no fibroid.

During pregnancy myomata, especially of the interstitial variety undergoes changes similar to those in the uterus itself. They usually increase rapidly in size which is due to an increase in the tumor itself; at times in part to œdema. After delivery the growth is apt to undergo involution with the uterus; but seldom reaches as small a size as it was before the pregnancy. In rare instances, it will markedly diminish in size so that a few months after delivery it will be very difficult to find.

Abortion is quite apt to take place during the early months of pregnancy when the uterus is the seat of fibroids, and when this occurs, there are two great dangers. The first and most frequent is hemorrhage especially if the placenta has been implanted on the fibroid. This is particularly great when the tumor is large as uterine contractions are apt to be weak. The other less frequent; but very serious danger is gangrene of the fibroid. During the past year I have seen two cases of this kind, and here no time should be lost for the complication is most serious. Hysterectomy should be performed as soon as the diagnosis has been positively made. There are a number of very rare complications; as absolute obstruction of the exit of the products of conception, retained secundines, abscess of the tumor, explosion of the tumor with hemorrhage, etc., which must be met according to the indications in the given case.

After the first three or four months of gestation have been passed, pregnancy is very apt to go on to full term or at least until the child is viable, even when the growth is multiple and very large. About two years ago, I saw a case of this kind with the late Dr. S. S. Graber. The whole pelvis and lower portion of the abdominal cavity was filled with fibroid tumors, and the child was on top of the mass. In spite, of this the child was carried to term, and she was delivered of a strong healthy child by Cæsarian section. Hysterectomy was performed on this woman.

In many instances it is remarkable how women with large fibroids, some of them in the lower portion of the uterus and cervix, will carry a child to the full term and be delivered normally or with comparative ease by means of forceps. As the uterus develops, the tumor is quite apt to be drawn out of the pelvis so that during labor, the child's head is forced past the growth, and in some instances, uterine contractions during labor seems to still more draw the tumor out of the pelvis. In other instances a pedunculated or even one with a broad base, located low down in the cervix is so forced down that it can be removed and labor go on without further complications.

In delivery at full term with interstitial or sub-mucous fibroids there are a number of dangers. In nearly every instance the uterine contractions are weaker than normal and in some instances nearly absent, frequently necessitating mechanical interference. There is always great danger of postpartum hemorrhage that in a few rare instances will require hysterectomy; at times, the uterine wall has been so weakened that rupture of the uterus takes place. In rare instances a tumor is so located at the fundus that it follows down the child or placenta and produces inversion of the uterus which is a most serious complication, requiring prompt action to save the life of the mother. Gangrene of the growth, following delivery calls for immediate hysterectomy, especially if the growth is interstitial and located in the upper portion of the organ.

In the treatment of fibroids complicating pregnancy, it is rarely, if ever, good practice to advise induction of premature labor, and if abortion occurs spontaneously during the early months, treat the case according to the indications and if labor goes to full term the cases that during the early stages of pregnancy, promise serious labor frequently terminate easily. On the other hand, if labor is established and you are evidently going to have a very serious delivery through the natural passages, Cæsarean section should be immediately resorted to and in most instances hysterectomy should follow. This method may seem radical; but in the long run, it is much safer for the mother and child. The induction of abortion during the early stages of pregnancy with the idea that it is less dangerous to the mother, is a mistake. During pregnancy it is rarely good practice to perform myomectomy through the abdominal route, for a large percentage of cases abort within two weeks.

The following histories forcibly illustrate two classes of cases.

Mrs. H., age 29 years, para 3. Menstruated last, July 22, 1910, I saw her and advised against induction of abortion. At the time it was thought that she would very likely require Cæsarian section and so sent her to the Woman's Hospital where April 29, which was exactly full term. she had a powerless labor and I was obliged to deliver her with high forceps operation. The tumor had risen well out of the pelvis, the cervix dilated easily; but the pains were weak. Delivery was accomplished with very little force and there was no more than normal hemorrhage after delivery. Convalescence was absolutely normal. Two months later, the tumor had very markedly diminished in size.

Nov. 26, 1912, I was called by the family physician to see Mrs. S., 26 years of age. Married only a few months and was pregnant for the first time. Menstruated last, Sept. 7, 1912. For several hours, she had had severe labor pains. On examination, the pelvis was found filled with a

hard uterine fibroid. For a long time, she had severe constipation, and for the past few months, it had been necessary for her to take powerful cathartics to obtain any evacuation from the bowels. She was immediately sent to a sanitarium and panhysterectomy performed only one ovary was removed. The specimen that I show you was obtained. You notice that the whole cervix and lower portion of the uterus is occupied by a large fibroid that filled the pelvis and about a ten weeks' old foetus and secundies occupy the upper part of the uterine cavity.

The patient made an uneventful recovery.

Discussion.

DR. WILLIS E. FORD, Utica: It seems to me in the discussion of a subject, such as fibroid tumors, complicating pregnancy, the question arises whether the woman can be delivered or not. If these tumors are discovered early enough so that a Porro operation can be done in the third or fourth month of pregnancy, and it can be done with safety, it should be performed. My own belief has changed a good deal within three or four years, for the reason I have had six cases of large fibroids in women, quite advanced in years who were delivered practically normally with a living child, and in three cases, there was disappearance practically of the tumors afterwards. I am inclined, therefore, to let these cases alone more than I used to. I have opened the abdomen and turned out the uterus with the fibroids in it, but I shall not do it again except that it is a subserous fibroid in the uterus, situated low down so as to block the birth canal. Last week, I delivered a woman, forty-two years of age, who had multiple fibroids in her first labor, one of which was situated under the pubic bone, and had to be replaced several times for seven or eight years. She would not have an operation. She became pregnant at the fourth month and urged me to produce a miscarriage. She had four or five large fibroids. I kept her at bay for the first month or two, and I delivered her the other day all right.

A multiple fibroid will give you a dreadful hemorrhage at the time and you must be prepared for it. No man has a right to deliver such a woman in a private house, unless he has proper assistants. A simple intramural fibroid, where the tumor is up to the umbilicus before pregnancy, does not seem to me to militate against normal pregnancy, and in those cases, I have seen less hemorrhage than in the multiple fibroids, where the growth was a large one, and I have a great deal more confidence in the fact that such a woman can be delivered with care. I recall one case where the child is now fourteen years of age in which that occurred. Before pregnancy the abdomen was full up to the umbilicus, and after thirteen years, I called the woman up for examination and found a fibroid in the posterior wall not larger than an egg. I have a

number of such cases, and as I have previously remarked, my opinion has changed a good deal, and I will not under any circumstances produce miscarriage, and I let every woman go who has a normal pelvis, unless the fibroid is situated low down and blocks the birth canal.

DR. WALDO (closing the discussion): I had to read my paper very rapidly, so possibly several points were overlooked. The two cases reported illustrate the two points which I believe are rather cardinal in the paper. One woman suffers from large fibroids apparently obstructing the whole pelvis, and yet the tumors may do very little or no harm to the patient during delivery, and such a patient should be allowed to go on. In another case, it may be necessary to do hysterectomy or any other kind of operation to afford relief. An operation like this should not in my belief be performed unless the patient is actually in labor. I am thoroughly convinced and so stated that the production of abortion is much more dangerous in these cases, due to the fact you are apt to have gangrene of the fibroid or portions of the material are apt to be left behind. The production of abortion is much more dangerous than leaving the growth in there, allowing pregnancy to go on, and then perform Cesarean section if you have to and follow it, if necessary, as it would be in most cases, with a hysterectomy at the same sitting. The results are very good under these circumstances.

THE EARLY DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.

By ROYALE HAMILTON FOWLER, M.D.,

BROOKLYN-NEW YORK.

AT a meeting of the obstetric section of the American Medical Association, held in 1896, Dr. James F. Baldwin reported five cases of ectopic gestation in which the diagnosis was made before rupture had occurred. No one present had made the diagnosis prior to rupture and had operated. Dr. Price, of Philadelphia who took part in the discussion stated that he had made the diagnosis in one case, but had not operated before rupture. The writer believes from a study of this condition that an early diagnosis can be made before final rupture and collapse have taken place in a large number of cases. According to Huggins, the diagnosis should be made in 80 per cent. of cases. It must be admitted that important symptoms exist in a large proportion of cases upon which reliance may be placed for early diagnosis; that these early symptoms have been lightly considered both by patient and physician. The family physician can not always be blamed for the late diagnosis. The chief obstacle to the early detection of this

condition lies in the fact that the initial symptoms are not alarming and as a result the physician is not called sufficiently early. Nor can blame always be attached to the medical advisor for lack of observation for there are cases in which there are no early symptoms. These patients may consider themselves perfectly well and in six hours may be desperately ill. Unfortunately, however, a large number still come to the operator who have suffered for some time from symptoms which should lead the experienced observer to suspect ectopic gestation. They have been ignored until the classic picture of internal hemorrhage and collapse have supervened.

It is the purpose of this paper to present the inaugural symptoms of eleven recent cases of ectopic gestation operated upon by the staff of the First Surgical Division, German Hospital, Brooklyn. In this series none were diagnosed before rupture, two were thought to be appendicitis and in one advanced case, the diagnosis of pelvic tumor was made.

The chief symptoms of value in the diagnosis before rupture are pain, disturbance of menstrual function, suspicion of pregnancy and genital hemorrhage.

Pain, prior to rupture was a constant symptom in this series. It was mild, intermittent, irregular and progressed in severity. Early pain in tubal pregnancy is due to distention from hemorrhage and increased growth of the ovum. It may express itself first as a bearing down sensation of a dragging character and may be felt in the sacral region. This may be preceded by a feeling of lassitude. Pain is at first usually mild and does not prevent the patient from doing her house work. Pain is intermittent, of short duration, and passes away to return with greater severity. There may be an interval of hours or days. Between the attacks there is usually complete relief. Later, pain is increased by exertion. It is frequently stated that pain is brought on by work such as sweeping and scrubbing and that the patient was forced to lie down for a few moments. This slight feeling of faintness is common. Prior to rupture pain is well localized, to the right or the left as the case may be. Pain invariably occurred before hemorrhage showed itself at the vagina.

There is no morbid condition in which an exact menstrual history is of greater importance than in ectopic gestation. It is difficult to elicit the facts because of the lack of careful observation of this function in a certain class of patients. At times deceit is practiced. The patient's own observations are of the greatest importance. Difficulties in early diagnosis are at once apparent when we consider that no attention is drawn to the menstrual function and no significance is attached to the occurrence of slight irregular hemorrhage from the vagina. One of the most important early signs is thus allowed to go without the consideration which is due it. Almost with-

out exception in all cases in which pregnancy was not suspected the external hemorrhage was considered a retarded menstruation. In this series menstruation had been previously regular except in one case. In two cases menstruation had occurred four weeks previously, in one five weeks previously, in two seven weeks previously, and in one three months previously. If the menstrual flow does not occur after four or five weeks, when it has been previously regular, the physician should suspect pregnancy in the absence of any more plausible explanation. It is during these weeks and prior to the sixth that early pain commences. At this time, the patient should be under close observation. Rupture rarely occurs before the sixth week. If the physician has opportunity to study his case carefully an early diagnosis can be frequently made. Pregnancy is rarely suspected unless the patient has actually missed a period and menstruation has been previously regular. Sensations of pregnancy, nausea, and fullness of the breasts are rarely present before the sixth week. The diagnosis of the existence of pregnancy must at this time necessarily remain obscure. It is frequently masked early in ectopic gestation by the occurrence of a flow from the vagina often so near the time for the occurrence of menstruation that the hemorrhage is simply regarded as a retarded flow. A flow occurring near the time when menstruation is due has no significance to the woman who is occasionally irregular.

In general, there is nothing characteristic in the hemorrhage which shows itself at the vagina. The blood may be clotted or fluid, dark or bright. It is due to the separation of the amniotic sac within the tube and to the separation of the decidua within the uterus. In the individual case, the hemorrhage may present some differences from the menstrual flow. Continuous, profuse hemorrhage is rare at the outset of ectopic gestation. This may be of value in the differentiation from a uterine abortion or retarded menstruation. A "sickening feeling" or a feeling of faintness is often present at the onset of hemorrhage in extra uterine pregnancy. The hemorrhage is usually slight at the onset and intermittent. This fact, even though the hemorrhage occurs at the time when menstruation is due, should arouse suspicion in a woman, who usually flows profusely at the onset of menstruation. Instead of the clots which may have usually been present at the onset of the menstrual flow, there is merely a bright spot upon the pad. This may occur once or repeatedly with hours or days interval. Observation of amount, color, and consistency of the hemorrhage are of value only when accurately noted by the patient in so far as they follow or deviate from her own particular law. In this series vaginal hemorrhage occurred in five cases before rupture. It was described as a slight intermittent spotting in four, as profuse in one. Pain precedes hemorrhage and may be

relieved by it. Early in the disease external hemorrhage is not so constant a danger signal as is pain. It is present in less than one half the cases prior to rupture. In this series the intermittent character, the slight amount and the bright color have proved significant.

During pelvic examination of a patient suspected of having an unruptured ectopic gestation, the greatest care should be exercised. The writer recalls a case in which rough manipulation caused the patient to go into a state of collapse. Delay in securing permission to operate resulted fatally from hemorrhage. The signs of an unruptured gravid tube are those of hydrosalpinx. Absence of a history of symptoms pointing to previous pelvic inflammation is a point in favor of the gravid tube. Its presence does not exclude it, however. These cases fall into two groups. First, those cases of ectopic pregnancy which occur in women with an otherwise normal pelvis. Second, those cases which occur in women who have added pathologic lesions in the pelvis. In the first group, we have to consider pain, menstrual disturbance and hemorrhage which are the result of pregnancy per se. In the second group, we have to consider the symptoms which result from the previously existing or co-existing pelvic lesion. The early symptoms of ectopic pregnancy will be masked in that group which having suffered from pain, dysmenorrhea and metrorrhagia know no freedom from these symptoms which result from pre-existing pelvic lesions. The early diagnosis of extra uterine pregnancy engrafted upon a pelvic lesion which gives rise to symptoms is rarely possible. The early history is usually identical. In the case of a pelvic abscess or an acute exacerbation in a chronically thickened tube tenderness is more pronounced upon vaginal examination, there is usually a rise in temperature. In the absence of fever, marked tenderness and a history of previous pelvic inflammation differentiation between hydrosalpinx, pyosalpinx and unruptured gravid tube is rarely possible. The writer recently saw in consultation with Dr. Arthur Holzmann a lady who was thought to have an unruptured ectopic pregnancy. The history was suggestive in that she had not menstruated in six weeks and denied previous attacks of pain. There was no sign of spotting or vaginal hemorrhage. When the writer saw her with the doctor there was no fever and she seemed to be suffering from severe, continuous, low, right-sided abdominal pain. Examination showed an exquisitely tender, distended tube. The character of the pain and marked tenderness prevented me from concurring in Dr. Holzmann's diagnosis. Pain appeared to be too severe and continuous for an unruptured ectopic. Lack of signs of internal hemorrhage would not permit a diagnosis of ruptured ectopic to be made. This patient was admitted to the German Hospital for observation

and the following morning posterior colpotomy performed. Several ounces of pus were liberated from the cul-de-sac. She has remained free from pain and refuses radical operation.

UTERINE FIBROIDS.*

By WILLIAM HENRY COE, M.D.,
AUBURN.

IT was only about one hundred years ago that the nature of fibroid tumors of the uterus was fully elucidated. The exhaustive knowledge now possessed about them is a striking illustration of the rapid progress of present day learning. The procedures of to-day in the surgical management of these tumors have been rapidly perfected. It was only twenty years ago that many of these cases were considered inoperable. But methods were found for controlling each principal vessel. Then came the method of bisection, later the method of transverse section of the cervix as a preliminary feature of the operation in very difficult cases; until, at present, there is hardly a myomatous uterus which can not be removed.

The Cause of Uterine Fibroids is still in doubt. Bandler believes, 1, that they are due to cells displaced during the foetal development of the two ducts of Muller into the genital tract, and to failure of trophic control over the uterus by the ovaries. Ott, 2, advances the idea that anteflexion of the uterus invites their development by interfering with the circulation and by causing venous engorgement. He advises medical and surgical measures to cure anteflexion, when present; and advocates pregnancy as a thing to be sought in such cases. The manner of their growth, he claims, is from the muscular fibers of the arteries caused by the blood vessels at the cervix being compressed anteriorly and stretched posteriorly, causing a narrowing of the lumen. This produces congestion—then fibroses—and myoma.

This theory appeals to me as a causative factor in so far as it may be considered a source of irritation. On the other hand, we know that submucous myomas develop almost exclusively in women who have born children, 3. Here pregnancy is not a cure, but more or less a cause, the sterile endometrium never having been chafed or irritated by any potent cause, while the pregnant uterus has had many and various opportunities for irritation during its eventful life.

The blood supply of these tumors is, of course, derived from within the uterine muscle. The main arteries of the uterus penetrate the anterior and posterior walls and lie between the outer and middle thirds. The peripheral branches of these nourish the myometrium, and there is little

* Read before the Medical Society of the County of Cayuga, February 9, 1912.

if any visible blood supply in center of tumor. The amount of this supply varies in the different specimens, and probably explains the slow or rapid growth of the tumor according as its blood supply be generous or stinted: and also explains the cause of degenerative changes when the blood supply becomes altered or diminished.

Deaver and Pfeiffer, 4, found about 10 per cent. of their operation cases presenting degeneration in a marked degree. This does not mean 10 per cent. of all fibroid cases; but rather that this series of cases which were bad enough to require operation possessed 10 per cent. of degenerative changes.

Regarding the connection between Myoma and Internal Disease, there seems to be still some indefinite discussion. The literature for some years has frequently alluded to their intimate relation with cardiac degeneration. Their influence on degenerative changes in the heart and circulation has been sufficiently well accepted to cause them to be considered as dangerous to life. However, there are some active opponents to this argument as McGlenn, 5, after a study of 113 post mortem records of women dying with uterine myomata. His conclusions were that the sclerotic heart lesions occurring in most of these cases were part of a general condition, and bore no relation to the fibroid.

There is some other literature of late citing observations on this subject on series of cases: but no important conclusions were drawn.

There is considerable argument in literature at present regarding the influence of the fibroid on sterility. That the growth may so distort the canal and prevent conception: or that the appendages may become adherent in a large per cent. of myoma cases and do likewise, may be easily apparent, but there seems to be no degree of certainty that the myoma per se is a direct cause. On the other hand, Martin, 6, thinks that the presence of myoma favors conception just the same as it delays the menopause by the reaction on the part of the adnexa. In his experience, he places the responsibility of the sterility in large part to the husband. He may have had a disease years before resulting in an obstructive epididymitis causing his sterility. Yet the fact remains that sterility and fibroids are closely associated. The years of life of these tumors are those of the active sexual life. It is doubtful if they originate either before or after this period; and probably cease to grow with its cessation. provided there are no complications of secondary changes.

The submucous fibroids are the type most likely to cause sterility—not from themselves perhaps, but because of the congestion of the inner lining of the uterus caused by their pressure. The result is a hypertrophic endometritis preventing nourishment and growth of the ovum.

In their influence upon childbirth, we may say that the subserous variety do little harm unless

they are located in the cervix, where they may prevent delivery by the natural route. It is the situation and size of this type of tumor, which decides if it will be troublesome. It is not always easy to decide if the fibroid will cause mechanical obstruction to labor: because these tumors which are planted low down become lifted up during the progressive enlargement of the uterus so that by the time that labor has set in little or no obstruction is met with.

With the interstitial type of tumor another danger ensues—that of hemorrhage. This type may lie dormant for a long time in a sterile uterus. If pregnancy begins physiological hyperemia begins. With it the fibroid grows. After labor, normal involution ensues. The fibroid may diminish very markedly; but this shrinkage is not in same proportion to its growth during pregnancy leaving usually the fibroid larger after pregnancy than before. If this growth impinges on the endometrium sufficient to prevent closure of blood vessels, there result some serious hemorrhages.

As example of this, I would cite the following case:

Mrs. A., age 27, married: Came into my office complaining of constant bleeding from the uterus, extending over a period of about a year. Nothing had stopped the flow. Her health had always been good previous to this, although she had recognized the presence of a bunch in her abdomen. A child was born to her about a year before without particular trouble. After this the flow never ceased. At menstrual periods, it became very profuse. The child died a few days after birth from hemorrhages from its mucous membranes, and it raised the question of the possibility of haemophilia in the mother. Examination showed presence of a fibroid tumor of the uterus; and the woman to be profoundly anæmic. I told her that she needed an operation; but that she was not in good condition to bear it; and advised a careful preparation. To this she consented. She gained ten pounds in weight under treatment; but bleeding continued, in spite of uterine styptics. The second monthly partly undid what had been gained. Hysterectomy was at once performed and fibroid was found to be of the interstitial variety. One ovary contained four smaller fibroid masses, and the other being buried in a mass of adhesions, it was also sacrificed. Round ligaments were fastened into the stump so that a firm floor resulted. Recovery was rapid and uneventful. Her health is better now than it has ever been before.

Of the submucous type, the most troublesome symptom is hemorrhage. The fibroid is covered with mucosa and as it grows the cavity of the uterus lengthens and widens. It may grow with a broad base or with a pedicle. If with the latter, it may reach varying lengths even to permit an extrusion of the growth by contractions of the uterus.

As an example of the former, I would cite the following:

CASE II: About three weeks ago, I received a call by telephone to catch the next train; and to come prepared to operate on a case of uterine hemorrhage. I found a woman of 44 years of age, with a history of two years of moderate uterine bleeding. She had two children, the youngest eight years of age. Examination showed the uterus slightly enlarged, os widely open and several small growths presenting high up to the examining finger. On operation these were found to be small fibroids. The uterine cavity was dilated, and there was a hypertrophic endometritis. Fibroids were trimmed out with sharp pointed scissors and uterus was thoroughly curetted and painted with Tincture of Iodine. Recovery was rapid.

The other most prominent symptom calling for surgical interference is pressure. The sub-serous variety most frequently causes this trouble. It grows with a base which is either broad or pedicled; and becomes dangerous according to its location for doing damage from pressure. The pain and distress from pressure and weight of the growth may become increasingly apparent. If the sacral nerves are pressed upon, there will be pain running down the thighs, If the bladder, there may be pain, dribbling of urine; if the rectum, there may be discomfort and rectal troubles.

As example, I cite the following:



CASE I.—Hysterectomy for constant bleeding. Shows uterus and interstitial fibroid, also ovary and 4 small fibroids.

CASE III: Miss W., age 44, had noticed for six months a large mass in her abdomen. Her physical condition was poor. She complained of a general sense of oppression and discomfort. Her complexion was dark and thick. Abdominal palpation showed several large masses, completely filling abdomen as high as the umbilicus. Internal examination in the knee chest position showed pelvis to be completely filled with a hard mass which was rigid and immovable.

On operation, the incision required reached an inch above umbilicus. A few slight adhesions were broken up; and after some manipulation one corner of the mass was delivered from the wound, and by drawing same sideways it was displaced from its bed, and out of the abdomen. It consisted of three large lobes united in the center, one filling pelvis, one the right iliac fossa



CASE III.—Multiple fibroid growing outside uterus, filling pelvis and lower half of abdomen.

and the other the left iliac fossa. The back of tumor was smooth conforming to the back wall of abdomen with a groove where it lay astride the backbone. It was attached to the uterus by a short thick pedicle. As uterus and appendages were in good condition, they were left. The pedicle was secured by a wedge incision and this was closed by mattress sutures and edges united by whipping over and over with small catgut. She left the table in good condition with pulse of 80 and left hospital on fifteenth day after operation and is now in good health.

When the pressure and chafing results in localized peritonitis, the tumor becomes adherent to these intimate parts. It may be the abdominal walls, the omentum; or the intestines, or the bladders. If the pedicle is small, and the blood sup-

ply scanty, and adhesions dense, the blood supply may become increased by growth of blood vessels inward through these adhesions until perhaps the larger proportion of blood supply may come through this source. This condition may become intensified, the pedicle shrunken, or entirely severed resulting in the life coming principally or all from this other source. They are then called parasitic. This curious change is very gradual. The omentum most frequently takes on this service. Its blood vessels have inordinate faculty of dilating to meet unusual calls which may be made upon them. The omentum is the guardian over the abdominal organs: and here it plays both the role of protection and preservation. It protects in more or less degree the intestines from adhesions of this invading parasite and sacrifices itself to the good of more important structures.

If you ask why we remove the myomatous growth, we answer; because it is a dangerous tenant; because it may undergo malignant changes; because it may undergo changes of necrotic, of liquefactive, or of necrotic nature, owing to disturbances of its circulation; because of its power to cause hemorrhage, and lastly, because of trouble caused by pressure on near by organs.

The history of the operative treatment of uterine fibroids is one of the most brilliant chapters in gynæcology. Gusserow's mortality in 1878 was 36.2 per cent.; and has dropped to 3.8 per cent. in Doderlein's 388 cases of the last six years. Pelham's 8, mortality was 5.4 per cent. in 164 laparotomies, and 0.5 per cent. in 180 vaginal hysterectomies for myoma. Cullen and Kelly place their operative mortality at less than one per cent. and claim that the reasons are, the patient coming for operation before serious symptoms developed, and more largely also to improved methods.

Regarding the influence of the Roentgen-Ray, Schindler 9, reports continued and repeated success with this method of treatment. He claims that complicated myomas are transformed into harmless small tumors, and with the menopause which the treatment induces, the cure is completed. He claims that the method is entirely harmless. But Spaeth 10, reports a case of a woman of 47, having a large benign myoma with excessive menstrual hemorrhage. Seven exposures of the Roentgen-Ray were given, and the menstrual hemorrhage became still more abundant and patient died about six weeks after commencing treatment. The conclusions drawn from this case were that the patient should not be allowed to become so debilitated as to be unable to bear careful treatment, and again that the Ray should be applied with greatest intensity to the ovaries in order to induce atrophy as soon as possible so preventing menstrual congestion with each successive monthly.

Regarding the choice of myomectomy or hys-

terectomy, statistics show that the former possesses the greater mortality because of the possibility of hemorrhage, sepsis and the other complications. Yet the Mayos show a series, 11, of 157 unselected and consecutive abdominal myomectomies with only one death. They give the credit to Ochsner's method of tying sutures just tight enough to coapt the tissues and stop hemorrhage and not tight enough to bleach them. The result of the excessive tension being to invite infection. Myomectomy is preferable, 1st, when the growths are few in number, and the body of the uterus is not much involved; 2nd, where the growths are easily accessible through the vagina or cervix; third, when the patient is under forty years of age and has two or less children; fourth, when the tubes and ovaries are free from complicating conditions. 12.

In conclusion, I may say that the radical surgical treatment of myomata of the uterus has now reached a dignified position among the major surgical operations. The technique has become so well established as to be almost beyond the stage of argument. The greater amount of present day discussion is upon smaller issues; for example. Enucleation vs. Hysterectomy: Influence of Myomas on Sterility or Conception: Discussions on Etiology, or on Blood Supply: or Report of Cases. The conclusions we draw are that our knowledge of myomas of the uterus is approaching very nearly a stage of reasonable perfection.

POSSIBLE HELPS IN THE CONTROL OF THE BLACK AND WHITE PLAGUES.*

By JOSEPH ROBY, M.D.,
ROCHESTER.

IN starting, let me throw myself on the clemency of the Court, and let me remind you of the statement of Huxley. "If the street sweeper has kept the crosswalk clean, he has done his duty and earned his penny, even if he cannot point the way to Highgate." And, in any criticism of these suggestions, I would remind you, that the paper is entitled "Possible Helps," and not absolute "cures."

The fight against tuberculosis has not been peculiarly successful, and we are practically doing nothing with gonorrhœa and syphilis. Now, I hold, that if a scheme prevents one person in 10 afflicted with these diseases from infecting others, it has done, at least, something. One hesitates to add anything to the literature on the subject of tuberculosis. It is conceivable that it might be controlled in two ways. First: By increasing

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 16, 1912.

the general resistance of individuals or their specific resistance, as in the case of smallpox and vaccination. Second: By preventing the infection.

This scheme has only to do with the second method. The major premise is, that the great majority of people are infected in the home or shop, and that this infection comes from the bacilli in the sputum of more-or-less advanced cases; it making no particular difference, so far as the present question is concerned, whether they get into the body via the respiratory or intestinal tract. The minor premise is, that if these people were taking the cure out of doors in the early stages, either they would not cough up any bacilli; or if they did, that there would be little chance of their infecting any one. Therefore, the solution of the problem from this aspect consists in an early diagnosis and equally early sitting-out cure.

What I wish to urge is, that we should all institute the treatment *before* we make the diagnosis. In other words, most of us have been taught to diagnose tuberculosis by the physical signs in the lungs and the bacilli in the sputum. These are both liable to occur, so far as the average physician is concerned, only late in the disease.

I have arranged a brief number of headings for teaching purposes, which I will not read owing to the shortness of the time. One may occasionally go wrong, but I believe that most cases of tuberculosis can be diagnosed by using three instruments of precision—the watch, thermometer and scales, together with the von Pirquet test. I realize all the limitations of the von Pirquet test; that many who have not an active tuberculosis will react; and that some few who have it will fail to react. I would have printed in red ink across the face of all Health Departments' reports on the sputum: "Failure to find bacilli does not mean that your patient has not got tuberculosis. We urge and offer a von Pirquet test. If your patient has lost weight; has a rapid pulse, 80-90 or above, and an afternoon fever of 99 1-2 or more, consider it tuberculosis, and immediately institute the 'sitting-out cure'."

THE SUPREME BEING AND THE TRINITIES IN TUBERCULOSIS.

THE CAUSE.

The Tubercle Bacillus—The Supreme and Only Cause.

PREDISPOSING CAUSES.

- 1.—Individual susceptibility.
- 2.—Special diseases—Measles Pertussis, Grippe, Pneumonia, Colds.
- 3.—Bad environment, bad air, bad food, overwork.

SUBJECTIVE SYMPTOMS.

- 1.—General malaise and fatigue.
- 2.—Cough.
- 3.—Bloody sputum (hemorrhage) really objective but often not seen by doctor.

OBJECTIVE SYMPTOMS.

- 1.—Rapid pulse.
- 2.—Afternoon fever.
- 3.—Loss of weight.

PHYSICAL SIGNS.

- 1.—The tuberculin test.
- 2.—The pulmonary physical signs.
- 3.—Tubercle bacillus in the sputum.

THE TUBERCULIN TESTS.

- 1.—The cutaneous tests.
- 2.—The eye test.
- 3.—The subcutaneous test.

THE PULMONARY PHYSICAL SIGNS.

- 1.—Localized rales—especially in coughing.
- 2.—Localized dullness.
- 3.—Localized high pitched expiration.

THE TUBERCLE BACILLUS IN THE SPUTUM.

- 1.—Stain with carbol fuchsin.
- 2.—Decolorize with acid and alcohol.
- 3.—Counter stain with methylene blue.

THE CURE.

- 1.—Absolute rest.
- 2.—Lying, sitting or sleeping out of doors.
- 3.—Liberal feeding.

THE CRITERIA OF IMPROVEMENT.

- 1.—Normal temperature.
- 2.—Normal pulse.
- 3.—A gain in weight.

CRITERIA OF CURE.

- 1.—The signs of improvement keep up.
- 2.—Absence of symptoms.
- 3.—Absence of signs, except of healed lesions.

THE PREVENTION BY KILLING THE BACILLUS.

- 1.—Disinfect the sputum.
- 2.—Disinfect the apartments occupied by careless or ignorant consumptives.
- 3.—Boil all milk not from tuberculin tested cattle.

THE PREVENTION BY INCREASING THE IMMUNITY

- 1.—The Out-of-door Life day and night.
- 2.—Good, clean food.
- 3.—Avoidance of the other infectious diseases.

OF SUPREME IMPORTANCE.

That Everyone with Any Active Tuberculosis in Any Stage Should be "Chasing the Cure" (Rest—Out of Doors), Thereby Aiding Oneself and Not Infecting Others.

The scheme to aid in the control of gonorrhea and syphilis is this: That these diseases should be declared by the State and local health officers to be communicable and dangerous to the public health, and therefore, quarantinable. When a physician is consulted by a patient, male, or female, it often happens that the patient is both able and willing to tell the source of infection, provided his or her name does not appear in the transaction. The physician then reports in a confidential manner to the Health Officer the name and address of the offending person. This person, male or female, is seen by a member of the Health Department staff, and is informed of the report, and told that they must be under the surveillance of the Health Department. If the person denies having the disease, he or she must submit to a bacteriological or serum diagnosis. If this proves positive, he or she must, in the case of syphilis, receive a dose of Salvarsan followed by Mercury and subsequent doses of Salvarsan. If the person is able to pay for it, this may be done by his own physician with a representative of the Health Department present; or the municipality must be prepared to give the injection. And, in the case of gonorrhea, hospital accommodations must be provided. The threat of a strict quarantine will be sufficient, I imagine, to make these people amenable to reason. Salvarsan, by making these people, almost immediately, much less infectious, if not absolutely cured, makes possible the control of syphilis. With gonorrhea, unfortunately, it is far different.

There is one further class of people that might be rounded up in this way; and those are the people who only come in to a doctor's office once or twice, and then go to some one else. In other words, do not pass a law compelling the reporting of these diseases, but make it voluntary and then *do* something.

The possibilities of this scheme would seem to be considerable; for it would soon become known and those people who have these diseases would hesitate to pass them on. Personally, the simple reporting of a disease, unless something is done about it, seems perfectly useless; except for one purpose, to get an idea as to how frequent the disease may be. In order to get an idea of this, it is suggested that the doctors be requested to report once a month the number of new cases of those diseases that have come under their observation. Only in this way could one get an idea of how the scheme was working.

We realize that this plan will not stop venereal diseases; but since it first suggested itself, there has been many a chance where it would have worked to perfection. It is conceivable that one woman in a community with a lot of young men might give rise to hundreds of cases. By this scheme, after a few infections she ought to feel the firm hand of the law.

CORRESPONDENCE.

To the Editor of the New York State Journal of Medicine.

Dear Doctor:

I desire to call to the attention of your readers the enclosed General Order No. 263, Department of Public Charities, which confers upon the entire medical profession the right to attend the Clinics, Medical, and Surgical, to be held in all the hospitals of the Department.

ORDER.

That on and after the first of October, 1912, all clinics held in the amphitheatres and operating rooms of the hospitals of the Department of Public Charities shall be open to duly licensed graduates in medicine and to the students in all regularly organized medical schools and colleges, and further, be it

That tickets shall be issued by the Secretary of the Department of Public Charities for distribution by the Secretaries of the several medical schools and societies of the City of Greater New York which will entitle the registered holders thereof to admission to these said clinics.

MICHAEL J. DRUMMOND,
Commissioner.

Commissioner Drummond by thus inviting the members of the profession to participate in the educational advantages afforded by these Clinics establishes a new standard which marks a radical departure from, and a distinct advance over, the custom of the past when graduates in medicine were admitted to Clinics in the public hospitals as a matter of courtesy only.

The signal value to the general public of the experience gained and the practical knowledge acquired by this movement, which virtually amounts to a complete course in post graduate instruction, cannot be over-estimated.

For the convenience of those desiring to attend the Clinics, the cards of admission have been placed at the Academy of Medicine, 17 West 43rd Street, Manhattan, and the Medical Society of the County of Kings, 1313 Bedford Avenue, Brooklyn, at which institutions they may be obtained on personal application by all regularly registered physicians.

Attention is also called to the fact that several of the hospitals of the Department maintain services in all of the specialties and opportunity is thereby afforded for instruction in each one of them.

Commissioner Drummond has recently issued an order to the Superintendents of the several hospitals, directing that each day before 9:30 A. M., an explicit list of Clinics, both medical and surgical, to be held on that day shall be telephoned to the Academy of Medicine and the Kings County Medical Society, in order that those physicians who wish to attend the Clinics may have timely information as to their precise nature, and select such as are deemed of special educational value to them.

I am also enclosing a calendar of the Clinics to be held during the month of December which I trust may be published for the information of your readers.

A schedule of the Clinics to be held during the present season will shortly be issued in pamphlet form, and copies thereof will be sent to Medical Journals, Schools, and Societies.

Very respectfully yours,

RICHARD KALISH, M.D.,
Director of Clinics,
Department of Public Charities.

CLINICS, DEPARTMENT OF PUBLIC CHARITIES.

CALENDAR, JANUARY, 1913.

Mondays.

City Hospital	Surgery	Dr. Dawbarn	2.30	P.M.
Neurological Hospital	Neurology	Dr. McPhee	2.00	"
Cumberland Street Hospital (Brooklyn)	Surgery	Dr. Pallister	2.30	"
	Oro-l Surgery	Dr. Shea	4.30	"
	Rhinology & Laryngology	Dr. Stewart	4.00	"
Kings County Hospital (Brooklyn)	Gynecology	Dr. McNaughton	9.00	A.M.

Tuesdays.

City Hospital	Surgery	Dr. Collins	10.30	A.M.
	Ophthalmology	Dr. Gilfillan	2.00	P.M.
	Dermatology	Dr. Bronson	2.30	"
N. Y. City's Children's Hospitals & Schools, Randall's Island	Orthopedics	Dr. Ogilvy	10.00	A.M.
Cumberland Street Hospital (Brooklyn)	Gynecology	Dr. Burnham	1.00	P.M.
	Ophthalmology & Otolaryngology	Dr. Warner	3.00	"
	Surgery	Dr. Ritch	2.30	"
Kings County Hospital (Brooklyn)	Obstetrics	Dr. Commiskey	10.00	A.M.
	Surgery	Dr. Bristow	2.00	P.M.
	Genitourinary Surgery	Dr. Morton	} 2.00	"
	Genitourinary Surgery	Dr. Fraser		
Coney Island Hospital	Surgery	Dr. Fisk	} 10.30	A.M.
	Surgery	Dr. Bogart		
	Medicine	Dr. Hall		
	Medicine	Dr. Nash	3.30	P.M.

Wednesdays.

City Hospital	Surgery	Dr. Dawbarn	9.00	A.M.
	Genitourinary Surgery	Dr. Fuller	2.00	P.M.
	Obstetrics	Dr. Dorman	2.30	"
Metropolitan Hospital	Surgery	Dr. Harrington	2.30	"
	Surgery	Dr. Ostrom	2.30	"
	Jan. 8 Dermatology	Dr. Dearborn	2.30	"
	" " Rhinology & Laryngology	Dr. Foster	2.30	"
	Jan. 15 Dermatology	Dr. Dearborn	2.30	"
	" " Genitourinary Surgery	Dr. Carlton	2.30	"
	" 22 Medicine	Dr. Rankin	2.30	"
	" " Medicine	Dr. Hathaway	2.30	"
	" " Rhinology	Dr. Foster	2.30	"
	" " Neurology	Dr. Howard	2.30	"
Neurological Hospital	Neurology	Dr. Maloney	11.00	A.M.
Kings County Hospital (Brooklyn)	Dermatology	Dr. Winfield	1.00	P.M.
	Orthopedics	Dr. Truslow	9.00	A.M.
	Orthopedics	Dr. Napier	2.00	P.M.
Coney Island Hospital	Pediatrics	Drs. Beck, McQuillan, Pendleton & Van Wart	3.30	"

Thursdays.

City Hospital	Medicine	Dr. Evans	9.00	A.M.
	Medicine	Dr. Brooks	2.30	P.M.
	Gynecology	Dr. Stearns	2.00	"
Cumberland Street Hospital (Brooklyn)	Gynecology	Dr. Burnham	1.00	"
	Surgery	Dr. Ritch	2.30	"
	Rhinology & Laryngology	Dr. Stewart	4.00	"
Kings County Hospital (Brooklyn)	Obstetrics	Dr. Commiskey	10.00	A.M.
	Obstetrics	Dr. Judd	10.00	"
	Otolaryngology	Dr. Alderton	1.00	P.M.
	Surgery	Dr. Bristow	2.00	"
	Pediatrics	Dr. Parrish	4.00	"
Coney Island Hospital	Gynecology	Drs. McEvitt, Mills, Mayne & Rankin	10.30	A.M.
	Rhinology & Laryngology	Dr. Tucker	1.30	P.M.
	Surgery	Drs. Murphy & Lack	3.00	"

Fridays.

City Hospital	Rhinology & Laryngology	Dr. Dougherty	2.30	P.M.
Neurological Hospital	Neurology	Dr. Abrahamson	9.00	A.M.
Cumberland Street Hospital (Brooklyn)	Surgery	Dr. Pallister	2.30	P.M.
	Ophthalmology & Otolaryngology	Dr. Warren	3.00	"
	Oral Surgery	Dr. Shea	4.30	"
Kings County Hospital (Brooklyn)	Gynecology	Dr. McNaughton	9.00	A.M.

Saturdays.

City Hospital	Pathology Demonstrations and Lantern Exhibitions	Dr. Larkin	2.00	P.M.
Neurological Hospital	Neurology	Dr. Jelliffe	2.00	P.M.
Kings County Hospital (Brooklyn)	Obstetrics	Dr. Commiskey	10.00	A.M.
	Surgery	Dr. Bristow	2.00	P.M.
	Medicine	Dr. Stivers	3.30	"

December 3, 1912.

To the Editor:

The visit by a party of German physicians to the recent International Congress on Hygiene and Demography has proven that a well-managed travel-study party of physicians can make a trip through a foreign country in a far more pleasant and profitable manner, and at less expense, than can be done by traveling alone. Clinics can be arranged in advance, lectures prepared and visits made to the best hospitals and health resorts, with the assurance of a hearty welcome from the leading medical men of the localities visited. For those unable to speak the languages of the countries on the Continent, this disadvantage is reduced to a minimum and the benefits of the trip correspondingly increased by travel with such a party.

The coming International Medical Congress, London, August 6-12, 1913, gives a splendid opportunity for organizing an American Tour of this sort, and plans are now ready for a Physicians' Travel-Study Tour, leaving New York July 3d, for the most important capitals and health resorts on the European Continent: Paris, Munich, Carlsbad-Marienbad, Dresden, Berlin, Naheim, Wiesbaden, Cologne, Brussels, the Hague, Amsterdam, etc., ending the week of the Congress in London.

The plan of this tour has been seen and endorsed by Drs. A. Jacobi, T. C. Janeway, C. G. Kerley, O. G. T. Kiliani, L. R. Williams, Wisner R. Townsend, and others. Physicians interested in such a trip should write for further and more detailed information to

Yours truly,

RICHARD KOVACS, M.D.,
New York City.

To the Editor of the State Journal of Medicine.

Your very able and extremely appropriate Editorial in the December issue of the State Journal of Medicine is a source of great satisfaction to me.

I am glad that a man can be found who is willing and has the courage to question the findings of some of the investigators of the Medical profession and call a halt.

The latest and perhaps the most astounding utterance from one who evidently has a mistaken notion of his function is that of the Commissioner of Education in a letter dated, December 10th, 1912, and published in the New York Times. The letter starts: "As head of the State department that licenses physicians, I have been asked: 'Should Doctors charge their patients a fee for consultation with other specialists, and to what extent should they charge?'"

Why any person should ask such a question of the Commissioner of Education and why he should go to the extent he did in answering it are beyond my comprehension, for except as a private citizen the subject is one with which the State Commissioner of Education has nothing to do.

Whether a physician charges a fee for consultation with other physicians and specialists, is a matter for the physician and the patient to settle themselves, and as far as I can see is nobody else's business.

Following this the Commissioner takes up the subject of fee splitting, which likewise is a subject with which as Commissioner of Education, he has nothing to do.

One can only judge from his own experience and from that standpoint, I must give it as my opinion that fee splitting is not common in New York City. In my over ten years' experience as a general practitioner and for the past twenty years, as a specialist in this city, during which time I have been seen both sides of the situation, I recall being asked but once to split a fee, and that in an operation on a relative of the physician who brought the patient to me.

Even if it were common, I cannot see that it concerns anybody but the persons immediately interested.

In rare instances only would the patient be affected, for one of the important questions the patient asks before operation is what the fee will be, and the surgeon either makes the fee fit the patient's knowledge of what the fee should be (for the size of fees for operations is a common topic of conversation among the laity nowadays) or the patient finds another surgeon, or goes to the dispensary or hospital and has the operation done for nothing.

That family physicians and specialists conspire to operate on patients unnecessarily for the sole purpose of getting a fee to divide, is, I believe absolutely untrue. The creation of a mind which thinks evil because it is itself evil.

Of course, if Medical Societies choose to make rules refusing admission to membership to physicians who divide fees, that is a purely personal matter which no one will object to and which will debar very few. For the Commissioner of Education to suggest that such practice constitutes a felony is too absurd to merit serious consideration, for the courts may properly be looked to, to ensure one's constitutional rights, even if the legislature could be induced to pass a bill making such an act a felony.

The whole tenor of the Commissioner's letter is so openly insulting to a great profession that one is amazed to read the name signed to it. The functions of the Department of Education are legally defined by the statutes, and regulating the ethics of the Medical profession is not one of them.

One might with justice request the Commissioner of Education to restrain his ardor and confine his energies within his legally prescribed limits.

Very truly yours,

FRANK VAN FLEET, M.D.

THE COLLEGE OF MEDICINE OF SYRACUSE UNIVERSITY.

The corner stone of the new dispensary building for the College of Medicine of Syracuse University was laid at 3:30 P. M., December 14th, with appropriate exercises. Before a large audience which included the faculty and students of the College of Medicine and the trustees and staff of the Syracuse Free Dispensary, the corner stone was laid by Chancellor James R. Day. In it was deposited by the dean of the college important records, including the latest catalogues of the University and the College of Medicine, the report of the Syracuse Free Dispensary, the latest reports on medical education in the state and in the nation, the records of original work done by the members of the faculty during the last year and reprints of articles representing recent research work done by the leading authorities in the United States.

After the laying of the corner stone the audience adjourned to the College of Medicine. Chancellor Day introduced as the first speaker, William S. Thayer, M.D., LL.D., Professor of Clinical Medicine in Johns Hopkins Medical School, who gave the most illuminating and interesting address on the University Dispensary that has ever been heard. The Chancellor next introduced the Honorable Augustus S. Downing, First Assistant Commissioner of Education of the State of New York, whose address was confined to the discussion of the problem of medical education, in the course of which he emphasized the necessity for medical colleges to have control of hospitals and dispensaries. The last speaker of the day was the Honorable Alan C. Fobes, who spoke in behalf of the Syracuse Free Dispensary Association, an association which has conducted the most significant charity in the city for nearly twenty-five years. Upon the completion of the building, this association, which is an incorporated body, will conduct the dispensary, giving to the university, in exchange for rent, the privilege of nominating the medical and surgical staff and of controlling the service of the dispensary. This combi-

nation of a charitable association with the university is conceded to be of the greatest importance both to the city and to the students of the university.

The contract calls for the completion of the building in August. It will then be thoroughly equipped and will be ready for dedication about the first of October, at which time the College of Medicine will open.

The Medical Society of the State of New York

COMMITTEE ON PRIZE ESSAYS.

The Committee in charge of the Merritt H. Cash, \$100.00, and Lucien Howe, \$100.00, Prize Fund of the Medical Society of the State of New York, offer the following suggestive, but not arbitrary, subjects upon which the competitors may write their essays:

1. Diagnosis and treatment of syphilis of the central nervous system.
2. The present status of serum therapy.
3. Latest research relative to cancer.
4. The order and sequence of vascular and cardiac disease.
5. The function of the State in limiting the increase of imbeciles and degenerates.
6. Surgery in functional and organic disorders of the stomach.

The essays must be in the hands of the Chairman of the Committee, Dr. Albert VanderVeer, 28 Eagle Street, Albany, N. Y., not later than April 1, 1913.

A. VANDERVEER, M.D., Chairman, Albany,
JOHN F. W. WHITBECK, M.D., Rochester,
EDWARD D. FISCHER, M.D., New York City.

APPOINTMENT.

The President, Dr. Whitbeck has appointed Dr. Joshua M. Van Cott of Brooklyn a member of the National Legislative Conference, which will be held in Chicago, February 24th and 25th, 1913.

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

REPORT OF COMMITTEE ON DISPENSARY ABUSE, 1912.

Mr. President, Ladies and Gentlemen:

You, Mr. President, in your inaugural report called attention to a number of matters concerning the economics of our profession, one of which was that of dispensary abuse. Among physicians in this city, there is an impression that widespread abuse of medical charities exists, and it was with the idea of verifying or disproving this belief that this committee was organized.

Frequent meetings of the committee and of its sub-committees have been held. Although at first called "The Committee of Fifteen" it has enjoyed a full quota of members during but a brief portion of its existence. There have been eight resignations and at present the committee is composed of twelve members, as follows:

Dr. WALTER BROOKS BROUNER
Dr. J. BAYARD CLARKE
Dr. J. RIDDLE GOFFE
Dr. EVERETT W. GOULD

Dr. E. ELIOT HARRIS
Dr. SAMUEL J. KOPETZKY
Dr. EGBERT LE FEVRE
Dr. NICHOL C. MANDL
Dr. WENDELL C. PHILLIPS
Dr. RICHARD WEIL
Dr. WILLIAM S. THOMAS, Chairman.

Your committee was instructed to investigate not only hospital and dispensary abuse, but also the problem of the commercializing of professional services to beneficiary societies and lodges. The sum of four hundred and fifty dollars was appropriated to pay for the services of a person who would make a detailed investigation of applicants for medical charity, and the committee was empowered to employ a paid secretary.

Soon after organization your committee found that if it was to exist for only one year, and if it were to be limited to its stated appropriation it would have to confine its activities largely to the investigation of dispensary abuse. The committee was therefore obliged to content itself with referring the subject of lodge and contract practice to a sub-committee, composed of Drs. Kopetzky, Gould and Mandl. Their report, as approved by the full committee, is appended hereto and will be read this evening by Dr. Kopetzky, chairman of the sub-committee.

One of the folders notifying members of a meeting of the County Society last spring contained an invitation for any of them who were aware of any case of dispensary abuse to forward information of the same to the chairman of this committee. The notice read as follows: "In accordance with the recommendation of Dr. Kerley in his Inaugural Address, a committee of fifteen was appointed to investigate the subject of dispensary abuse in New York County. The members of the Society are invited to co-operate with the committee by furnishing the names and addresses of individuals, who, to their personal knowledge, have unworthily received dispensary treatment. Such information will not be made public without the personal consent of the donor."

Only two responses to this invitation were received.

What proportion of patients who apply for free treatment at the dispensaries of this city are really able to pay for the services of a private physician? Your committee felt that this was one of the most important questions with which they had to deal. It is a matter over which there has been much conjecture and dispute but so far as is known by them, no accurate or comprehensive attempt has been made to ascertain the facts. In 1911, 665,000 new patients were treated in the dispensaries of this borough. It would be manifestly impossible to make a complete investigation of each of this vast number of cases, but your committee decided that by inquiring closely into the circumstances of one thousand applicants for medical charity in the dispensaries, they might thus get a very fair index to conditions among the whole number. To this end a sub-committee consisting of Drs. Walter Brooks Brouner, J. Bayard Clarke, and C. F. A. Locke was appointed to prosecute such an investigation. After conferring with the Charity Organization Society, they employed an expert social worker, Anne Moore, Ph.D., who selected consecutive groups of applicants from 50 to 100 each, without discrimination from the most recent names on the books of thirteen representative dispensaries.

Your committee considers her report an able and important work and recommends that a copy of it, included with the rest of this report, be placed in the hands of each member of this society.

She found a woeful lack of uniformity in the method of keeping records in the various institutions. Until this lack is remedied it will be extremely difficult to co-ordinate their work.

A surprisingly large number of applicants live out-of-town. In the case of one dispensary, out of 157 persons applying for treatment, 57 lived out of the city.

REPORT ON THE INVESTIGATION OF ONE THOUSAND DISPENSARY CASES.

(Sept. 15, 1912 to Nov. 1, 1912.)

Institutions Visited.—Thirteen dispensaries were visited and from the register of patients were taken fifty to one hundred names and addresses of the most recent applicants for treatment residing in Manhattan.

The institutions visited were:

	<i>Number of Names and Addresses Utilized.</i>
New York Hospital dispensary.....	100
University and Bellevue	100
St. Bartholomew's	50
St. Luke's	100
Post Graduate	75
Manhattan Eye and Ear	100
North Western	50
Presbyterian	75
North Eastern	75
Demilt	75
New York Dispensary	50
Vanderbilt	100
Good Samaritan	50

These selected names and addresses of patients visited are those remaining after eliminating out-of-town cases. The proportion of these non-resident applicants as approximately estimated is twenty-five per cent. of the whole number.

These numbers vary slightly in the final register of one thousand names, because of certain practical difficulties in securing exactly the desired number of consecutive cases from records kept after widely varying systems. For names evidently duplicated or representing different members of the same family were substituted others perhaps from a different dispensary.

It would seem an excellent thing if in the various institutions some uniform method of keeping records should be adopted, for until this is done, it will be extremely difficult to co-ordinate the work of the different institutions.

In one dispensary, names and addresses of applicants are recorded in a book under date in order of application. The book used is not a properly spaced and arranged register. There is no case number, and the writing is so illegible that the person who did it was not in all cases able to decipher it. Of the first 157 cases applying on and after August 30th, fifty-seven (57) were from outside Manhattan.

At another dispensary an excellent card system is in vogue, but the cards are not kept in a central filing place. Patients are sent to different departments before names and addresses are taken. The cards are then filed separately for each doctor. It is necessary to look through a large number of catalogues, in order to obtain names of consecutive applicants and there is no way of telling which ones have precedence on a given day. A large number were from outside Manhattan, approximately the same proportion as in the case above cited.

Another dispensary has an excellent card system of numbered cards filed in a central cabinet. Very few cases were from outside Manhattan. The nurse in charge states that an investigation is made of patients applying there and that very few are able to pay a doctor.

Another dispensary has a card system similar to the case above cited, but the cards are easier of access as they are filed in a central place. The nurse in charge feels that very few patients applying there are able to pay.

At another Dispensary, names and addresses are legibly written in a properly arranged register under date

in order of application. Thirty-one cases out of 131 were from outside Manhattan.

At another Dispensary, names and addresses are entered in a book, in order of application and each is numbered. Of 160 names taken, 60 were from outside Manhattan. At this hospital, there is no definite charge of ten cents, as at most of the other dispensaries. Patients are asked to put what they can afford in a box and the sum of twenty-five or fifty cents is suggested. This suggestion sometimes works hardship to the poor to whom it appears in the light of a demand, while to the comparatively well-to-do it offers an opportunity for evasion. A policeman, for example, who could have afforded more, dropped in ten cents. This hospital makes a charge of \$5.00 for removing adenoids, which, in some cases, appears prohibitive.

At another Dispensary patients are sent to different departments and their names and addresses are entered in the separate books kept by the examining physicians, in the order of application. The writing is in many cases practically illegible. This dispensary draws from a poor district. The physician in charge feels that very few are able to pay for treatment.

At another Dispensary, names and addresses are written on separate slips at the desk and are afterwards entered alphabetically in the register. The nurse in charge feels that very few are able to pay. During the last two years, she has observed a difference in the clientele directly due to the high cost of living. Persons who before would not have thought of going to a dispensary have lately been forced into it.

At another Dispensary, the names are entered in a book in order of application. 2 out of 77 were outside Manhattan.

At another Dispensary patients are sent, to different departments and the examining physician enters their names in a book. In many cases, the writing is indecipherable.

At another Dispensary, names are entered under date in a book in order of application.

At another Dispensary, it was very difficult to secure consecutive names. A numbered card system is in vogue, but the cards used each day are dated or numbered before the day's work begins. Many often remain unused and the next day a gap then appears in the series. The numbers are therefore valueless to determine consecutive cases. The various clinics are separated in the files. Out of 173 cases, 42 were from outside Manhattan.

At another Dispensary patients are sent to different departments where their names are taken, but not their addresses. An attempt was made to obtain fifty names and addresses as the patients entered, but great difficulty attended it. They are foreigners who have difficulty with the language and difficulty in understanding what is desired. They often seem unable to say exactly where they live, or they think it will do as well to give the place where they work or an address that they frequent. The doctor in charge thought it would be impossible to locate more than half of them and that those located would not be truthful regarding income. Many lived outside Manhattan. It was impossible to ascertain the exact proportion.

Investigation.—An effort was made to see each patient in his home, in order to obtain an impression of his general circumstances and the sanitary conditions in which he lives. The one thousand addresses obtained from the dispensaries were arranged according to districts and each one was visited. The patient, his relatives, or if these could not be found, his neighbors or the janitors were questioned regarding his occupation and income, the occupation and income of other wage earners in the family, the number of persons in the family, the rent, and the circumstances under which free treatment was sought.

Of the one thousand cases studied, two hundred and

fifty-five (255) were not located. This large proportion of not found cases may be attributed to several causes.

(1) Many names and addresses, carelessly given and incorrectly recorded or transcribed. At least 87, or 34 per cent. fall in this category; and probably the number is much larger.

(2) October, when this investigation was made, is a "moving" month and people of the tenements often move without leaving behind a trace of their whereabouts.

(3) In crowded districts boarders come and go without troubling to establish their identity.

(4) General suspicion of strangers sometimes leads to denial of identity. In one case, the janitor denied all knowledge of the person desired, saying that she personally knew everybody in the house and that no such person had been there during her regime. Afterwards in talking to a neighbor, it was found that the janitor herself was the person desired.

With unlimited time, it might be possible to locate some of these people but the cases most interesting and worthy of study would be those impossible to locate, where some means has been taken to conceal identity.

(5) Addresses are sometimes given incorrectly by patients with intent to deceive. It is possible that this occurred in 32 cases or 12 1-2 per cent. of the 255. In two cases, names and addresses of well-to-do persons had been used without their knowledge. In twenty cases, the street numbers do not exist. In ten cases, business addresses were given where the patient could not have been employed. Undoubtedly some of these people are well-to-do, seeking to evade payment. But it is probable that the reason is not always so obvious. It sometimes happens, for example, that a needy person living in New Jersey will give a New York address when attending a New York clinic, believing that otherwise free treatment will be refused. It also happens that for personal or professional reasons, it is necessary to conceal the fact that one is forced to seek free treatment. It is probable that the proportion of unworthy patients is not greater among the not found cases than among the found.

Of the remaining seven hundred and forty-five (745) cases, six hundred and seventy-two (672) or 90 per cent. seem worthy of free treatment. Seventy-three or approximately 10 per cent. seem able to pay for medical treatment under ordinary circumstances, but the margin over and above fixed expenditures seems in most cases so slight that in illness demanding continued treatment or the services of a specialist, to pay a physician would mean for them serious deprivation or the incurring of debt from which afterwards it would be difficult to escape. In fact, in almost every one of these cases, there seemed a very reasonable doubt as to how the case should be regarded. Many people said they were ready and willing to pay a small fee, but their experience had proven the danger and unwisdom of putting themselves in the hands of a doctor of whose skill they were not sure. Many go to the only place they know where they are reasonably sure of correct diagnosis and scientific treatment.

The criticism has frequently been made that many family budgets have no provision for medical attendance. A study of the foregoing table is suggestive. The average poor family can not afford sickness and what it entails. It can barely afford the necessities that sustain life when wage earners are working to capacity. If one of them falls sick and loses time, it means usually that the rest of the family goes hungry. Hunger and improper housing bring in their train further illness. In one such family visited recently, there have been four consecutive cases of typhoid fever.

The occupations of wage earners, as given in the table, indicate the class of society which frequents dispensaries. The majority of patients are of the laboring class. There are a few conductors, inspectors, policemen, firemen, and insurance agents. There are no

teachers from the public schools, no librarians, no artists, no writers or social workers, nor any of the small salaried class, who, though they have difficulty in making ends meet, must keep up a certain standard of dress and living in order to hold a position and who frequently do without medical assistance, because they can not afford to pay for it without running into debt. For these, it would seem that some institution should be established whose charges would be between those of the high-priced physician and those of the dispensaries, to which they could in self-respect go and be sure of scientific care and treatment, without incurring debt, or feeling that they are receiving charity or taking the place of some one in worse straits than themselves.

Mr. Homer Folks made an investigation into the cost of living of unattached women employed by the State Charities Aid Association in the year 1906-1907. The following table shows the result of that investigation:

Board and lodging, \$7 per week	\$365.00
Vacation tickets and extras, board included.....	20.00
Carfares	40.00
300 Lunches at 20 cents apiece.....	60.00
Washing, \$1 per week	52.00
Lectures, concerts, theatres, etc.	12.00
Reading matter, including one daily and Sunday Sunday paper and one magazine	6.88
Doctor, Oculist and Dentist	25.00
Umbrella	2.00
Repairs	3.00
Clothing	121.70
Total	\$707.58

This is an average of \$59.00 a month. Librarians begin at \$30.00, and rest at \$40.00. It is only after long service that they reach \$60.00. Very many of the class referred to are trying to live on \$50.00 a month. This does not permit of vacation extras, lectures, reading matter, or medical attendance. To curtail expenditures for food, lodging and clothing means at once decreasing their social efficiency and the risk of jeopardizing their positions.

Dr. Robert Coit Chapin, in his book on "The Standard of Living in New York City," says that "the families having from \$900 to \$1,000 a year are able in general to get food enough to keep body and soul together, and clothing and shelter enough to meet the most urgent demands of decency." Dr. Chapin is referring to a typical American family of five members, father, mother and three children under working age. This sum allows over and above necessary expenditures for food, rent and clothing, \$12 or \$13 a year for furniture, dishes, utensils; \$25 for insurance or savings; \$8 to \$10 for extra education, books, newspapers, stamps, stationary; and \$15 to \$20 to cover the charges of doctor, dentist or oculist.

A study of the following summary of the financial condition of 739 families included in the foregoing table, whose membership is known, indicates how few dispensary patients reach this standard.

I.					
<i>Unattached Individuals.</i>					
Income: \$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.	
Number: 94 W	16 W	1 W	4 W	1 W	
			3 N		
II.					
<i>Families Consisting of 2 Members.</i>					
Income: \$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.	
Number: 44 W	36 W	4 W	..	1 W	
	1 N	1 N	5 N	1 N	
III.					
<i>Families Consisting of 3 Members.</i>					
Income: \$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.	
Number: 31 W	38 W	19 W	6 W	3 W	
			3 N	16 N	

IV.

Families Consisting of 4 Members.

Income:	\$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.
Number:	22 W	43 W	15 W	4 W 1 N	3 W 2 N

V.

Families Consisting of 5 Members.

Income:	\$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.
Number:	31 W	43 W	13 W	6 W 3 N	.. 10 N

VI.

Families Consisting of 6 Members.

Income:	\$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.
Number:	12 W	23 W	16 W	2 W	4 W 9 W

VII.

Families Consisting of 7 Members.

Income:	\$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.
Number:	7 W	21 W	8 W	10 W	5 W 2 N

VIII.

Families Consisting of 8 Members.

Income:	\$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.
Number:	5 W	13 W	13 W	5 W	3 W 11 N

IX.

Families Consisting of 9 Members.

Income:	\$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.
Number:	6 W	14 W	3 W	4 W	1 W 2 N

X.

Families Consisting of 9 or More Members.

Income:	\$0.-\$10	\$10-\$15	\$15-\$20	\$20-\$25	Above \$25.
Number:	2 W	1 W	5 W	2 W	5 W 1 N

These figures represent the average, not the minimum family income, except in cases where wage earners have been out of work for a long time their income is placed at earning capacity. The majority of dispensary patients are engaged in unskilled trades or in seasonable trades where the wages are uncertain. The amount earned in a year is far below the apparent income. Bricklayers, for example, who earn \$5.00 a day can not work in very cold weather or on rainy days. Their income is nearer \$700 than \$1,500. A laborer at \$2.00 a day may lose four months in the winter. A factory hand in a seasonable trade may have two slack seasons during the year when he earns nothing.

The very poor who can least afford it are subject to exploitation by unskilled or unscrupulous physicians. Money which they can ill afford to pay is taken from them without return. A slight ailment is often aggravated by neglect or maltreatment when a skilled and responsible physician in the beginning might relieve the trouble in a few minutes. Time is lost and often the job with it. They should be protected from the ignorant practitioner for it is usually into his hands they fall when, feeling they can afford to pay a dollar or two for treatment, they eschew the dispensary and seek a neighborhood doctor.

The various associations which send their agents through the tenements inviting the poor to pay ten cents a week regularly with the promise of free treatment in case of sickness are worthy of investigation. The visiting doctor is apt to make up on prescriptions, "special medicines," and bandages what he does not charge for services. In two cases investigated the patients became worse under association treatment and were finally obliged to go to a dispensary. One had appendicitis and died as a result of delay.

The following cases are typical:

CASE 521. Father, a butcher with his own shop. His wife and a clerk in attendance. The condition seemed prosperous. The wife refused information regarding

the family income. Her first excuse was that she knew nothing about the business and would not like to guess at the profits in her husband's absence; her second, that if she told the dispensary might refuse treatment.

CASE 596: A machine agent, 28 years old; wife and four children in Europe. In July, he had a sunstroke. He was making a good living and was ready to send for his family. Absolute rest for a protracted period would cure him. Free beds are few in the hospitals, he was told at one that he could not be kept longer than three weeks. Money and friends are gone and he is losing hope and courage.

CASE 355: Father making \$40.00 a week; wife and one child. They pay \$30.00 rent and keep a servant. For months a private physician attended the child for whooping cough. As the child did not improve, she was taken to the dispensary for diagnosis. The family does not need nor want charity.

CASE 376: Father a chauffeur making \$25.00 a week, but out of work all summer. He has a wife, his old mother and two children to support. Last winter, he developed ear trouble as a result of exposure. A specialist charged \$30.00 without giving relief. The child has adenoids and enlarged tonsils. A specialist asks \$50.00 for the necessary operation. The man can not afford so much but is willing to pay a dispensary \$5.00.

CASE 836: Housewife; husband and one child; income about \$14.00. Complains that at the dispensary she sees different doctors and that each one diagnoses her case differently, so that she is not permanently helped.

CASE 903: Porter, single; \$10.00 a week. Sick and away from work five days under care of a physician whom he paid \$1.00 a visit. As he could not afford further loss of time, he went to a Dispensary. The application of a poultice on his first visit cured him, and he was able to go to work the next day.

CASE 100: An old soldier of 68 years living on a pension of \$12 a month, out of which he pays \$7.00 a month rent. He does not grow stronger because at the dispensary he is allowed only one small bottle of medicine a week. This lasts only two days. As he cannot afford to buy more he is without medicine five days every week.

CASE 282: Family in desperate straits. Father a laborer at \$2.00 a day; wife and eight children. He has lost the position he held for 13 years and cannot find another. A daughter earning \$9.00 a week has lost her position and threatens suicide. A son who is an operator at \$6.00 to \$10.00 a week, was recently laid off. The only member of the family now at work is a boy earning \$4.00.

CASE 569: Father an operator; wife and one child; income \$10.00 to \$12.00. Wife a neurasthenic. Child can not go to dispensary, because the doctor wishes her to bring some one with her who can speak English. There is no one to go.

CASE 600: Housewife with husband and two children; family income about \$28.00. She has a bad leg with a chronic sore and needs the attendance of a specialist. Some years ago, she went to a private physician who failed to help her. At a clinic, she was helped. She, therefore, goes there now not wishing to repeat her former experience. She would be willing to go to a private physician once a week, if she were sure that one whom she could afford to pay would give her the attention she needs.

CASE 604: Woman with paralyzed arm; husband and four children living at home; family income about \$13.00. Last year, she went to a Hospital for an operation that cost \$29.40 and three times a week for ten weeks for electric massage, costing carfare 20 cents and treatment 50 cents. She can no longer afford this and is now going to a Dispensary.

CASE 663: Clerk with wife and one child; family

income \$19.00. He went to a neighborhood physician and was not properly treated. Later, he went to a dispensary and found that he was in danger of blood poisoning and the loss of his hand.

CASE 723: Father an engineer, out of work a year; now janitor of a Public Library; income, rent, and \$10.00 a week; wife and one child and dependent aunt. The wife has serious trouble with her eyes. A specialist charged \$100, but reduced his bill to \$35, when he found out the family circumstances. Her eyes got worse and as she could not face a large bill for extended treatment, she went to a dispensary. The doctor there has taken her as a private patient without charge. When the son developed eye trouble, she thought it might be the same as hers and sent him to the clinic she had confidence in. She was afraid of a cheap oculist.

CASE 55: Father a shipping clerk with wife and one child; family income about \$19.00. The mother who is well-bred did not return to the dispensary a second time because the doctor did not take the time to answer her questions and the nature of the operation that we thought was necessary on the boy's throat or whether or not it was a serious case.

CASE 512: Father a plumber; wife and one child. They seem comfortably off. The mother has her own doctor. He said there was nothing wrong with the baby. As it continued to cry, she took it to the dispensary and found that it had an abscess in its ear.

CASE 674: Janitress in a fine apartment building receiving rent and \$3.75 weekly; husband a laborer at \$2.00 a day; work irregular. Her leg was affected in some obscure way. She went to a physician's office. He charged \$1.00 and gave her advice. The next day she was in great pain. He came and when he found she was janitress, he did not enter the room, nor examine her, but charged \$2.00 for the visit. She has spent many weeks in different hospitals and has been under the care of many doctors, paying them \$1.00 to \$5.00 for tri-weekly visits extending over many months. Finally she was recommended to a "professor." He would not examine her until she had paid him \$50.00. She paid the fee. He took it but never returned. She has been operated upon many times. Now the wounds do not heal and the verdict is that the leg will probably have to be amputated. All of her savings are gone.

SUMMARY.

The study of 745 cases located out of 1,000 visited indicates:

1. That the general run of patients who visit dispensaries are worthy of free treatment.
2. That many of those able to pay are willing to pay provided they could be assured of skilled treatment.
3. That there is need to protect the poor who can afford only a small office fee from unskilled and unscrupulous physicians who take the fee without in return, giving needed relief, and from the exploitation of "professors" and other associations whose chief concern is the fee to be obtained from the credulous.
4. That there is need for the establishment of some hospital service and medical attendance where small salaried professional persons might receive adequate care without loss of self-respect or the feeling that they are asking charity.

The consideration of 225 cases not located, out of 1,000 visited, apparently indicates:

1. A similar proportion of patients worthy of free treatment.
2. Need for uniformity and care in the keeping of dispensary records.

Respectfully submitted,
ANNE MOORE, PH.D.

EARLY in the Committee's existence, it was determined to make a personal investigation of some of the representative dispensaries of the city, in order to ascertain their attitude in this matter, and to that end the co-

operation of the authorities of a number of them was secured, who permitted an investigation of existing conditions. In only one instance was permission to investigate refused.

Eleven of the larger dispensaries have been investigated personally by members of the Committee who have been present at one or more sessions of each dispensary either with the registrar or in the working rooms. The Committee's investigator, Miss Moore, also reports on dispensary conditions, as appears above.

In selecting representative dispensaries to be investigated, the Committee bore in mind the fact that dispensaries connected with the medical colleges were exempt from the restrictions of the state regulations to the extent that in the case of teaching institutions, where patients permit their diseases to be used as clinical material, no investigation of ability to pay is required.

The reports of these dispensary investigations will be in the keeping of the secretary of the society, and may be seen by members who are interested.

The results of the investigations of the dispensaries by members of the Committee showed the following conditions respecting their compliance with the regulations of the State Board of Charities governing dispensary administration.

I. POSTING THE LAW. The requirement that the law be posted in the dispensary is generally complied with, but not always in a conspicuous manner. We recommend that these notices be printed in several languages and conspicuously posted.

II. Registrar. The regulation governing registrars is as follows: "There shall be an officer to be known as 'The Registrar,' whose duties shall be to supervise the work of the dispensary, and either personally or by a competent deputy selected by him for that purpose, to make and preserve all records, receive all applicants, and see that all rules and regulations are enforced."

We find that all the dispensaries investigated are provided with registrars or deputies, as required.

III. Admission of applicants. The regulation governing the admission of applicants is as follows:

Sec. I. "It shall be the duty of the Registrar to examine all applicants to determine the question of their admission and the following rules shall guide his action:

(a) All emergency cases shall be admitted and receive prompt treatment and care.

(b) Every applicant who is, in the opinion of the registrar, poor and needy, shall be admitted.

(c) Patients who are received in dispensaries connected with medical colleges, and whose cases are selected for clinical instruction may be admitted without examination as to their ability to pay for the services of a physician.

(d) Every applicant, either personally, or by the parent or guardian of such applicant, whose personal appearance does not indicate that he is poor and needy shall be questioned by the Registrar as to his ability to pay for medical or surgical relief, advice or treatment, medicine or apparatus, or either, in whole or in part, and if the Registrar is still in doubt with regard thereto, the applicant shall be admitted to a first treatment on signing a card containing the "representation" of statement of the applicant, but the Registrar shall forthwith cause an investigation of his or her ability to pay either personally or by parent or guardian; the results of such investigation together with the representation card, shall be filed among the permanent records of the dispensary. Any such applicant who declines to sign the required "representation" or statement shall be refused admission.

Sec. 2. Such "representation" or statement shall be in the following form:

Card of Admission on "Representation" or
Statement of Patient.

Name Date.....
Dr.No. in family.....
NationalityAddress.....
Occupation, ManWoman.....
IncomeRent.....
This is my application to this Dispensary in
the year
I have been an applicant to no other Dispensary in the
year (or to the following Dispensaries:
.....)
The foregoing statement is in all respects true.
Signature of applicant.....
Admitted Refused

COMMENT: Inasmuch as this regulation leaves to the judgment of the registrar the admission or rejection of applicants, according to the personal appearance of the latter it is essential that the registrar or his deputy be persons of considerable ability and discretion and in sympathy with the spirit of the law. It many instances it was found that the registrar was incompetent, or unable properly to comply with those provisions. The work of Miss Moore, the paid investigator of the 1,000 applicants, has incidentally strengthened the opinion of your committee in this matter.

In order to correct this defect when existing in the administration of the dispensaries, your committee respectfully recommends the adoption of the following regulations:

I. That uniform records, preferably a card index system, be required in all institutions licensed by the State Board of Charities.

II. That said application card shall state the name, address, age, occupation, civil condition, personal income, and entire family income of the applicant who must sign his name thereto.

III. That each new applicant for free treatment be required to fill out such a blank before being assigned to any clinical department for treatment, emergency cases expected.

IV. Law fixing a penalty for false representation to be printed on back of patient's card. The State Board's regulation is as follows:

The Registrar shall issue to every applicant who is admitted for treatment, a pass card, on one side of which shall be printed the usual statement in regard to attendance upon the class to which he or she is assigned, and on the other side, the card shall be in the following form:

"Penalty for False representation.

Section 296, Chapter 55, Consolidated Laws.

"Any person who obtains medical or surgical treatment on false representation, from any dispensary licensed under the provisions of this act, shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than two dollars and not more than two hundred and fifty dollars."

(Imprisonment until fine is paid may be imposed. Criminal Code Pro., 718).

COMMENT: Your committee finds that in some instances the penalty is not printed on the back of the admission cards and they therefore recommend that this regulation be enforced and that the law be printed in more than one language.

IV. Enforcement of the law against false representation. One weakness of the medical charity law lies in the fact that there is no present adequate means of its enforcement. Your committee recommends that the State Board of Charities be provided with sufficient funds to enable them to cause the enforcement of Section 296, Chapter 55 of the Consolidated Laws which concerns the obtaining of medical charity under false representation.

V. Regarding Fees in Dispensary.

Your committee feels that the custom of charging for drugs, appliances and other incidentals to treatment, and not charging anything for treatment, places the burden of the charity of the dispensary exclusively on the medical profession, in those institutions where medical attendants are not paid salaries.

Your committee believes that charitable institutions should dispense charity to the extent of their financial ability, and no more; and that they should not make money for the purpose of extending their work. Therefore, we recommend that there be no charges made for drugs in the dispensaries. We believe that dispensaries should be maintained for the benefit of the poor only. In some institutions the committee find that patients are charged to the extent of their ability to pay. The committee recommends that such practice be discontinued by the dispensaries, posing as charitable institutions, and receiving benefactions as such from state or individual sources.

VI. Location of Patient's Homes in relation to the Dispensary.

Our investigation has disclosed the fact that, one of the most serious, and it would seem the most easily remedied, causes of dispensary abuse is the widespread custom of treating patients without regard to the location of residences in respect to the dispensary. Patients flock to the city from the suburbs and distant regions. Others, dwelling here, roam about the city from from one dispensary to another seeking various diagnoses, and trying to find treatment to their personal liking. The result is economic waste and detriment to the interest of the patient and of the medical profession alike. Nothing could be clearer than that the easiest way to reform this abuse would be through association of the dispensaries. They could unite in dividing the city into districts, and each institution could then refuse patients living outside its own sphere, referring them to the charitable institution of their own localities.

In many other respects needed reform in dispensary management could best be effected by an association of dispensary authorities. Your committee recommends that the society give its support to the Associated Out-Patient Clinics.

Your committee does not feel at liberty to publish specific instances of the abuse of dispensaries on the part of their authorities, because our investigations were necessarily confined to a few institutions. Unless all the city's sixty-four dispensaries had been investigated it would be manifestly unfair to do so.

Respectfully submitted,

WILLIAM S. THOMAS,

Chairman.

REPORT OF COMMITTEE OF FIFTEEN.

The sub-committee which undertook an investigation into the subject of Lodge Practice submits the following brief report:

In the first place it was very difficult to get any exact figures. The only source of information available to us was a mutual friend through whom we reached an official of the Federation of Jewish Orders, and we have every reason to believe the figures he gave us are correct and to represent the actual conditions regarding lodge practice among the Jewish elements of our population. Furthermore, they may be taken as a typical of similar conditions among the Italian, German, Hungarian, Bohemian and Swedish Christian Organizations.

The figures do not include industrial insurance companies nor commercial corporations who employ doctors; another form of contract practice.

In the State of New York, there are 2,000 Jewish lodges. There are, besides these and not included in this report, small independent benevolent societies which employ physicians under contract in each and every one of the smaller towns of the State.

Approximately one physician takes a contract with three lodges on an average in the Greater City of New York. There are thus employed about 500 physicians under contracts with Jewish lodges. No means of ascertaining the number of physicians in contract practice in the State were available.

The 500 physicians above referred to receive pay at the rate of from one to two dollars a year per member of the lodge from which they receive their contract. The average contract physician thus assumes the care of 500 or 600 members. In a certain number of contracts, the physician in addition must look after the wife and children of the members; the children numbering up to eight per member's family. Other lodges permit the physician an additional fee of one dollar per year for looking after the member's family.

The men engaged in this form of practice average from ten to fifteen house calls a day, spread all over the Greater City of New York, and at their offices they see from twenty to forty ambulatory cases.

Briefly stated, this is the condition prevailing in Greater New York among the Jewish orders, and when one takes into consideration the large number of Italian orders, the commercial houses, the construction corporations and the industrial insurance companies, it demonstrates that contract medical practice is engaged in by many more men than any of the medical societies have any definite knowledge of. The least number of these men engaged in this form of practice are members of the County Medical Society. They have no time for scientific work, no time for self-improvement, and are interested in nothing except to meet the demands of their contracts and make a sort of living. They cannot do good work for their employers, because they must contract to look after too great a number of persons at these small fees so as to make a living at that.

The custom of fee splitting, to which most of these men resort to make additional money, is in part the direct outgrowth of this form of contract practice. Averaging only from twenty-five to fifty cents a call, they thus gain a few dollars extra when they find that they can call a surgeon or other specialist of their own selection.

In the majority of instances, not being members of the organized societies, they are beyond reach of the societies' moral discipline. On the other hand, from personal interviews with some of the grand officers of these orders, we learn that the employers of these physicians are aware of the poor character of the services they receive and are apparently willing to meet the County Society, or any other regularly organized medical body, more than half way in an effort to effect mutual improvements. The question before us, therefore, becomes one of control first, and correction of abuses second.

Should the County Medical Society assume control of this form of Practice? Your Committee feels, that since this form of practice is so extensive and the abuses attending upon it so great, that the County Society should further investigate and study this form of practice. There is no way in which it can be abolished.

Respectfully submitted,

S. J. KOPETZKY,
Chairman.

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.

REGULAR MEETING, DECEMBER 10TH, 1912.

SCIENTIFIC SESSION.

"Modern Uses of Anæsthetics," Walter T. Diver, M.D., Troy.

"General Discussion on Magazine Articles."

OTSEGO COUNTY MEDICAL SOCIETY.

ANNUAL MEETING AT ONEONTA, DECEMBER 10TH, 1912.

The following officers were elected:

President—Willis S. Cooke, Otego.

Vice-President—Lewell T. Genung, Worcester.

Secretary—Marshall Latcher, Oneonta.

Treasurer—Frank L. Winsor, Laurens.

Delegate to State Society—Benjamin W. Stearns, Unadilla.

Alternate—Bennett W. Dewar, Cooperstown.

SCIENTIFIC SESSION.

Talk on "Conservation," by the President.

Quiz on acute phthisis, asthma, broncho-pneumonia, pneumonia, influenza and pleurisy.

Paracentesis of the Thorax, Arthur W. Cutler, M.D., Oneonta.

COUNTY OF ROCKLAND MEDICAL SOCIETY.

ANNUAL MEETING, DECEMBER 4TH, 1912, AT SPRING VALLEY.

The following officers were elected:

President—Sylvester Demarest, Suffern.

Vice-President—Eugene B. Laird, Haverstraw.

Secretary—Ralph DeBaun, Congers.

Treasurer—Arthur K. Doig, Nyack.

Censors—Gerrit F. Blauvelt, Nyack; Daniel J. Sheehan, Spring Valley; John Sengstacken, Stony Point; William R. Sitler, Suffern; Norman B. Bayley, Haverstraw.

Delegate to State Society—George A. Leitner, Piermont.

Alternate—Charles D. Kline, Nyack.

MEDICAL SOCIETY OF THE COUNTY OF CHAUTAUQUA.

ANNUAL MEETING, DECEMBER 10, 1912.

The following officers were elected:

President—Nelson G. Richmond, Fredonia.

First Vice-President—George F. Smith, Falconer.

Second Vice-President—Fred C. Rice, Ripley.

Secretary and Treasurer—J. William Morris, Jamestown.

Censor—Eva M. Scofield, Jamestown.

Delegate to State Society—Vernon M. Griswold, Fredonia.

Alternate—Henry S. Edmonds, Sinclairville.

SCIENTIFIC SESSION.

President's Address, "The Use of Obstetric Forceps," Henry A. Eastman, M.D., Jamestown.

"The Treatment of High Blood Pressure," Fred C. Rice, M.D., Ripley.

"Duodenal Ulcer," Charles E. Goodell, Jamestown.

THE SCHOHARIE COUNTY MEDICAL SOCIETY.

ANNUAL MEETING AT SCHOHARIE, DECEMBER 10, 1912.

The following officers were elected:

President—Lyman Driesbach, Middleburg.

Vice-President—Carolyn L. Olendorf, Cobleskill.

Secretary—Herbert L. Odell, Sharon Springs.

Treasurer—Le Roy Becker, Cobleskill.

Censor—Willard T. Rivenburgh, Middleburg.

Delegate to State Society—C. L. Olendorf, Cobleskill.

SCIENTIFIC SESSION.

"The Early Practice of Medicine in Schoharie County," Henry F. Kingsley, M.D., Schoharie.

"The Consideration of the Heart and Kidneys in Bright's Disease and Arterio Sclerosis," Lyman Driesbach, Middleburg.

"Discussion," by Drs. Christopher S. Best and Willard T. Rivenburgh.

In the report of special cases, the case of Heart

Block reported by Dr. C. S. Best, the case of Postpartum Eclampsia, reported by Dr. LeRoy Becker, and the case of Hydramnios reported by Dr. H. J. Wright awakened special interest.

ONONDAGA MEDICAL SOCIETY.

ANNUAL MEETING, DECEMBER 10TH, 1912.

The following officers were elected:

President—Edward B. Kaple, Elbridge.

Vice-President—I. Harris Levy, Syracuse.

Secretary—Henry B. Doust, Syracuse.

Treasurer—Allen Cone, Syracuse.

Censors—Albert S. Hotaling, John C. Shoudy, Edward J. Wynkoop, Nathan Jacobson, Aaron B. Miller, and George M. Price, all of Syracuse.

Delegates to the State Society—Albert E. Larkin and Albert S. Hotaling, of Syracuse.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

ANNUAL MEETING, DECEMBER 16TH, 1912.

The following officers were elected for the ensuing year:

President—J. F. Whitwell, Buffalo.

First Vice-President—John V. Woodruff, Buffalo.

Second Vice-President—Arthur W. Hurd, Buffalo.

Secretary—Franklin C. Gram, Buffalo.

Treasurer—Albert T. Lytle, Buffalo.

Chairman Board of Censors—John D. Bonnar, Buffalo.

Chairman Committee on Legislation—F. Park Lewis, Buffalo.

Chairman Committee on Public Health—Henry R. Hopkins, Buffalo.

Chairman Committee on Membership—Harry Mead, Buffalo.

Delegates to State Society—Thomas H. McKee, William H. Thornton, Charles A. Wall, George F. Cott, and Edward L. Frost.

Annual reports were submitted by the Treasurer, Chairman of the Committee on Public Health, and Chairman of the Board of Censors.

LEGISLATIVE NOTES.

The Committee on Legislation herewith presents the lists of members of the Senate and Assembly for the year 1913. Members of the Society can refer to this list at any time that it may seem advisable to write to their Assemblymen or Senators in regard to legislative matters and all are requested to look it over so that if among those represented there are any men known to them personally they can write them, if requested by the Committee on Legislation to assist or oppose any bills before the Legislature.

In the next issue of the Journal it is hoped to be able to print the Committees, which had not been appointed when this issue went to press.

SENATE.

M. H. Glynn, Lieut.-Gov. and President of the Senate, Albany. Home Post Office, 28 Willett, Albany.

1. Thomas H. O'Keefe, D., Oyster Bay.
2. Bernard M. Patten, D., 151 Elm, L. I. City.

BROOKLYN.

3. *Thomas H. Cullen, D., 256 President.
4. Henry P. Velte, D., 265 Hewes.
5. William J. Heffernan, D., 594 4th Avenue.
6. William B. Carswell, D., 121 St. Mark's Avenue.
7. Daniel J. Carroll, D., 135 N. 3d.
8. *James F. Duhamel, I. D., 202 Bay 28th.
9. *Felix J. Sanner, D., '58 Bremen.
10. Herman H. Torborg, D., 1043 Liberty Avenue.

MANHATTAN.

11. *Christopher D. Sullivan, D., 51 Chambers.
12. John C. Fitzgerald, D., 175 2d Avenue.
13. *James D. McClelland, D., 43 Barrow.
14. James A. Foley, D., 261 Broadway.
15. John J. Boylan, D., 402 W. 51st.
16. *Robert F. Wagner, D., 51 Chambers.
17. Walter R. Herrick, D., 115 Broadway.
18. *Henry W. Pollock, D., 541 W. 113th.
19. Henry Sallant, Pro., 113 W. 122d.
20. *James J. Frawley, D., 51 E. 96th.
21. *Stephen J. Stilwell, D., 3311 Olinville Avenue, Williamsbridge.
22. *Anthony J. Griffin, D., 891 Cauldwell Avenue.

STATE.

23. George A. Blauvelt, D., Monsey.
24. John F. Healy, D., New Rochelle.
25. John D. Stivers, R., Middletown.
26. *Franklin D. Roosevelt, D., Hyde Park.
27. Abraham J. Palmer, Pro. and R., Milton.
28. *Henry M. Sage, R., Menands.
29. John W. McKnight, D., Castleton.
30. George H. Whitney, R., Mechanicville.
31. *Loren H. White, D., Delanson.
32. *Seth G. Heacock, R., Ilion.
33. *James A. Emerson, R., Warrensburgh.
34. *Herbert P. Coats, R., Saranac Lake.
35. Elon R. Brown, R., Watertown.
36. William D. Peckham, D., Utica.
37. *Ralph W. Thomas, R., Hamilton.
38. *J. Henry Walters, R., Syracuse.
39. Clayton L. Wheeler, D., Hancock.
40. *Charles J. Hewitt, R., Locke.
41. *John F. Murtaugh, D., Elmira.
42. Thomas B. Wilson, R., Hall.
43. John Seeley, D., Woodhull.
44. *Thomas H. Bussey, R., Perry.
45. *George F. Argetsinger, R., Rochester.
46. *William L. Ormrod, R., Churchville.
47. George F. Thompson, R., Middleport.
48. John F. Malone, D., Buffalo.
49. *Samuel J. Ramsperger, D., Buffalo.
50. Gottfried H. Wende, D., Buffalo.
51. Frank N. Godfrey, R., Olean.

ASSEMBLY.

ALBANY.

1. *Harold J. Hinman, R., Albany.
2. *John G. Malone, R., Albany.
3. Wm. C. Baxter, R., Watervliet.

ALLEGANY.

*Ransom L. Richardson, R., Fillmore.

BROOME.

Mortimer B. Edwards, R., Lisle.

CATTARAUGUS.

Clare Willard, D., Allegany.

CAYUGA.

*Michael Grace, R., Weedsport.

CHAUTAUQUA.

1. Geo. W. Jude, Pro., Jamestown.
2. *John Leo Sullivan, R., Dunkirk

CHEMUNG.

*Robert P. Bush, D., Horseheads.

* Re-elected.

CHENANGO.

*Walter A. Shepardson, R., Norwich.

CLINTON.

*Charles J. Vert, R., Plattsburg.

COLUMBIA.

Alexander W. Haver, D., Germantown.

CORTLAND.

Niles F. Webb, R., Cortland.

DELAWARE.

John W. Telford, D., Margaretville.

DUTCHESS.

1. *Myron Smith, R., Millbrook.
2. John A. Kelly, D., Poughkeepsie.

ERIE.

1. George F. Small, D., Buffalo.
2. *Clinton T. Horton, R., Buffalo.
3. Albert F. Geyer, D., Buffalo.
4. *Edward D. Jackson, D., Buffalo.
5. *Richard F. Hearn, D., Buffalo.
6. *James M. Rozan, D., Buffalo.
7. Joseph V. Fitzgerald, D., Lancaster.
8. George Geoghan, D., Buffalo.
9. John Dorst, Jr., D., Akron.

ESSEX.

*Spencer G. Prime, 2nd. R., Upper Jay.

FRANKLIN.

*Alexander McDonald, R., St. Regis Falls.

FULTON AND HAMILTON.

James H. Wood, R., Gloversville.

GENESEE.

*Clarence Bryant, R., Le Roy.

GREENE.

*J. Lewis Patrie, D., Catskill.

HERKIMER.

E. Bert Pullman, D., Fulton Chain.

JEFFERSON.

1. *Henry E. Machold, R., Ellisburg.
2. *John G. Jones, R., Carthage.

KINGS.

1. John J. Kelly, D., 135 Pacific.
2. *William J. Gillen, D., 12 Vanderbilt Avenue.
3. Frank J. Taylor, D., 50 Van Dyke.
4. Harry W. Kornobis, D., 910 Bedford Avenue.
5. Vincent A. O'Connor, D., 698 Decatur.
6. Lester D. Volk, Pro., 140 1-2 Floyd.
7. *Daniel F. Farrell, D., 378 17th.
8. *John J. McKeon, D., 413 Smith.
9. Frederick S. Burr, D., 330 80th.
10. Geo. Dennen, D., 76 Clermont Avenue.
11. Karl S. Deitz, D., 477 Park Place.
12. Wm. P. Hamilton, Jr., D., 573 2d.
13. James H. Finnigan, D., 183 Skillman Avenue.
14. *James J. Garvey, D., 515 Leonard.
15. *Thomas E. Wilmott, D., 194 Russell.
16. Jesse P. Larrimer, D., 1533 W. 6th.
17. Frederick Ulrich, D., 1476A Fulton.
18. Joseph Henry Esquirol D., 25 Cooke Avenue.
19. *Jacob Schifferdecker, D., 225 Hamburg Avenue.
20. Cornelius J. Cronin, D., 74A Schaeffer.
21. *Harry Heyman, D., 321 Lorimer.
22. Joseph J. Monahan, D., 70 De Sales Place.
23. Thomas L. Ingram, D., 1966 Fulton.

LEWIS.

James B. Van Woert, D., Greig.

LIVINGSTON.

Edward M. Magee, R., Groveland Sta.

MADISON.

Morrell, E. Tallett, R., De Ruyter.

MONROE.

1. *Jared W. Hopkins, R., Pittsford.
2. *Simon L. Adler, R., Rochester.

3. *August V. Pappert, R., Rochester.
4. *Cyrus W. Phillips, R., Rochester.
5. Chas. H. Gallup, D., Adams Basin.

MONTGOMERY.

*Walter A. Gage, R., Canajoharie.

NASSAU.

Thomas B. Maloney, D., Great Neck Sta.

NEW YORK.

1. *Thomas B. Caughlan, D., 81 Varick.
2. *Alfred E. Smith, D., 25 Oliver.
3. Harry E. Oxford, D., 41 3d Avenue.
4. *Aaron J. Levy, D., 307 E. Broadway.
5. *James J. Walker, D., 6 St. Luke's Place.
6. Jacob Silverstein, D., 146 Lewis.
7. *Peter P. McElligott, D., 428 W. 24th.
8. Solomon Sufm, Pro., 107 Rivington.
9. Charles D. Donohue, D., 408 W. 43d.
10. *Meyer Greenberg, D., 104 2d Avenue.
11. John Kerrigan, D., 342 W. 47th.
12. Joseph D. Kelly, D., 223 E. 17th.
13. *James C. Campbell, D., 827 10th Avenue.
14. Robert L. Tudor, D., 159 Lexington Avenue.
15. Theodore H. Ward, D., 324 W. 83d.
16. *Martin G. McCue, D., 328 E. 46th.
17. Mark Eisner, D., 170 Broadway.
18. *Mark Goldberg, D., 222 E. 72d.
19. Thomas F. Denney, D., 263 W. 114th.
20. *Patrick J. McGrath, D., 300 E. 81st.
21. Thomas Kane, D., 334 W. 124th.
22. *Edward Weil, D., 132 Nassau.
23. David C. Lewis, D., 189 Edgecomb Avenue.
24. Owen M. Kiernan, D., 163 E. 89th.
25. David H. Knott, D., 103 Waverly Place.
26. Abraham Greenberg, D., 1210 5th Avenue.
27. Raymond B. Carver, D., 16 E. 37th.
28. Salvatore A. Cotillo, D., 277 Pleasant Avenue.
29. Charles Joseph Carroll, D., 106 E. 84th.
30. *Louis A. Culliver, D., 172 E. 122d.
31. Michael Schaap, Pro., 2041 5th Avenue.
32. Louis D. Gibbs, D., 846 Beck.
33. Thomas John Lane, D., 535 St. Ann's Avenue.
34. Patrick Joseph McMahon, D., 801 Tremont Avenue.
35. Ernest E. L. Hammer, D., 2636 Morris Avenue.

NIAGARA.

1. Frank M. Bradley, R., Barker.
2. Eugene A. McCollum, D., Lockport.

ONEIDA.

1. Fred F. Emden, D., Utica.
2. *Herbert E. Allen, R., Clinton.
3. John B. Fuller, R., Marcy.

ONONDAGA.

1. Patrick J. Kelly, D., Marcellus.
2. Stephen G. Daley, D., Syracuse.
3. *Thomas K. Smith, R., Syracuse.

ONTARIO.

Herman F. Schnirel, R., Geneva.

ORANGE.

1. *Caleo H. Baumes, R., Newburgh.
2. Wm. T. Doty, D., Circleville.

ORLEANS.

Marc W. Cole, D., Albion.

OSWEGO.

*Thaddeus C. Sweet, R., Phoenix.

OTSEGO.

La Verne P. Butler, D., Oneonta.

PUTNAM.

*John R. Yale, R., Brewster.

QUEENS.

1. Sam'l J., Burden, D., Long Island City.
2. *Alfred J. Kennedy, D., Whitestone.
3. Alfred C. Benninger, D., Ridgewood.
4. Howard Sutphin, D., Jamaica.

RENSSELAER.

1. *C. Frederick Schwartz, D., Troy.
2. Tracey D. Taylor, D., Berlin.

RICHMOND.

- *Ralph R. McKee, D., Tompkinsville.
ROCKLAND.
Frederick D. Grimme, D., Sparkill.

ST. LAWRENCE.

1. *Frank L. Seaker, R., Gouverneur.
2. John A. Smith, R., North Lawrence.

SARATOGA.

Gilbert T. Seelye, R., Burnt Hill.

SCHENECTADY.

Arthur P. Squire, D., Rotterdam Jct.

SCHOHARIE.

Edward A. Dox, D., Richmondville.

SCHUYLER.

*John W. Gurnett, D., Watkins.

SENECA.

Augustus S. Hughes, D., Seneca Falls.

STEBUEN.

1. Chas. A. Brewster, D., Addison.
2. James L. Seely, Jr., D., Canistota.

SUFFOLK.

1. Stephen A. Fallon, D., Setauket.
2. John J. Robinson, D., Centreport.

SULLIVAN.

*John K. Evans, D., Bloomingburg.

TIOGA.

*John G. Pembleton, R., Tioga Center.

TOMPKINS.

*Minor McDaniels, D., Ithaca.

ULSTER.

1. Lawrence M. Kenney, D., Saugerties.
2. E. M. Geatright, D., Marlboro.

WARREN.

*Henry E. H. Brereton, R., Diamond Point.

WASHINGTON.

Eugene R. Norton, R., Granville.

WAYNE.

*Albert Yeomans, R., Walworth.

WESTCHESTER.

1. *Tracy P. Madden, D., Yonkers.
2. Verne M. Bovie, D., New Rochelle.
3. Wilson R. Yard, D., Pleasantville.
4. Mortimer C. O'Brien, D., White Plains.

WYOMING.

John Knight, R., Arcade.

YATES.

*Edward C. Gillett, R., Penn Yan.

THE TRULY PROPER DOCTOR.

A truly proper doctor is a sort of Superman,
Who comes upon his knowledge by no ordinary
plan.
For he must not experiment on any human
thing,
But must to our relief and cure the latest science
bring.

CHORUS.

Oh, Doctor This, and Doctor That, please come
and heal us quick,
You are a demon when we're well, an angel when
we're sick!

* Re-elected.

And though for lower animals our sympathies
are big,
We think you'd better use this once that serum
guinea pig!
A truly proper doctor should weep at all our
aches,
But keep his understanding clear, lest he should
make mistakes.
He must inspire confidence, but he should never
bluff,
And cure by swift and simple means, and pleas-
ant, tasting stuff!

CHORUS.

Oh, Doctor This, and Doctor That, please come
and cure our pain!
Perform a miracle or two, and make us well
again.
We do not hold with nasty drugs, we shudder
at the knife,
We scoff at mental healing, but—you'll have to
save our life!

A truly proper doctor must practice for his health
As well as ours, nor ever cast a guilty thought
toward wealth.
Leave that to those who thrust and crush in
modern business strife,
But why should he be paid, whose job is only
saving life?

CHORUS.

Oh, Doctor This, and Doctor That, we're feeling
well again!
And though you tended us, we're sure that Nature
cured the pain!
We care not for your bandages, your powders
nor your skill,
Pray take them all away, and oh! pray take away
that bill!

LOUISE SEYMOUR HASBROUCK.

—From the *N. Y. Times*.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

BREWING. By A. CHASTON CHAPMAN, President of the Institute of Brewing. Fellow of the Institute of Chemistry of Great Britain and Ireland. Fellow of the Chemical Society. Cambridge at the University Press, New York; G. Putnam's Sons. 1912. Price 40c. net.

THE INDIVIDUAL IN THE ANIMAL KINGDOM. By JULIAN S. HUXLEY, B.A. Research Associate of the Rice Institute, Houston, Texas. Late Lecturer of Balliol College, Oxford. Cambridge: at the University Press, New York: G. P. Putnam's Sons. 1912. Price 40c. net.

THE PSYCHOLOGY OF INSANITY. By BERNARD HART, M.D. (London.) Lecturer in Psychiatry, University College Hospital Medical School; Medical Superintendent Northumberland House Asylum. Cambridge: at the University Press. New York: G. P. Putnam's Sons. 1912. Price, 40c. net.

E. MERCK'S ANNUAL REPORT OF RECENT ADVANCES IN PHARMACEUTICAL CHEMISTRY AND THERAPEUTICS, 1911. Volume XXV. E. Merck, Chemical Works, Darmstadt, 1912.

GENITOURINARY DISEASES AND SYPHILIS. By HENRY H. MORTON, M.D. Clinical Professor of Genitourinary Diseases in the Long Island College Hospital; Genitourinary surgeon to the Long Island and Kings County Hospitals and the Polhemus Memorial Clinic; Consulting Genitourinary Surgeon to the Kings Park State Hospital and the Beth Israel Hospital of Newark; Member of the American Association of Genitourinary Surgeons; Member of the American Urological Association; Fellow of the New York Academy of Medicine, etc. Illustrated with 275 half-tones and Photo-engravings and 18 full-page insert plates, 11 of which are in colors. Third edition, revised and enlarged. Philadelphia. F. A. Davis Company, Publishers. 1912.

TEXT-BOOK OF GENERAL AND SPECIAL PATHOLOGY FOR STUDENTS AND PRACTITIONERS. By HENRY T. BROOKS, M.D. Formerly Professor of Pathology at the New York Post-Graduate Medical School and Hospital; Consulting Pathologist to Beth-Israel, New York City, and New Rochelle, N. Y., Hospitals; Bacteriologist to St. Mark's Hospital, N. Y.; Member of the New York Academy of Medicine, the New York State, and Westchester County Medical Societies, etc., etc. Illustrated with 525 half-tone and other text engravings (110 in colors), also 15 full page plates in colors, containing 40 figures. Philadelphia. F. A. Davis Company, Publishers. 1912.

PATHFINDERS IN MEDICINE. By VICTOR ROBINSON. With a letter from ERNST HAECKEL and an Introduction by Abraham Jacobi. New York. Medical Review of Reviews. 1912.

SECOND ANNUAL REPORT OF THE CHARITIES COMMISSION TO THE HONORABLE CHARLES S. DENEEN, GOVERNOR OF ILLINOIS, SPRINGFIELD, ILLINOIS, December 31, 1911. Springfield, Ill. Illinois State Journal Co., State Printers, 1912.

THE SURGICAL DISEASES OF CHILDREN. By WILLIAM FRANCIS CAMPBELL, A.B., M.D., Professor of Anatomy, Long Island College Hospital; Surgeon-in-Chief Trinity Hospital; Attending Surgeon, Methodist Episcopal Hospital; Consulting Surgeon, Coney Island, Swedish and Jamaica Hospitals and Le Grand Kerr, M.D. Attending Pediatricist to the Methodist Episcopal, Williamsburgh, Bushwick and Swedish Hospitals; Consulting Pediatricist to the Industrial Home for Children and the Rockaway Beach Hospital. New York and London. D. Appleton & Co., 1912.

DISEASES OF THE EYES. By C. DEVEREUX MARSHALL, F.R.C.S., Surgeon to the Royal London (Moorfields) Ophthalmic Hospital and Ophthalmic Surgeon to the Victoria Hospital for Children, Chelsea. Fully illustrated. London: University of London Press. Published for the University of London Press, Ltd. by Hodder and Stoughton and Henry Frowde: Oxford University Press, 35 West 32d Street, New York City. Price \$3.75.

TREATMENT AFTER OPERATION. By WILLIAM TURNER, M.S., F.R.C.S., Senior Surgeon, "Dreadnought" Seamen's Hospital, Greenwich; Lecturer, Clinical Surgery, London School of Clinical Medicine (Post-Graduate); Surgeon Out-patient and Orthopædic Department, Westminster Hospital; Consulting Surgeon, Royal Hospital Diseases of Chest, etc., and E. ROCK CARLING, B.S., F.R.C.S., Surgeon, "Dreadnought" Seamen's Hospital, Greenwich; Senior Teacher, Operative Surgery, London School of Clinical Medicine (Post-Graduate); Surgeon (Out-patients), Westminster Hospital; late Dean of Westminster Hospital Medical School, etc. With a chapter on the eye by L. V. CARGILL, F.R.C.S., Senior Ophthalmic Surgeon and Lecturer, King's College Hospital; Ophthalmic Sur-

geon, "Dreadnought," Seamen's Hospital, Greenwich; Lecturer Ophthalmology, London School of Clinical Medicine; Surgeon, Royal Eye Hospital. London. University of London Press. Published for the University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde. Oxford University Press, 35 West 32d Street, New York City. Price, \$3.75.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Pædiatrics, Obstetrics, Gynæcology, Orthopædics, Pathology, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U. S. A., with the collaboration of John A. Witherspoon, M.D., Nashville, Tenn.; Sir Wm. Osler, M.D., Oxford; A. McPhedran, M.D., Toronto; Frank Billings, M.D., Chicago; Chas. H. Mayo, M.D., Rochester; Thos. H. Rotch, M.D., Boston; John G. Clark, M.D., Philadelphia; James J. Walsh, M.D., New York; J. W. Ballantyne, M.D., Edinburgh; John Harold, M.D., London; Richard Kretz, M.D., Vienna. With regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels, and Carlsbad. Volume IV, Thirty-second Series, 1912, Philadelphia and London. J. B. Lippincott Company. Price, \$2.00.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume I, Number IV (August), Octavo of 154 pages; Volume I, Number V (October), Octavo, 155 pages; Volume I, Number VI (December), Octavo, 153 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published bi-monthly. Price per year: Paper, \$8.00; cloth, \$12.00. W. B. Saunders Company, Philadelphia and London.

INTERNAL MEDICINE. By DAVID BOVAIRD, JR., A.B., M.D., Assistant Professor of Clinical Medicine in the College of Physicians and Surgeons of Columbia University, etc. J. B. Lippincott Company, Philadelphia and London, 1912. pp. 618.

In the author's brief preface the apology for this latest addition to the works on Internal Medicine is stated to be his impression that there is need both among students and practitioners of a compact and concise statement of the more important facts included in Internal Medicine. He aptly parallels the modern steel building, which is first framework and afterwards finish, with the student's acquisitions, which should be first compact foundation and afterwards detail, and adds that the strength of the building must lie in the framework.

Interpreted in the light of the author's preface, it would seem that Professor Bovaird had succeeded admirably in presenting a volume that, of necessity somewhat bulky, nevertheless covers an extended subject concisely, comprehensively and forcibly. It will undoubtedly prove serviceable as a text book and even as a book of ready reference for the practitioner, who feels the need of a hurried *résumé*, though its natural limitations confine its usefulness in that direction. It is abundantly supplied with excellent illustrations and plates and measures well up to the standard that the publishers have heretofore set.

It is not within the reviewer's province to debate the wisdom of multiplying books or to suggest that the material contained might advantageously be drawn from one or more of the systems of medicine already on the market. It is for the teacher to decide whether it is wiser to use a condensed text book when instructing his classes and later urging a broader reading to supplement the framework of his teaching. The fact remains that there is a large multiplication of books all dealing with phases of the same subject and all covering generous portions of the same ground, and it would seem a desirable thing, where possible, to avoid the repetition that necessarily arises from each presentation of a general subject.

HENRY G. WEBSTER, M.D.

BOOK REVIEWS.

PRACTICAL TREATMENT. By 82 eminent specialists. Edited by John H. Musser, M.D., Prof. Clinical Medicine, Univ. of Pa., and A. O. J. Kelly, M.D. Late Assistant Prof. Medicine, Univ. of Pa. Volume III: Octavo of 1095 Pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1912. Per volume: Cloth, \$6.00 net; Half morocco, \$7.50 net.

The third volume of this encyclopedia of treatment maintains the high standard of choice of subject and list of contributors. The work is in reality an encyclopedia of medicine and surgery, including the various special branches. The idea has apparently been to present the facts of etiology, symptomatology and diagnosis of disease as briefly as possible and devote most space to the question of treatment by medical or surgical measures. The impression given by the first volume was that therapeutic procedures were to be described in great detail and those conditions to which they were thought to be applicable discussed only to the most necessary degree. It would seem that there might well be a demand for a moderate-sized work of the former sort. The value of a many-volumed encyclopedia is always open to question in view of the rapid changes made in many departments of medicine and surgery in a short term of years.

DUDLEY ROBERTS.

A TREATISE ON FRACTURES AND DISLOCATIONS. By LEWIS A. STIMSON, B.A., M.D., LL.D., Professor of Surgery in Cornell University Medical College, New York. New (7th) edition, thoroughly revised. Octavo, 930 pages, with 450 engravings and 39 plates. Cloth, \$5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

This work on fractures and dislocations has long since been recognized as authoritative, and the appearance of the seventh edition but reiterates the profession's unqualified approval.

It is only necessary to note that the principal additions have been made in connection with the subject of treatment, especially in that of old dislocations, and in respect of the operative treatment of recent fractures.

Three new sections on some fractures of small bones in the hand and foot, and one on fracture of the external tuberosity of the femur have been added.

The value of the text has been enhanced by the addition of more than one hundred new illustrations from photographs and skiagrams.

Thus this classic work in its latest edition presents the modern principles and practice in a surgical field that has advanced with rapid strides.

WILLIAM FRANCIS CAMPBELL.

DIGESTION AND METABOLISM: The Physiological and Pathological Chemistry of Digestion. By ALONZO ENGLEBERT TAYLOR, M.D., Rush Prof. of Physiological Chemistry, University of Pennsylvania. Published by Lea & Febiger, Philadelphia, Pa.

Too much cannot be said in praise of this work which in many respects is unique in the English language. It is very complete, absolutely up to date, and the subject matter is plainly and concisely presented. For the more advanced student it must prove exceedingly valuable. While a considerable knowledge of organic chemistry is necessary if the reader is to comprehend all the subjects taken up for discussion, there is much that will prove interesting and of real clinical value to those who have not been able to keep in touch with the advances made along these lines, in recent years.

DUDLEY ROBERTS.

PRINCIPLES OF HUMAN PHYSIOLOGY. By ERNEST H. STARLING, M.D. (London), F.R.C.P., F.R.S.; Hon. M.D. (Breslau), Jodrell Professor of Physiology in University College, London. 1,423 pages, illustrated. Cloth, \$5.00 net. Lea and Febiger, Philadelphia and New York. 1912.

The physiologist is often asked by the physician what

is the best text-book in physiology for the practitioner. Three recent text-books may be recommended; namely, the fourth edition of Howell's Text-Book of Physiology, the sixth edition of Stewart's Manual of Physiology, and Starling's Principles of Human Physiology. All are excellent and it is difficult to choose between them. The latest is Starling's and it is larger by approximately 400 pages than either of the others. Its author is one of the leading British physiologists. His aim is to weave physiological data "into a fabric representing the principles which are guiding physiologists and physicians of the present day in their endeavors to extend the bounds of the known and to increase their powers of control over the functions of living organisms. Throughout the work I have sought to show that the only foundation for rational therapeutics is the proper understanding of the working of the healthy body. Until we know more about the physiology of nutrition, quacks will thrive and food faddists abound. Ignorance of physiology tends to make a medical man as credulous as his patients and almost as easily beguiled by the specious puffings of the advertising druggist."

The volume contains four books: on General Physiology, the Mechanism of Movement and Sensation, the Mechanisms of Nutrition, and Reproduction respectively. The account of the central nervous system closely follows Sherrington, who is the most conspicuous authority at the present time. The modern character of the work is indicated by such chapter or sectional headings as the defense of the organism against infection, the energy of molecules in solution, the passage of water and dissolved substances across membranes, the properties of colloids, and the neuro-muscular junction. The discussions of the successive topics are direct, clear and generally in accordance with the most recent findings of the science. Most of the illustrations are simple, many of them being outline drawings, and well selected. The physician may be disappointed in not finding as detailed applications of physiological principles and facts to clinical problems as he may desire, but as a readable and authentic account of the present status of the science of physiology the work deserves high commendation.

FREDERIC S. LEE.

CONSTIPATION AND INTESTINAL OBSTRUCTION (Obstipation). By SAMUEL GOODWIN GANT, M.D., LL.D., Professor of Diseases of the Rectum and Anus in the New York Post-Graduate School and Hospital, Etc. Phila. and London., W. B. Saunders Co., 1909.

So important a subject as constipation, has been treated in a plain and concise manner. The causes have been enumerated and classified and the treatment, non-medical as well as non-operative, have been given in detail.

The illustrations are numerous and instructive, and add much to the value of the book.

The various mechanical or surgical causes of constiveness are well brought out, and the technique required for corrective operations is given in a most clear and readable manner.

The work also includes chapters given to the management of constipation with medicinal remedies; the indications for the different kinds of remedies, and favorite prescriptions of many of the world's well known medical men appear.

Among the drugs to be used phelolphthalein might have been mentioned.

The chapters on internal and external hydrotherapy are excellent.

Many of the author's suggestions are well known but some are new, and original.

The book should be not only of value to the general practitioner, but to the surgeon as well.

H. W. L.

SURGICAL AFTER-TREATMENT. A manual of the conduct of surgical convalescence by L. R. G. CRANDON, A.M., M.D., and ALBERT EHRENFRIED, A.B., M.D. Second Edition, thoroughly revised; with 265 original illustrations. W. B. Saunders Company, Philadelphia and London.

It is evident that this very complete and practical manual of surgical after-treatment has received a well merited recognition, since after so short a time a second edition has been demanded.

As every ex-hospital interne recalls—surgical after-treatment is largely a matter of tradition—it is passed on from senior to junior. Not infrequently the traditions grow stale and the customs hoary with age. It is not unusual to observe a thoroughly modern operative technique followed by an antiquated after-treatment. This is to be deprecated; and herein lies the mission of this book. It is thoroughly practical, up to date. Every procedure has stood the test of practice and can be safely utilized until experience develops individual methods.

In its practical and helpful aspects this book is a real contribution to surgical literature and should be in the hands of all house surgeons in hospitals and general practitioners in communities which are not surgical centers.

WILLIAM FRANCIS CAMPBELL.

A TREATISE ON TUMORS. For the use of physicians and surgeons. By ARTHUR E. HERTZLER, M.D., of Kansas City, Mo., Assistant Professor of Surgery in the University of Kansas. Octavo, 728 pages, with 538 illustrations and 8 plates. Cloth, \$7.00, net; half Persian morocco, gilt top, de luxe, \$9.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

The author presents a work of 725 pages with 538 illustrations and 8 plates. The contents is divided into three parts. Part I. is devoted to the General Biology of Tumors; Part II. considers the Special Pathology of Tumors; and Part III. is a Regional Consideration of Tumors.

The author aims to give students and practitioners a guide to the proper recognition of tumors by placing the chief emphasis upon the practical aspects of the subject and including sufficient of the more abstract considerations to make the practical side broadly intelligible.

The author's style is clear, concise and thoroughly didactic. The text is liberally and artistically illustrated. It is a real contribution to medical literature and a fine specimen of book making. It will prove a valuable addition to the physician's library.

WILLIAM FRANCIS CAMPBELL.

TUMORS OF THE JAW. By CHARLES LOCKE SCUDDER, M.D., Surgeon to the Massachusetts General Hospital; Lecturer on Surgery in the Harvard Medical School; Fellow of the American Surgical Association; Member of the Society of Clinical Surgery. With 353 illustrations, 6 in colors. W. B. Saunders Company.

The author presents for consideration a volume of three hundred and ninety-one pages, with three hundred and fifty-three illustrations, six in color. The material is grouped under nine headings, to-wit: Epulis; Sarcoma of the Jaws; Benign Tumors of the Jaws; The Odontomata; Carcinoma of the Jaws; The Diagnosis and Operative Treatment of Malignant Disease of the Upped and Lower Jaws; Tumors of the Palate; Leontiasis Ossea, and Prosthesis.

The author's object in presenting this monograph is first, "to assist the physician in determining in a given case what form of new growth is present and what is its best treatment." Second, "to make vivid the picture of each tumor of the jaw by statistical story and by case-history, so that the physician may recognize the new growths of the jaws in their early stages."

In reviewing the chapters of this book there is observed evidence throughout of a painstaking workmanship and a grasp of the subject which results in a lucid and illuminating contribution to this important

subject. Statistical stories and case-histories with striking illustrations delineate for the reader a vivid picture of each type of tumor. It is fair to remark that some of the pictures accentuate the importance of early diagnosis only by illustrating the terrible gruesomeness of the last and inoperable stage—a condition rarely seen in this era of modern surgery.

The author is to be congratulated and the profession are his debtors for this fine and complete description of the neoplasms of the jaws—the first in American Medical Literature.

WILLIAM FRANCIS CAMPBELL.

CONSUMPTION IN GENERAL PRACTICE. By H. HYSLOP THOMSON, M. D., D.P.H., Medical Superintendent, Liverpool Sanatorium. Henry Frowde. Oxford University Press. Hodder & Stoughton, Warwick Square, E.C., 1912.

Mark Twain once said that he would consider a library to be a very good library, though it did not contain a single volume of Jane Austen, even if it did not contain anything else. In like manner, we may remark that a modern book on Consumption that did not contain a single picture of slums in the first part, or of Sanatoria in the second part, and was otherwise not padded with statistics, would be a very good book on Consumption even if it did not contain much else.

Dr. H. H. Thomson has shown how to write a most interesting book on this subject without the aid of photographs or pages of statistics.

He divides his subject into the three essentials of Diagnosis, Prognosis, and Treatment, and his book has the peculiar distinction of having one-fourth of the whole work devoted to Prognosis. This is not the usual proportion in works on this subject, but after carefully reading what Dr. Thomson has to say on Prognosis, one has to admit that the space given to that section is in no way wasted. For there are few other diseases in which the question of Treatment hinges so much upon the careful determination of the stage of the disease and its rate of progress. There is in the section on Treatment an interesting chapter on Treatment by auto-inoculation, and what he has to say on tuberculin is of very special interest at present, when one hears of hospitals and dispensaries discarding the use of it. It may be that where it has been discarded in this country by hospital or dispensary, it is simply because the very careful selection of cases as advised by Dr. Thomson has not been followed. But of the value of it in Sanatorium or dispensary practice, the author has no doubt. Those who are using tuberculin should read what Dr. Thomson has to say and compare results, and those who are thinking of using it, cannot do better than take his method as a guide.

P. SCOTT.

DEATHS.

ELLSWORTH ELIOT, M.D., New York City, died December 9, 1912.

ADELBERT JOHN DOUGLASS, M.D., Ilion, died November, 1912.

ADOLPH KANTROVITZ, M.D., New York City, died December, 1912.

EDWARD J. KIEPE, M.D., Buffalo, died November 23, 1912.

EVA V. MEAD, M.D., Buffalo, died November 20, 1912.

PAUL O. MEYER, M.D., Long Island City, died December 18, 1912.

EDWARD LE ROY OATMAN, M.D., New York City, died December 26, 1912.

FREDERIC S. SELLEW, M.D., New York City, died December 28, 1912.

CHARLES E. WELLS, M.D., Sag Harbor, died November 14, 1912.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

ALGERNON THOMAS BRISTOW, M.D., Editor

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EDITORIAL DEPARTMENT

AGAIN THE ANTIS.

"WHEN I told the partner of my joys and sorrows, that I had accepted an invitation to speak here, she asked me with that sense of finality which even the best of wives assume at times: 'What do you know about vivisection,' I had to confess that I knew nothing."

With this very appropriate introduction, a clergyman commenced an onslaught on the practice of animal experimentation at a recent meeting of the New York Anti-Vivisection Society and proceeded to attack men of whose motives and methods he confessed entire ignorance, in a series of oratorical commonplaces and platitudes, utterly without sequence and having no logical bearing on the subject. The reverend gentleman, like many another man, would better have listened to his wife. There was a finality to her logic which his own lacked. Nothing could illustrate more clearly the mental attitude of the anti-vivisectionists as they are pleased to term themselves, than the rapturous reception which greeted the reverend dialectician. The air resounded with kid-gloved approbation. Among other felicitous examples of sweet reasonableness, the pulpit orator quoted, with approval, Bernard Shaw's query, "What if science should demand that I should boil my mother-in-law for the good of society?" Exactly what bearing the boiling of mothers-in-law has upon animal experimentation, the argument failed to develop. No doubt, many gentlemen would be delighted to boil their mothers-in-law, not themselves

fond of being in hot water. We do not at present remember that any of our physiologists have been indulging in such culinary luxuries, nor have we observed in the *Journal of Experimental Medicine*, the report of any experiment, having boiled mother-in-law for a basis. Imbued, however, with unbridled and hysterical imagination, the Antis insist that we ought to be investigated by a thoroughly impartial commission to consist of two gentlemen who are in favor of animal experimentation, two ladies or gentlemen who are opposed to it with the knowledge and judicial mind implied in the preceding paragraph, and a neutral party who confessedly knows nothing about the subject and cares less. Truly these gentle souls are not without a craft and guile, which is peculiarly their own, as devious as their logic and twice as convincing.

As pointed out in the *New York Times* recently, two Royal Commissions in Great Britain have reported, the first in 1876, that no material abuse of animal experimentation existed, the last, reporting in March of 1912, overwhelmingly disproved the charges that medical experiments on animals are immoral and unjustifiable. How long is the medical profession to be the subject of these vicious and untruthful attacks? Not long ago a most atrocious and absolutely unfounded charge was made against one of the investigators of the Rockefeller Institute. It was without a shadow of justification and were the libel laws of the United States similar to those of Great Britain, the attack would have cost its author a good round sum in damages.

Ignorance, idleness and wealth make a combination which is rarely out of mischief. It is a pity that the medical profession has to endure the assaults of this sort of trust. It is one which it appears the Sherman law does not reach and like the poor, it is always with us and always "agin" us. These good ladies wear the spoils of fur and feather complacently, delightfully unconscious of their own inconsistencies. It is a pity that there is perhaps not one of them to espouse the cause of the egret bearing heron and her starved nestlings, the trap tortured wild creatures whose fur is their destruction. Doubtless some day, we shall find a defender who has harkened to the low moan of the silk worm as he is being baked in his cocoon, for the benefit of the silk looms of Lyons and Paterson, to make a silken holiday for the gentle antis.

To the advocates of the bill of Senator McClelland, authorizing the appointment of the hybrid commission before referred to, we commend the following extract from the exhaustive report of the last Royal Commission. "We desire to state that the harrowing descriptions and illustrations of operations inflicted on animals are in many cases calculated to mislead the public, so far as they suggest that the animals in question were not under the influence of an anæsthetic." We also commend to the public the following extract from a letter of Lord Cromer to the *London Times*: "I do not think that any impartial person will be able to read this illuminating report without coming to the conclusion that the supporters of vivisection have proved their case." In the face of this report, these deluded agitators clamor for an investigation by a committee of one, whose qualifications to decide questions of science cannot be determined in advance, since the proposed law provides for two commissioners, in favor of and two against animal experimentation, the fifth, with *deciding vote* to be "neutral." Suppose such a hybrid commission reported in favor of the doctors, what security would there be for the medical profession that the same unreasoning clamor would not arise again for another commission and still another. How many times are we to be tried for imaginary offences? How often acquitted? Eternal vigilance seems to be the price of safety and so long as virulent and untruthful attacks continue to be made upon the most self-sacrificing and most poorly paid members of a honorable profession, we must continue to stand on guard.

We trust that the members of the Medical Society of the State of New York will continue to exercise their influence with their representatives in Albany in defense of their colleagues whose investigations in the most difficult and least remunerative field of medicine have brought peace to many a mother's heart and shielded many a helpless infant from the sword of the destroyer.

RADIOGRAPHY IN THE COURTS.

IT would seem to be an opportune time to again refer to a continuing blunder of some of our physicians and surgeons in accepting indemnity insurance. The law makes the mal-practice of a physician a personal wrong described as tort; indeed, some of the varieties of mal-practice are little less than crimes. Such insurance should be unlawful. While it may be, indeed, it should be, a matter of good business judgment for a non-professional man to protect himself against accidents caused through carelessness or otherwise, committed by his servants and employees, with a doctor or lawyer it should be impossible. The very nature of his employment should prevent. His relationship is too close, too personal.

A careful, skillful and competent man of Long Island was recently sued for \$25,000 for mal-practice, in which he was charged with being careless and negligent in connection with the treatment of a fractured femur. Last week a verdict was rendered against him for \$11,700. The defense was conducted by one of the indemnity insurance companies of New York. The expert called by the plaintiff was a young physician of New York, with an experience of two years in private practice furnishing his foundation for expert opinion. Dr. Bristow of Brooklyn and Dr. E. Eliot of New York testified for the defendant.

The knowledge that the defendant was insured was brought out by the plaintiff's counsel by questions put to the jury at the opening of the case. This is just what was desired by the plaintiff, and had the effect of prejudicing the jury to start with. Without this unfortunate prejudice the case could hardly have been lost. A jury feels that so long as the doctor does not have to pay, but the insurance company is responsible, no harm is done to the doctor; but as a matter of fact, such a verdict oftentimes spells his professional ruin.

The policy of an organized defense as conducted by the State Society of this state is absolutely opposed to the insurance idea, and a decided stand must be taken, if necessary going so far as to decline to take any part in the defense of physicians who are insured. The Society has not yet gone so far, and our counsel felt it was his duty to act in such assisting capacity as was conveniently possible for him to do, but he declined to take any responsibility as to the outcome of the case from the beginning, and the defendant, in order to avail himself of the insurance was, of course, obliged to have the insurance company represent him.

From the summing up by the counsel for plaintiff and defendant, and from the charge of the trial justice, it was clear that the chief inquiries were directed to the non-use of the X-ray in confirming diagnosis and as an aid to disclosing the position of the fractured fragments of bone and also to the permission of the doc-

tor to allow the patient to go home too soon (9½ weeks).

Upon the advice of her family physician an open operation was subsequently performed upon the leg, and a Lane plate fastened to the fractured fragments after the chiseling away of the callus and a forcible reduction of the deformity. It appeared in the evidence that before the plate was applied five-eighths of an inch was taken off each end of the fragments, to "freshen" the ends. The X-ray plates taken after this operation showed from one-quarter to one-half inch shortening, caused by curvature in the axis of the bone by reason of the plate not holding properly. Eventually the plaintiff had a shortening of about two inches, and the jury's finding determined the question that the open operation was made necessary by the defendant's failure to have an X-ray picture made.

The charge of the presiding justice certainly did not help the defendant; indeed, it seemed strongly favoring the plaintiff. There was nothing, however, said by the Court from which the jury could say that they had learned how the Court felt about the case; but the review of the evidence and the drawing of the mental parallels seemed to be almost uniformly unfortunate for the defendant.

There was no evidence that any different splinting or bandaging should have been used than that applied by the defendant. He called a surgeon of wide experience in consultation, treatment was continued for nine and one-half weeks under his care; it therefore becomes extremely difficult to understand upon what theory the minds of the jury operated, unless it was brought against the insurance corporation, coupled perhaps with sympathy for the plaintiff.

For the sake of the unfortunate defendant, who, under his policy, will have to pay more than half the verdict personally, it is hoped an appeal will succeed and a new trial be granted.

The counsel for the State Society has had fourteen years of experience in defending malpractice cases, and he has finally successfully disposed of approximately two hundred cases. It is therefore urged that the State Society is adequately equipped to defend physicians who are sued, and they have but to ask to be furnished this defense. The jury prejudice against the insurance company is done away with, and the doctor can feel that he is equipped to make an independent fighting defense.

The fact brought out in the evidence which constitutes the real hardship in this case was that the defendant did his best to secure an X-ray radiograph of the fracture, but failed to get a satisfactory plate because the hospital apparatus, inefficient at best, was out of order. The superintendent of the hospital was notified of this not only by the defendant, but also by the house-surgeon. Nothing was done, however, by the Board of Managers during the entire time of the patient's stay in the hospital, nine and one-

half weeks. It was the contention of the counsel for the plaintiff that the defendant should have notified the plaintiff of the uselessness of the hospital apparatus and have permitted her, if she could have afforded it, to have a portable apparatus brought from the city. Inasmuch as she left the hospital with but three-quarters of an inch shortening and now has two inches shortening as a result of operation, the logic of the jury is hard to understand. What is quite obvious, however, is the danger which threatens the medical profession from the use of the X-ray. There are scores of little hospitals throughout the state, either with no X-ray apparatus or one that is cheap and bad, without an experienced man in charge. The position in which this verdict places all physicians if upheld is certainly unfortunate to say the least.

THE PROGRAM FOR THE ANNUAL MEETING.

ON page 110 of this number of THE STATE JOURNAL OF MEDICINE will be found the preliminary program for the Annual Meeting. The Oration in Medicine is to be delivered by Prof. John G. Adami, of Montreal. Dr. Adami's reputation as a distinguished teacher is well known and ought to insure a large attendance at the opening session. The meeting will be divided, as in 1912, into five sections, but with this difference. The section on Mental and Nervous Diseases, Eugenics and Medical Expert Testimony has been replaced by a section on Pediatrics, and the section on Public Health and Preventive Medicine by a section on Obstetrics and Gynecology. The change has, no doubt, been carefully considered, and is based in part on the lack of attendance at the last meeting on the sections which have been dropped. It seems a pity, however, to drop the section on Public Health and Preventive Medicine, when we consider how large are the questions of this sort which loom upon the horizon of today.

As the division of the Annual Meeting is at present in an experimental stage, riper experience may still further modify the changes which the subdivisions has brought about. The number of papers which are to be read at the 1913 meeting will be considerably less than in 1912, as it is thought that more time will thus be available for fuller discussion and larger liberty to the readers of papers.

The attendance at the last Annual Meeting in Albany was about 700, which was an increase of almost 50 per cent. over the attendance the preceding year. Most of the attendance, however, was from the eastern part of the state.

As the meeting this year has been moved to the west, for the purpose of accommodating the physicians of that part of the state, we trust that they will show their approval of the change which has been made on their behalf by increased attendance. The program speaks for itself.

Original Articles

OPERATIVE TREATMENT OF
FRACTURES.*By JOHN B. WALKER, M.D.,
NEW YORK CITY.

AT the present time every department of the industrial world is vigorously attempting to secure greater efficiency.

Every day that a workman is absent from his occupation, there is a double loss,—on the one hand to his employer, and on the other hand to himself and his family.

In no class of injuries, except fractures, is the prognosis so uncertain, as to the duration of the inability, the period of convalescence, the ultimate functional result and the chance of permanent disability.

It seems well therefore, to bring this subject before this State Society for most general discussion as it is most important from an economic point of view to consider the cause of the prolonged convalescence in workers who have suffered from fractures more particularly of the femur and humerus.

During the past two decades almost the whole body of modern surgeons has appeared to be concentrating its attention upon abdominal lesions, so that the treatment of fractures, which are of most frequent occurrence, has been somewhat neglected. Since the X-rays have enabled one to see and photograph the broken bones, the public have taken an increased interest in fractures and are demanding greater skill in their treatment. Many eminent surgeons of acknowledged skill and broad experience approach ordinary thigh fractures with guarded prognosis. In the past they accepted results as satisfactory which are now considered most unsatisfactory. In 1891, Stephen Smith, as chairman of the fracture committee of the American Surgical Association, asserted a "satisfactory result to be present when shortening did not exceed one-half to one inch."

A satisfactory result is often too elastic a term. Shortening sufficient to entail permanent limping, angularity, and rotation are not rarities in surgical experience.

Frankly, I believe the average results following the usual treatment of these fractures are not as satisfactory as is generally supposed, although a few surgeons of unusual mechanical skill have secured excellent results.

When the end results of the majority of fractures are carefully analyzed, it is found that the time required to regain *normal function* is unexpectedly prolonged often until a year has elapsed after the fracture.

Text books give the average length of time

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 16, 1912.

necessary for union to be formed but they do not state the uncertain period required for recovery of function.

While the formation of union in the shaft of the femur may require three to four months, the patient may not be able to resume his previous work for about a year. Scudder well states that "The degree of restoration of function cannot be determined with accuracy until about one year has elapsed after treatment is suspended."

In following up one hundred patients who were treated at Bellevue Hospital for fractures of the femur during 1909, 1910, and 1911, I found that although a majority were able to return ultimately to work, yet the largest number continued to suffer some disability,—especially lameness, limping at times; stiffness either at the knee or the ankle and frequently both; and in a number of cases there has existed marked atrophy of the thigh muscles.

Most of these patients were treated in the usual manner with Buck's extension for several weeks; later when there seemed to be sufficient union, a plaster cast was applied; and after two or three weeks, the patient was allowed up in a wheel chair and then up and about the wards on crutches. In a few cases, an anæsthetic was used in the hopes of being able to improve the position of the fragments.

During 1911, the histories show that the fractures received much greater attention than before and that the end results were also much improved.

In 1909, we began to operate on those selected cases in which it was thought better results could thus be secured than by the usual closed method. As our experience has increased, the field for operations has become broadened.

In the opinion of a large majority of trained surgeons the operative treatment of recent fractures is viewed with favor at the present time.

Failures or disasters attending the open treatment of fractures, are not due to the broad principle underlying the undertaking, but rather to inexperience on the part of the operator or to faulty technic.

The results warrant the belief that operations are indicated upon the femur in fractures of the upper and lower thirds, when the fragments are much displaced, as they frequently are and in spiral fractures of the shaft; upon the humerus, in fractures of the surgical neck with dislocation or rotation of the head of that bone; and in fractures just above the elbow joint. Upon the radius and ulna when both bones are fractured; upon the radius when fractured at the junction of the upper and middle thirds; and at the elbow and ankle joints, whenever the fragments cannot be replaced satisfactorily.

Conclusions.

The longer the delay the more the tissues contract and the chief difficulty in the reduction of fractures is the shortening of the tissues which so displaces the fragments.

If a fracture be considered as a wound the sooner and more accurately the wound surfaces are brought together and retained in apposition the less will be the swelling, and the more perfect the healing.

The operative method is indicated for the immediate accurate reduction of displaced fragments of long bones whenever it is impossible to correct the deformity without operation.

It is necessary in fresh cases in which the fragments are irreducible or cannot be molded into place or cannot be kept in place after a fair trial, or in cases in which there is involvement of the joints with loose or unmanageable fragments; in older cases of vicious union with malposition of various kinds, which interfere with perfect function.

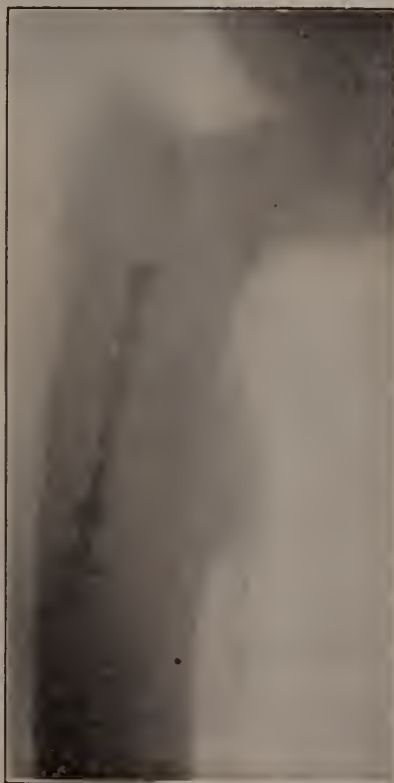
The accompanying illustrations represent the typical class of cases which demand operation in order to obtain the most satisfactory results:

CASE A. Female, 42, stout; femur upper third. Reduction was attempted under anæsthetic without success. Buck's extension was applied. At the end of six days there persisted 4 cm. shortening together with angulation and rotation. She was operated on at this time and a six-hole Lane plate applied. No drainage. Plaster cast from pelvis to toe was applied. The patient was in bed four weeks. Primary union. Thirteen months after the operation the patient walked without limping and no complication whatsoever has developed. Two years have elapsed without any complication from the operation.

CASE B. Male, 16 months; femur, upper third. Fractured at delivery. Union had occurred with much angulation and rotation and 2.5 cm. shortening. 485 days after the accident an operation was performed. A small four-screw Lane plate was applied. No drainage. A plaster spica was applied from ribs to toes and removed in forty-five days. Primary union. Normal walking was acquired in six months. Perfect union was secured. No slightest complication has arisen in three years after the operation.



CASE A. (FIG. 1.)
Femur, upper third.



CASE A. (FIG. 2.)
Femur, upper third. X-ray taken two years after operation. Normal function regained within one year after operation.



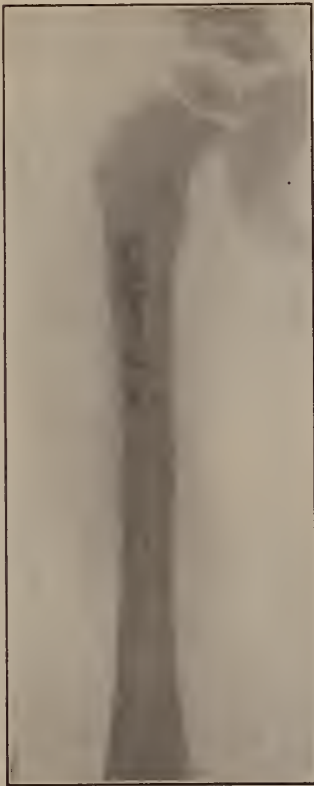
CASE B. (FIG. 3.)
Femur, upper third.

CASE C. Male, 43; femur, middle third. Oblique spiral fracture. A Buck's extension was applied for ten days at the end of which time there was 4.5 cm. shortening, angulation and rotation. On account of the persistent deformity an operation was now performed and a six-hole Lane plate applied. No drainage. Plaster spica from pelvis to toes. Primary union. He worked on the seventy-fourth day. Eleven months after operation function is perfect and no complications have arisen in two years.

CASE D. Male, 34; femur, lower third. Reduction was performed under anæsthetic and extension applied. 193 days after the accident angulation and rotation were present and there was 7 cm. shortening. An operation was performed and a six-hole Lane plate was applied. No drainage. Plaster spica from ribs to toes was applied and the patient kept in bed six weeks. Primary union. Four months after the operation he walked without limp or discomfort. At the end of twelve months he has had no complications and can flex the leg easily to right angles.

CASE E. Male, 16; humerus, surgical neck. Reduction was found impossible under anæsthesia. Fourteen days after the accident an operation was performed and a three-hole Lane plate applied. No drainage. A plaster bandage including both shoulder and elbow was applied and removed on the fourteenth day. Primary union. Massage was employed. The patient went to work six weeks after the operation. At the end of eight weeks he had regained normal function. At the end of one year no complications had arisen.

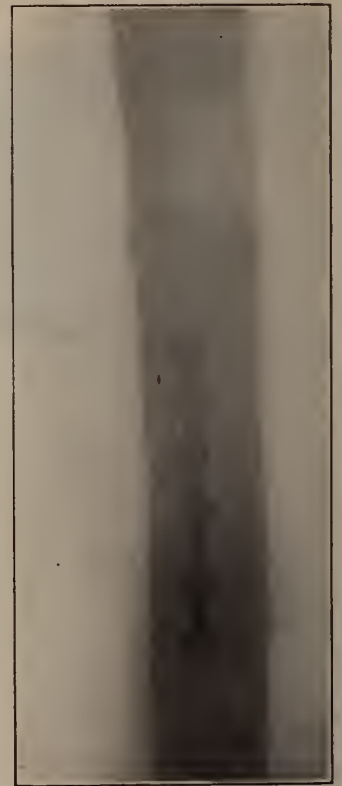
CASE F. Male, 4. Elbow, fracture and dislocation. Fracture of external condyle and separation of epiphysis of the humerus; dislocation backward of radius and ulna. Reduction was attempted under ether the day after the accident but was unsuccessful. An operation was performed at once, the dislocation being reduced and the epiphysis held by chromic catgut. No drainage. A plaster cast was applied in acute flexion and removed on the eighteenth day. Primary union. Six months after the operation function is completely restored. No complication has arisen in eighteen months.



CASE B. (FIG. 4)
Femur, upper third. X-ray taken two years after operation. Normal function regained within one year after operation.



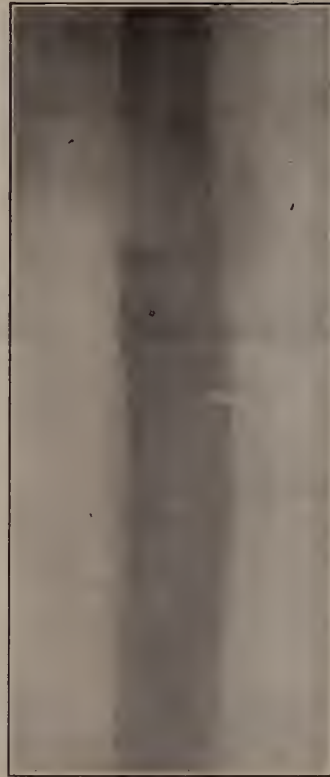
CASE C. (FIG. 5)
Femur, middle third.



CASE C. (FIG. 6)
Femur, middle third. X-ray taken one year after operation. Normal function regained within four months after operation.



CASE D. (FIG. 7.)
Femur, lower third.



CASE D. (FIG. 8.)
Femur, lower third. X-ray
made six weeks after opera-
tion; primary union. Pa-
tient walked without limp
or discomfort four
months after
operation.



CASE E. (FIG. 9.)



CASE E. (FIG. 10.)



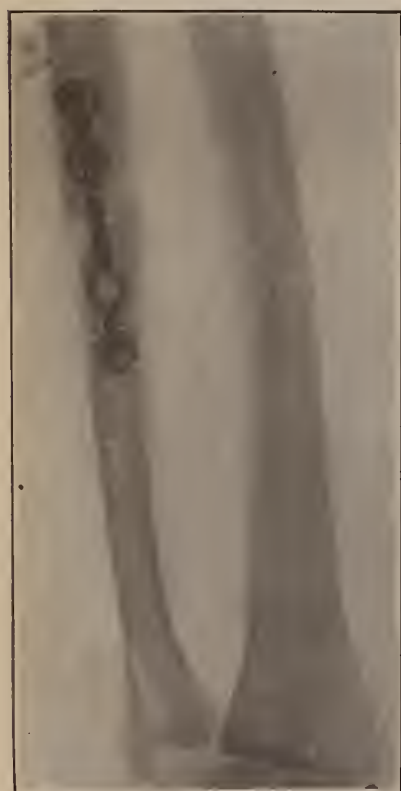
CASE F. (FIG. 11.)



CASE F. (FIG. 12.)



CASE G. (FIG. 13.)



CASE G. (FIG. 14.)



CASE H. (FIG. 15.)



CASE H. (FIG. 16.)

CASE G. Male, 33; radius and ulna, middle third. Reduction was attempted under ether with unsatisfactory results. An operation was performed three days after the accident. A four-hole Lane plate was applied to the ulna. It was found that the fragments of the radius had mortised themselves together in such good position that no plate was required. No drainage. Antero-posterior splints were applied and removed at the end of twenty-two days. Primary union. Four months later the result was excellent.

CASE H. MALE, 22; radius and ulna, lower third. Reduction was attempted within four hours under ether and antero-posterior splints applied. The fragments could not be approximated. In twenty-four hours another unsuccessful reduction was attempted. Abrasions delayed operation until thirty-five days after the accident. A four-screw Lane plate was applied to the radius and a two-screw plate to the ulna. No drainage. Antero-posterior splints were applied and the last one removed forty-seven days after the operation. Primary union. The final result was excellent.

Discussion.

DR. SAMUEL LLOYD, of New York City: In my opinion one should be prepared to treat these cases by either method. In cases where the displacement can be overcome completely and retained in apposition readily, when crepitus is clearly made out, no surgeon should think of operative methods. On the other hand, when it is evident that the fragments cannot be held in position, when the fracture is complicated or multiple, especially when there are small fragments detached from or with a very slight periosteal attachment, they should be operated upon, put in position and the small fragments removed. In cases, where the crepitus could not be obtained it is evident that a shred of tissue or a blood clot is separating the fragments. These cases must be operated upon. In the fractures of the elbow when complete reduction cannot be obtained operative treatment is absolutely essential. In a study of the elbow joint which I made years ago, in the earliest days of the X-ray, which was read before this Society it was demonstrated that the ankylosis of the elbow joint is nearly always due to bony deformity, either displacements of fragments or callous, and not to fibrous bands. Finally, I wish that Dr. Walker had spoken of the open treatment of fractures of the neck of the femur for I believe that in many of these cases good union can be obtained if the fragments are brought into close apposition by plates or nails.

THE RADICAL ABDOMINAL OPERATION FOR CANCER OF THE CERVIX.*

By LEROY BROUN, M.D.,

NEW YORK CITY.

FREUND, on January 30, 1878, first extirpated a cancerous uterus by abdominal section. Ries, of Chicago, in March, 1895, described the complete extirpation of the cancerous uterus and the involved regional glands by abdominal section. His description was based on anatomical studies. He stated in the description of his dissections that at the time no operable cases had presented itself.

Clark, of Philadelphia, in April, 1895, described an operation similar to that proposed by Ries as performed by himself on the living patient.

Rumpf, of Berlin, on June 28, 1895, reported as having removed, by abdominal hysterectomy, a cervical cancer of the uterus with its parametric tissue and regional glands. The operation was done on the lines laid down by Ries, who evidently felt that it was inspired by the published description of his own studies.

While the priority for the description and performance of the extended operation thus belong to American surgeons, Ries and Clark, yet the credit for its development must be given to foreign operators.

Wertheim, in his recent admirable monograph, reporting 500 personal cases, presents to the profession a monument of painstaking care and accuracy. It is to his labors and exhaustive study that the operation bearing his name is today the recognized procedure for such conditions.

Jacobson, in 1910, before the American Medical Association, presented a statistical paper in which he had collected 2,467 radical operations by foreign surgeons, as against 298 as done by surgeons of America.

While these figures were not complete either for the foreign operators or those of our own country, they, however, serve to show in a striking manner that the value of the operation has not been fully appreciated in America up to the last two years.

Wertheim, in his most admirable monograph, representing 500 personal cases, carefully analyzes 250, all of which have been operated on, for over five years; of these:

- 78 showed a recurrence,
- 106 showed no recurrence,
- 63 died from operation,
- 3 died from intercurrent disease.

Not reckoning the operative deaths, we have: 184 recoveries from operation and 106 immunities after five years, or 57.6 per cent. Reckoning the operative cases, we have 247 operations

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

with 106 immunities, or 42.9 per cent. freedom after five years.

The five-year results of other foreign surgeons vary from 42 per cent. of Von Rosthorn to 60 per cent. of Polosson.

Compare these figures with the known 20 or 25 per cent., the best to be obtained from vaginal hysterectomy as immunity after five years, and we are forced to admit to ourselves that the extended operation yielding over twice the number of immunities, is without question the operation of preference.

Extent of Application.—The scope of the abdominal radical operation is greater than is permissible in classical vaginal or abdominal hysterectomy.

Formerly an induration of the base of the broad ligaments was recognized as rendering a hysterectomy, either by the vagina or abdomen, as useless. Wertheim, in his recent monograph, states that in 1898, 15 out of 100 cases examined were operated on. This rapidly rose to 30 and then 50, and during the last two years to 61 per cent. From the 1,096 cases examined, from which the 500 operations, the basis of his monograph, were taken, practically 50 per cent. were given operation.

In eight large foreign clinics an average of 60 per cent. of the uterine cancer cases presenting were operable.

Primary Mortality.—The primary mortality following this operation is high in advanced cases. In early involvement of the cervix, with freedom from constitutional sympathy, the mortality should not be greater than that involving any grave abdominal work. Wertheim reports in his first 250 cases a mortality of 25 per cent. In his last 200 consecutive cases the mortality has been 12 per cent.

The average mortality of the collected operations by Jacobson is 19.94 per cent. abroad, and in America 15.77 per cent. Of my own personal six cases there was one death a week following the operation from an acute colon bacillus infection of the kidneys, evidently superinduced by shock as a result of an excessive loss of blood and prolonged anesthetic.

The essential features of the radical operation are, the freeing of the ureter from the base of the broad ligament to its entrance into the bladder, the removal of all parametric tissue possible, and the treatment of the raw space.

In reviewing these heads, let us look at the necessity of the parametric and gland removal. It is known that in cervical cancer 50 to 70 per cent. of all cases are attended by an involvement of the parametric tissue, and as wide a removal of this tissue in connection with the uterus as is possible to do is an essential feature of the radical operation. The necessity of the systematic regional gland removal is, however, still in dispute.

Ries adheres to the belief that the regional

lymph glands are early the seat of metastasis in carcinoma of the cervix. Mackinrodt strictly defends the same belief.

Cullen was the first, in 1900, to show that only a small part of the operable cases of carcinoma of the uterus were accompanied by metastases of the regional lymph glands.

Winter found cancerous glands in only two cases in forty-four autopsies where the cancer was still confined to the uterus.

Schauta, in a study of sixty cases of uterine cancer, distributed as follows:

Died from operation	11
Died from other causes	9
Died from cancer	40

shows by autopsy that while a majority of these died as a result of cancer and without operation, yet 43.3 per cent. were entirely free from carcinomatous deposits in the glands.

Schauta divides the glands possible to be the seat of metastases into two classes—those in the pelvis that can be removed, and those along the aorta that cannot be removed. He finds, as a study of these sixty cases, that 26 or 43.3 per cent. showed no involvement of either the pelvic or aorta glands.

Eight showed involvement of pelvic, but not of aorta glands.

Twenty-one showed involvement of pelvic and aorta glands.

Five showed no involvement of pelvic, but involvement of aorta glands.

It will be seen that of the 34 cases in which the pelvic glands were involved, only eight, or 13.3 per cent. could possibly have been benefitted by gland removal, it being admitted that a removal of the aorta glands is impossible.

Wertheim, while not making an attempt to remove all regional glands yet insists that the splitting of the peritoneum over the iliacs, and the feeling for and removal of enlarged glands when recognized, does not greatly prolong the operation, and should be done. He cites, in support of his belief, that in 41 cases of involvement of the regional glands, and their removal, five cases have had no recurrence of carcinoma after five years.

In another part of his admirable monograph, he however, states that in instances of involvement of the lymph glands, the outlook is gloomy, there being 87 per cent. of recurrence, or in other words, only 13 per cent., were benefitted by the additional risk incurred in the gland removal.

What a remarkable agreement in Wertheim's statement of recurrence after regional gland involvement and the studies of Schauta of his 60 cases, in which he shows by autopsy that only 8, or 13 per cent., could possibly have been benefitted by gland removal.

With such a review of the subject, I am entirely in accord with Clark, that we are fully conserving the interests of our patients during

the operation, to confine our efforts to as complete removal as possible of the parametric tissue, and not to prolong the operation and thereby add to the immediate mortality by searching for enlarged glands when they do not present themselves in the field of operation.

In the removal of the parametric tissue, Wertheim attaches great practical importance to the use of clamps having a short jaw and a turned up nose. By the use of these much bleeding is prevented, and the tissue is tied off and removed in a leisurely thorough manner.

Their use enables the operator to do a more thorough operation in a shorter time; with less possible loss of blood, which at times may be embarrassing in the region of the uterine venous plexus.

THE URETER AND ITS SEPARATION.

The isolation of the ureter where it passes through the parametric tissue of the broad ligament to its entrance to the bladder, is a step towards permitting the operator to widely remove the adjoining tissue. The isolation itself does not add to the life saving power of the operation, but the wide removal of the surrounding tissue is the crux of the operation.

Wertheim in his first 227 cases followed the plan of dividing the peritoneum over the division of the iliacs, locating the ureter in the connective tissue, and following it up to the broad ligament. In this procedure a greater portion of the ureter is exposed and the possibility of injuring and disturbing its surrounding sheath of nutrient blood vessels is increased, favoring its

necrosis, a possibility always necessary to bear in mind.

In the last 273 cases, he has adopted the suggestion of Bumm, that of tying off the infundibulo pelvic, and round ligaments, and after separating and pushing down the bladder to a moderate extent, both layers of the broad ligament are widely separated.



PLATE II. (after Wertheim)—Showing the uterine artery of one side tied off well to the side, and the ureter isolated up to its entrance in the bladder.

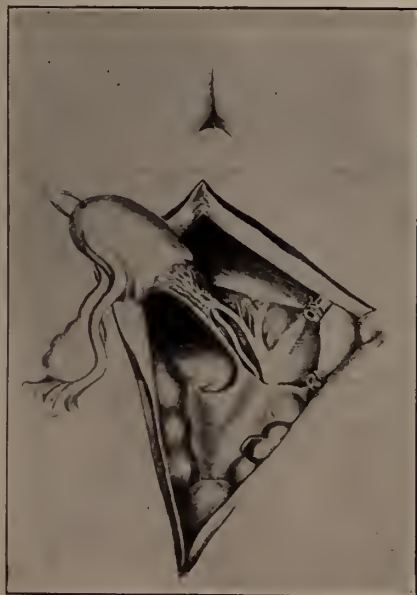


PLATE I. (after Wertheim)—Showing the infundibulo pelvic and round ligament tied off on one side, the folds of the broad ligament separated and the ureter located with the overlying uterine artery.

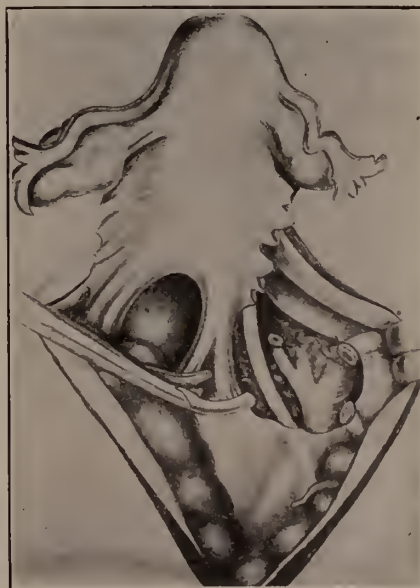


PLATE III. (after Wertheim)—Showing the utero sacral ligament of one side clamped off close to the pelvic wall.

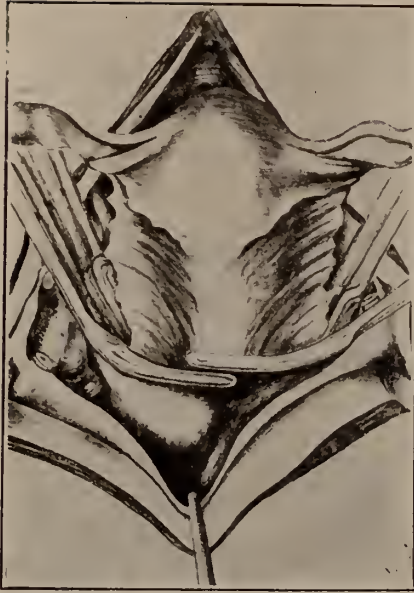


PLATE IV. (after Wertheim)—Showing both ureters isolated, the bladder pushed down for one inch below the diseased area, clamps applied to vagina and parametric tissue.



PLATE V. (after Wertheim)—Showing the cut edge of the vaginal tube and clamps on utero sacral ligaments and parametric tissue. The use of these clamps is of much advantage in the removal of the parametrium and avoiding hemorrhage.

In the posterior part of the connective tissue, between these layers, the ureter is located either by dissection with the fingers, or better, the use of blunt pointed scissors, which when inserted in the loose connective tissue and opened, have admirable dissecting powers. The ureter being located, the finger is pushed along it as a guide, and brought out on the bladder side of the broad

ligament; above the finger is the broad ligament with loose connective tissue and the uterine artery. The artery is divided well to the side of the pelvis, and the separation of the ureter is continued to its entrance in the bladder, care being exercised to handle it as lightly as possible, and to disturb as little as possible its nutrient sheath, the importance of which has been so well brought out by Sampson.

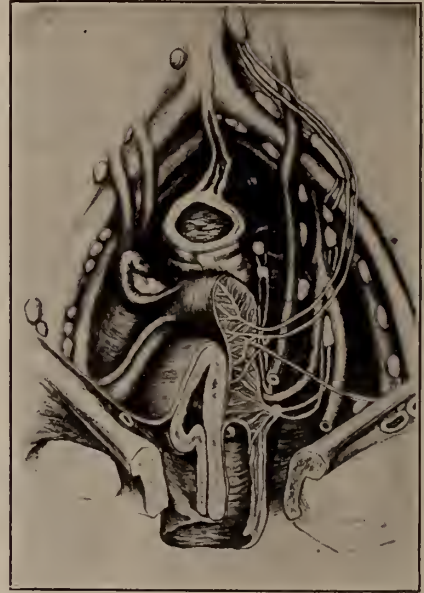


PLATE VI. (after Becker)—Showing the distribution of the lymphatic nodes and the futility of attempting a complete gland removal.

PELVIC WOUND AND ITS CARE.

The condition confronting us in cancer of the uterus is a suppurating discharging surface, almost impossible to render sterile. It has been shown by Frome and others that streptococci are present in the parametric tissue and the regional lymph glands.

With this knowledge we are guided in the treatment of the raw surface exposed after the removal of the uterus with its attached parts. Wertheim in all of his 500 reported cases, closes the peritoneum above, and introduces gauze drainage in the underlying space, which extends to the vagina. He exercises care to so place this gauze that it does not come in contact with the exposed uterus for fear of infection or pressure and subsequent necrosis.

Viet, in spite of the proven presence of streptococci, claimed that they were not virulent, and that the danger from the possible infection of the ureter by contact with the gauze drainage was greater than that of the retained secretions. He therefore closed the vault of the vagina.

Bumm followed the same plan as that of Viet until 1907, when his plan of procedure was changed on account of the investigations of Liepman, who found that the streptococci found in

the parametrium were of a dangerous character. After this demonstration he stitched the peritoneum above to the cut edges of the vagina below, and filled the pelvic cavity with a large gauze drain sufficient in size to coapt the surface of the peritoneum to the underlying raw surfaces. His death rate at once fell from 35 per cent. to 5 per cent.

Viet at once adopted Bumm's method, with the exception of leaving the edges of the peritoneum in apposition with that of the vagina unstitched on each side, to avoid the possible accumulation of secretions around the ureters. Wertheim claims that he sees no advantage in these procedures over that of his own, and points to the fact that he has lately had an unbroken series of 28 recoveries.

The urgent necessity of a united effort on the part of every medical society to educate the people in the earliest signs of cancer of the uterus, is most pressing.

The general physician, as the guardian of the public health, is neglecting his duty in not educating his community to seek his aid on the first evidence of any unusual uterine discharge whether of blood or mucus. He is neglecting his duty when such aid is sought, if he does not insist on an examination; and if the discharges come from the inside of the uterus, to prove their character by the curette and the microscope. We, as specialists, are neglecting our duty in not preaching from the housetops at every opportunity, the absolute necessity of such investigations, and that the time has come (it never existed) when the friendly pat and the powder for a douche ceases to fulfill the obligations of the advisor.

In 1911 twelve hundred women died in New York State from cancer of the uterus. How many of these could have been saved if they had been taught that the first signs meant that something was wrong; that it might be cancer and that their hope was in the earliest possible determination and operation if needed.

Such a policy of education has been instituted abroad chiefly through the efforts of Winter and Dödelein, and as a result the number of patients who can be benefitted by operation has been steadily increased.

In the review of the recent literature, we find that of all the uterine cancer cases applying to:

Von Franque's clinic 33.8% were operable.

Zweifel's	"	65.7%	"	"
Hofmeier's	"	52.2%	"	"
Bumm's Halle	"	80. %	"	"
" Berlin	"	65. %	"	"
Sellheim's	"	72. %	"	"
Henkel's	"	75. %	"	"
Schauta's	"	59.5%	"	"
Wertheim's	"	50. %	"	"

Average, 60. %

No clinic in America can show such a high percentage of operable cases.

Peterson states that his own is 31.7 per cent.

Education alone can raise this percentage and it is our duty to be the teachers.

Discussion.

DR. JOHN A. SAMPSON, Albany: In the consideration of uterine cancer, we must recognize two distinct varieties: first, that which arises in the body of the uterus, and, second, that which arises in the cervix.

Cancer of the body of the uterus is relatively infrequent, occurs as often in nulliparous as parous women, and the average age of the patients is greater than in cancer of the cervix. Its growth is usually slow and it remains restricted to the uterus for a relatively long period of time. For the latter reasons the diagnosis is usually made while it is limited to the uterus, and hysterectomy, vaginal or abdominal, for this condition is attended with a low primary mortality and a high percentage of cures. Cancer of the cervix is eight or ten times as frequent as cancer of the body, it usually occurs in parous women and is more often a disease of middle life (or even youth) than of old age. Its growth is often rapid, and it soon extends beyond the uterus by the direct invasion of the structures about the cervix and by metastases to the lymphatics of the pelvis and lower abdomen. Its frequency, virulence, the youthful age of many of its victims, and the fact that they usually have children, makes it one of the most dreaded diseases and one of the most important problems confronting the medical profession at the present time. In a large percentage of the cases the condition is detected too late for anything but palliative treatment, and hysterectomy it attended with a high primary mortality and a very small percentage of cures.

An attempt has been made in recent years to more successfully deal with this condition by more extensive operations, and also by emphasizing the importance of an earlier diagnosis. By the more extensive abdominal operations, a wider excision of the tissues about the cervix is accomplished, and at the same time the regional pelvic lymph nodes may be removed. In addition more advanced cases may be operated upon than by the previous methods. This operation has been attended with a higher primary mortality than the previous ones. This has deterred many from employing it, and has caused unjust criticisms against it. We must not lose sight of certain facts concerning the treatment of cancer. It is not so much the low operative mortality as it is the percentage of cures, not only of the favorable cases, but of the unfavorable ones as well. A slight operation with very little risk rarely cures cancer, and if we operate only on the very favorable cases we will fail to relieve some that may be cured. It is also unwise to

do an extensive operation attended with great risk unless we can hope to remove the entire growth. With experience the mortality of this operation has become less, and we are learning what cases we may hope to cure and what ones had better not be operated upon. The radical operation in the favorable cases is attended with a low primary mortality—in my experience almost as low as the usual panhysterectomy—and the high (appalling) mortality occurs in the borderline or unfavorable growths which could not have been removed by the previous operations, and, therefore, these patients would surely have died from cancer, and yet some of these we are able to cure by the present methods.

The material obtained from the radical operations has been of great value, for it has enabled us to study more exactly the extent of the disease in that most important group of cases, namely, those we may hope to cure. The study of this material, from many sources, has shown that the tissues adjacent to the uterus are invaded by cancer in at least one-half of the operable cases. This tissue could not have been removed by the usual abdominal or vaginal hysterectomy. This fact alone indicates the need of a more radical operation. We have also found that metastases are present in the pelvic lymphatics in about one-third of the operable cases, and these can only be removed by this operation. We have learned some of the limitations of the operation, especially in regard to the removal of the pelvic and abdominal lymphatics. It is impossible to remove all the pelvic and abdominal lymph nodes which may be infected with metastases and, therefore, at best we must be satisfied with an incomplete operation. Here, as in other parts of the body, we find the wider the excision of the tissues infected by cancer, the better the chance of curing the patient.

Clinical experience and laboratory findings have emphasized the importance of a radical operation, but they emphasize still more strongly the importance of an earlier diagnosis. In a previous communication (*Journal American Medical Association*, January 14, 1911), I stated that in the study of forty-one operative cases there was a history of neglected uterine bleeding of over six months duration in over half of them. Yet these patients seldom live over three years, three-quarters of them die within two years and one-third within one year after the disease first manifests itself.

The medical profession, and especially the family physician, are responsible for the welfare of our patients and their knowledge of medical subjects, and we should obtain their co-operation by instructing them as to the significance of certain symptoms referable to the pelvic organs. The most important of all these is uterine bleeding, and especially when slight, inconstant and painless, the one type which women and physi-

cians are so apt to neglect, and the very type which beginning uterine cancer often causes.

My early experience with this operation occurred in the clinic of Dr. Howard A. Kelly, at the Johns Hopkins Hospital in Baltimore, Maryland, and the cases which I operated on there through his courtesy belonged to the records of that clinic. Since leaving Baltimore in the spring of 1905, I have operated upon twenty-four patients with cancer of the uterine cervix by a modified Wertheim operation. Some of the pelvic lymph nodes were removed in eleven cases and metastases were found in one or more of these in seven. Five died as the result of the operation, and four of these were advanced cases; in one the trigonum of the bladder and lower portion of both ureters were excised, in another a portion of the bladder, in another a portion of the right external iliac vein, and the fourth several large cancerous pelvic and abdominal lymph nodes. The fifth patient was in a feeble condition at the time of the operation. Not a single fatality occurred in a favorable case. Eight patients were operated upon over five years ago. Of these two died as the result of the operation and two have since died from recurrence. Four of the eight are at present clinically free from cancer, and two of these were advised not to be operated upon by others, as their condition was considered by them to be "inoperable." In one of these a metastasis was found in one of the pelvic lymph nodes removed.

DR. WILLIS E. FORD, Utica: This cancer question is such a large one, that one can say very little about it in the five minutes' time allotted to him. It is much larger than tuberculosis. It is a question which has passed into the hands of the newspaper and the laymen, and it is one that is much bigger than any question before us, so that any discussion of any phase of it, either clinically or from the operative standpoint, is of interest.

When we think that there are twenty thousand people with it in the State of New York, and that one-fourth of all women who have cancer have cancer of the uterus, it is an appalling thing. I may say that I live in what is known as the cancer belt—Utica, a city east of Buffalo, and north from Madison county—in which we have an enormous number of cases of cancer. I heard these papers of Clark and Ries wherein it was stated that it took them two or three or four hours to do their operations. At that time, it was said by other men that their mortality was unjustifiably high. We have got new notions of cancer as the result of operations upon the breast. I have believed that cancer is a local disease, and that if you got all of the glands in the region out you were practically sure that the patient would not have a recurrence of the disease; but we do have metastases, as well as recurrences. We have metastases in the pleura after the glands have been removed dur-

ing an extensive operation for cancer, and even after extensive dissection of tissue the cancer cells stay in the small glands and cannot be distinguished at the time of the operation. I agree with those who say that the glands ought to be removed, but I do not believe it is justifiable where the uterus is fixed and there is an exudate in the broad ligaments to continue the operation beyond an hour and a half, or, at least, two or three hours, because our experience shows that a prolonged operation causes a good deal of shock, a good deal of debility, and the loss of blood following causes an earlier recurrence and a greater tendency to metastasis than a short, quick operation without the loss of blood. That is especially true in operations for cancer of the breast.

I am one of those who believe that cancer will be found yet to be a blood dyscrasia. After the removal of cancer, to prevent metastasis and to prevent recurrence, I have been using serums of various sorts, and among them the autogenous vaccines or serums. I have had what I consider favorable results from the use of serums, namely, there were no metastases in five or six cases of what we considered inoperable cancer at the time, and we followed these cases up by giving autogenous vaccines. That is about as far as the vaccines have carried me. I believe the autogenous vaccine will demonstrate the question of whether mice have cancer or not from its reaction. I believe vaccine given in a suspected case of cancer will give you a reaction that will show you whether the mouse has cancer or not. In our region we do not prolong the operation in our dissection beyond an hour and a half. I am afraid to carry an operation in a feeble woman too far because her power of resistance is lessened very much. We all know what the power of resistance means. The antibodies that form afterwards and prevent recurrence of cancer are as important to the patient, as that she may get off the operating table alive. I think all of us are doing more and more extensive work in cancer. None of us can say with certainty, however, that after we have removed every gland in the pelvis, where there is an exudate in the broad ligaments, the patient will not have a recurrence.

DR. WILLIAM SEAMAN BAINBRIDGE, New York City: I fully agree with Dr. Broun regarding the radical operation. When cancer is present it must be removed, if this is possible. The Wertheim procedure is an excellent one, and can be performed in a reasonable length of time. I saw at the Brussels Congress two years ago more than two hundred specimens presented by Wertheim, the results of operations to which Dr. Broun referred. I wish also to add my emphasis to Dr. Broun's plea for the early diagnosis of cancer of the uterus.

In order to lessen the proportion of cases of irremovable and inoperable cancer of the uterus, surgeons should endeavor to educate women to

the point of presenting themselves for a thorough and periodic examination. Not only does this apply to married women, especially those who have borne children, and who are nearing the menopause, but it applies also to unmarried women as they advance in years, and particularly when they present symptoms referable to this part of the body. The campaign of education carried on in Germany by Winter, by Dührssen, and others, and in countries by certain committees and societies, is a move in the right direction, and has already been fraught with good results. In Germany the number of women presenting themselves in the advanced and incurable stages of cancer has decreased, and it is to be hoped that the same may soon be said of this and other countries.

As matters now stand, however, a distressingly large number of women reach the advanced stage of malignancy before they seek medical or surgical advice. Unquestionably many of these women are relegated to the category of the "inoperable," when much could yet be done for them in a surgical way, if not to remove the disease, at least to institute measures for the relief of suffering, the lessening of discharge and fetor, and the prolongation of life. Dr. Broun, for example, says that when the glands are involved it is too late to operate. I would modify the term "too late to operate," by saying, "too late in the average case to hope for a permanent cure, but not too late in many instances to operate with distinct benefit to the patient." I have encountered a number of cases in which there was extensive involvement of the glands, with more or less severe hemorrhage, great discharge and intense local suffering, where I have found it possible to accomplish much in a surgical way for the relief of these hopeless, helpless, pitiable creatures. In this class of cases, there are those where arterial ligation, sometimes called the "starvation method," have been found of unquestionable value.

This particular use of the ligature is not new, having been originated by Harvey, shortly after his discovery of the circulation. It has been applied to the uterus, ovaries, testes, spleen, thyroid, tongue, brain, and other parts of the body. The method has been elaborated by Lange (1707), Travers (1809), Fritsch (1885), Baumgartner (1888), Kelly (1893), Pryor (1896), Dawbarn (1903) and others. My own work in this connection has been in the nature of an extension of application and an amplification of technic.

In April, 1911, I published, under the caption "Arterial Ligation for Irremovable Cancer of the Pelvic Organs; Technic Adopted and Amplified," a series of twenty-four cases of advanced, irremovable, yet operable, cancer of the pelvic organs, treated by this method. Barring three patients who died within four days after the operation, and three who were not seen after

their discharge from the hospital, the length of life varied from seven weeks to four years and four months, eight of the twenty-four living eight months. In twenty cases there was improvement of symptoms; in ten of these the growth was apparently retarded, in nine it was doubtful, in fourteen hemorrhage was a marked symptom, and was controlled by ligation.

The technic as now employed included the ligation, in turn, of the internal iliac of each side, the artery being tied in two places high up and crushed between the ligatures; in some instances ligation of the uterine and obturator arteries, if it is possible to go below without getting into cancerous tissue; ligation of the sacra-media, if this is large enough to warrant it, double oophorectomy being uniformly done if possible. The common iliac was ligated on one side in two cases as a matter of emergency.

The advantages of this method are:

1. Controlling hemorrhage. This may be as an immediate life-saving measure; to insure the patient against the dreaded possibility of death from hemorrhage during the course of the disease; or, to render possible further surgical intervention.
 2. Checking extension of the malignant growth by lessening the blood supply to the affected part.
 3. Mitigation of physical pain and mental suffering.
 4. Diminishing absorption of poisonous products, and lessening consequent cachexia.
 5. Facilitating the discharge of pus and necrotic tissue; permitting the application of other surgical and nonsurgical measures.
- It is sometimes possible to do a great deal more surgically than seemed possible before the abdomen was opened and the arteries ligated. It is even possible to extirpate the uterus in cases where such a procedure seemed impossible before laparotomy. Beginning volvulus and other abnormal conditions of the intestine, causing obstruction and other symptoms, may be discovered and corrected upon opening the abdomen for purposes of ligation.
6. Giving a psychic adjuvant to the physical measures employed.

It is to be borne in mind that this particular application of the ligature is not identical with that which has for its purpose merely the control of hemorrhage as a preliminary to hysterectomy or other extensive surgical procedure in the pelvis in so-called operable cases. Nor is it to be inferred that it is to be advocated in all cases of advanced cancer which are no longer amenable

to the usual surgical methods for the removal of cancer of the pelvic organs.

Since the publication above mentioned I have continued to use this method in suitable cases, having a series of 40 to date, and, with a clearer understanding of its indications, I now employ it in earlier conditions than formerly, as well as in the very advanced ones. My results continue to warrant the efficacy of this procedure. It has served to emphasize very strongly in my own mind that there may be a very wide range between the seemingly and the really inoperable cases of cancer. The radical operation, so admirably discussed by Dr. Broun, is, in my judgment, the operation of choice. But I would go a step further than Dr. Broun and urge that even when the glands are enlarged in the pelvis the radical operation should be done if the glandular enlargement is not too widely distributed, for many times hyperplasia of the lymphatic nodes is found to be the cause of enlargement without cancerous degeneration.

DR. HOWARD CANNING TAYLOR, New York: The question whether or not we are justified in doing an extremely radical operation depends on the primary mortality. That the ultimate result is better has been proven beyond any question. In the early cases, I agree with Dr. Broun and with Dr. Sampson, that the primary mortality with a radical operation, should not be much greater than after an ordinary abdominal hysterectomy for cancer. It is somewhat greater, beyond question, but not a great deal. After the ureters are once exposed and drawn aside, the pelvic connective tissue can be clamped and the uterus removed ordinarily without great difficulty. There is no question that since we began to do the radical abdominal operation, more extensive cases are considered operable than was formerly with the ordinary hysterectomy. The question comes up, whether we are justified or not in operating on these extensive cases, where there is more or less involvement of the broad ligament, a class of cases that most of us a few years ago would have let alone. I think that we are justified for the following reasons:

In the first place, a certain number of these extensive cases can be cured. The number, perhaps, is not large, but a number of cases with diseased glands or with involvement of the broad ligament have been reported as cured beyond the period of five years.

In the second case, if the patient is not cured, the woman's life can be extended beyond the period which it would have lasted had she had no operation.

Another point, and this, I think, is an important one, is that the life, while it lasts is far more pleasant to the patient and to her friends, than

if no operation at all were done. The bleeding is checked, there is no foul discharge, the patient's general condition is better and when the recurrence comes, it is in the abdomen or in some internal organ, and is not associated with the unpleasant features of the carcinoma of the cervix.

During the last few months I have been interested in finding out about the carcinoma work of different men in New York City and Philadelphia. I have sent out 150 or 200 letters, and I have been interested in the returns I have received from these circulars in two ways, namely, the discouraging results, and the absence of statistics. It seems to me, in this question of carcinoma of the uterus there are two things we need. In the first place, we need far better statistics. Clean-cut statements of a few cases like Dr. Sampson gave us, where we have definite positive results, mean more than a larger series of cases, without the end results.

Another thing of great importance in reference to the question of carcinoma of the cervix, and one which has been referred to, is that we should get our cases earlier. In order to do that three things are necessary. In the first place, we need a good deal of campaigning among physicians at large. It seems strange at the present time that any physician should carry a patient along with the early symptoms of carcinoma without immediate examination. A second thing that is very essential is to educate the woman herself. That is being done more or less, but it should be done still more than it is now, and it can be accomplished in several ways. First, by giving lectures to women, and educating trained nurses, who come into closer contact with the women than we do ourselves. We should do a certain amount of writing in the lay journals. For instance, one New York life insurance company publishes a little paper every now and then on the preservation of health and the lives of the people they insure. Such a paper would be a legitimate one in which to publish an article on the early symptoms of carcinoma. I would say that cancer is not absolutely incurable; that it is curable if taken early. I would emphasize the importance of early symptoms, such as irregular bleeding and any change in the discharge. A third thing I would do is to advise all women to have an examination at certain definite intervals. I see no reason why that should not be done.

DR. RALPH WALDO, New York City: I did not come here to discuss this paper, but I think Dr. Broun has presented the subject in a very admirable way, and the clinical results of this extensive Wertheim operation unquestionably justify it. I am thoroughly convinced that in

operating for carcinoma of the uterus, after you have removed the uterus and the parametrium, you have done all that you can do and this is important to impress upon the community.

DR. BROUN (closing the discussion): I wish to thank the members very much for the part they have taken in this discussion. Unquestionably if we can and may remove lymph nodes with perfect safety to the patient, and without any additional risk to her, it would be of advantage. But we are between two fires. Of the 106 cases Wertheim reports, in which there were no recurrences after five years after operation, only five of these were given in which he had removed lymph nodes, and that involved five out of forty-seven in which he had removed them. This means an addition of fifteen or twenty minutes, or thirty minutes sometimes, and that means a great additional risk to the patient. We have to be the judge of the time of the operation, whether to go on or not. On general principles, I think we have done our duty if we do not split up the peritoneum, if we do not search for the lymphnodes, but only remove such as may come into the field of the operation. As for the operation itself, it is a difficult operation; it is an operation that will take an hour and a half to perform, and we should shorten it as much as we can and not extend it, as regarding sterilizing the cervix, we do that before the patient is under the anæsthetic, in order to shorten the time under anæsthesia and to lessen the shock.

With reference to the suggestions made by Dr. Bainbridge. He has suggested the operation of starving inoperable carcinoma, as he seems to have done, and in connection with that of taking out the lymph nodes along the iliacs. I doubt whether anyone but Dr. Bainbridge would claim to do that in thirty-five minutes. It is not simply a question of tying off the vessels, but taking out the glands, sewing up the peritoneum and closing the wound. It means time. If I were asked my choice of the two procedures, I should prefer to recommend the Byrne cautery method. It is known to give good results; it does not cure, but it gives relief when well done, slowly done. The tissues are cooked, and destruction goes on for some distance below the cautery point, which is desirable. The whole key to the situation, I wish to bring out in connection with the operation, is the importance of early diagnosis. It is our duty as specialists to educate the general physician and the public under his care. The fact of the matter is only 25 per cent. of cases can be done anything for in this country, while abroad they have as high as 60 per cent. It is a question of education only, and we can do it in this country, as well as they can abroad.

A PLAN FOR THE BETTERMENT OF THE ECONOMIC CONDITION OF MEDICINE.*

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NEW YORK CITY.

THE necessity for a careful reconsideration of the duties and obligations of the medical profession to the public and the public to the medical profession, is evident from the lack of reciprocal co-operation, and from the need of such co-operation to alleviate the hardships which both have too long endured.

At the present time, even those who are not close observers can readily recognize the wrong in the relation of the profession and the public to their duties and obligations to each other. The public has the right to look to the profession for enlightenment and direction on matters on which the doctor of medicine is an authority.

As far as the medical societies are concerned, they have met the scientific situation successfully; but they have failed on the economic side of medicine which may be called practical medical sociology. The profession has suffered from the want of careful research work in economics, from the lack of such work as has produced the wonderful progress in the science of medicine.

No satisfactory progress can be made until the archaic method of including the economics of medicine as an appendix to the efficient scientific society is discontinued and the profession is made to understand that in the light of modern sociology, there has been no organized direction of the economics of medicine.

Shall we do nothing but wait for the aggressive encroachments of those who would socialize medicine as is foreshadowed in England, or shall we be factors in shaping the course in advance, in preventing offensive legislative enactments and in modifying the crushing effects of our economic folly. It is a well recognized principle in philosophy that an irrational altruism results in an unscrupulous egoism. The shadow of this truth in medicine we believe can be seen by those who look and understand. We see it appear as an able practitioner who does not earn an income consistent with the professional standard of living, resorting to fee splitting; it is shown in questionable lodge and contract practice and other forms of commercialism. The following editorials from the *New York Times* of recent date, may illustrate my meaning of this phase of the economics of medicine.

The first is headed:

"BLACK SHEEP IN THE MEDICAL FOLD.

"Whether or not all of the so-called lodge doctors are as ignorant, and, therefore, as incompetent as they were said to be in the letter from Dr. Chas. Reynolds, printed yesterday is, of

course, a question not to be answered by laymen, perhaps not with absolute certainty by the best informed of professionals. Settlement workers, who have opportunity for studying conditions are agreed that, of the troubles of the poor many of the most serious are due to the failure to receive from lodge doctors whom they so often patronize the advice and treatment needed by their maladies. Deaths and chronic invalidism are the frequent results, and these aggravate the consequences of the poverty that led to the establishment of the system under which the lodge doctor works. Often his ministrations are worse than none. For this evil state of affairs, however, the medical profession as a whole is not without some responsibility. The lodge doctor is a regular graduated and licensed physician, and if he is not worthy of his title in attainments or character or both, the fact must be ascribed in part at least to the failure of his better moralized colleagues to make effective protest against the undue extension of the right to practice. They could do more than anybody else, if they tried, toward clearing their profession of its scandals and its black sheep."

The second editorial is entitled:

"DOCTORS WILL BE DISSATISFIED.

"Evidently impressed by the vehemence and unanimity with which the English doctors have protested against the inadequacy of the remuneration offered them under the new insurance law, the British government has increased its appropriation for medical service for the poor by \$5,000,000 per year. This will enable it to pay the selected physicians \$1.80 annually for each insured person intrusted to their care—a considerable advance from the \$1.44 originally offered, but still below the \$2.04, which is the least for which the doctors have been saying they could, would, or should do this work. Even the largest of the amounts seems absurdly small, but, if received from each of a large number of persons, many of whom would go through the year without requiring any treatment at all, it might be something like a living wage. Our own lodge doctors are content with analogous sums, but they are considered disgraces to their profession and they usually are in more important respects, too, than in the acceptance of small fees. The only reasonable plan for the British government to adopt in carrying out its insurance ideas would be to employ the doctors on fair annual salaries making them public officials, giving all of their time to public service. This is what is done by all countries with respect to army and navy surgeons, and such salaries are accepted by thoroughly efficient men with no loss of professional or personal dignity."

These words are of value in pointing to the necessity of investigating and studying the question in common with other medico-economic questions, in the hope of finding remedies to

* Read before the Medical Society of the County of Kings, at Brooklyn, October 15, 1912, and with additions before six Medical Societies in Greater New York.

better the condition from the united viewpoint of the public and the profession. We can rest assured that both are equally interested in a safe and sane solution of the pressing economic problems of medicine.

The rights of the public and the interest of the profession should be considered in the readjustment of all medico-economic questions; therein the medical profession differs from industrial unions, or organized trusts. Notwithstanding the setbacks in the past the profession is still loyal to its duty to the public and it should be watchful of the duty of the public to the profession. The medical profession in common with other learned professions, has met the tendency of modern times to raise the standard of the educational qualification of professional men, by the adoption, from time to time, of a higher and higher standard of qualification, common to all candidates to be examined for a license to practice medicine in this state. It was natural to believe that it was serving the public by protecting the people of the state from charlatans, quacks and pretenders of all sorts. As a duty of the public to the profession, it expected that the legislature would deny the endorsement of the state, would refuse to license any person as being capable of treating any of the diseases, or abnormalities of the human body, unless such person was able to make a reasonable diagnosis of the human body to do which requires a full knowledge of the science of medicine as taught in the incorporated medical colleges of the state, which includes the use of drugs, the products of the biological laboratory and other valuable therapeutic agents.

The profession received scant consideration from the people's representatives in Albany, though every reasonable argument was made to show the difference between those persons who act within their legal rights when they accept the ignorant advice so freely given on the highways and byways, in the meeting places and in the drug and instrument shops concerning matters medical. In the other class are those persons who are lured and deceived by the state's endorsement to consult uneducated pseudo specialists in eye abnormalities, or those who diagnose and treat contagious and other diseases by manipulation. The license issued prohibits them from using such valuable therapeutic agents as drugs, or to perform surgery with instruments. This is certainly a travesty on the higher education in medicine. The duties of the profession to the public are fixed and have become traditional. There are those in the profession who would like to see the practicing physician return to the honorarium for his services, properly called in modern times, a tip. The physician should be grateful that he is no longer a medical missionary. The benefits which the self-sacrificing, yea, suicidal profession, has conferred upon the public, need not be mentioned to an audience like this.

They are too well known; but they serve to point out to the profession the neglect of its duty and responsibility in guiding and directing public opinion on the economics of medicine. The duty of the profession to the practicing physician is strong on its negative side, its neglect. It has done nothing to stop the growth of that cancer in the vitals of the practicing physician known as the abuse of medical charity in the hospitals and dispensaries. The profession can stop it. It can make the managers of hospitals and dispensaries stop it; but it must be done through co-operation and loyalty between the profession and the practicing physician which the present medical organization fails, utterly fails to accomplish. Loyalty of the practitioner will be secured if the work of the profession is directed to improving the economic condition of the practicing physician, helping him to fittingly establish himself through post-graduate instruction, teaching him the principles and practice of honorable business, and lessening his unjust and dishonorable competition. The relation of the practicing physician to the profession is too often characterized by indifference and disloyalty, as is shown by the medical staff or board of an institution which has resigned as a protest against some stinging insult on the part of the management. The insolent manner of the trustees is often due to the knowledge that the places can be filled with good physicians, subject only to the delay caused by the great number of applicants for the vacant places. The men who resign the places often bewail the disloyalty of physicians to the profession. They make no mention of the little effort that is made by the profession to entitle it to the loyalty of the practitioner. Some of the more pressing economic problems that need consideration and action on the part of the united medical profession, organized to effect the reforms it advocates, may be stated as the extension of Board of Health work so as to include the practice of medicine; to the neglect of general sanitation; the inspection of foods, and drugs, below standard, or adulterated; the overtrained nurse taking positions of medical men in defiance of the medical law; fee splitting, and contract practice in so far as it brings discredit on the profession, and practices deceit upon the public. Pseudo-specialists already licensed should be held up to a proper standard of professional conduct or that law should be repealed on account of fraudulent advertising. The abuse of medical charity in the hospitals and dispensaries, which pauperizes and demoralizes, and is a destructive and unjust competition with the legitimate practice of medicine; and many other pressing economic questions too numerous to mention at this time demand a medical society where they can be properly considered and where effective action can be taken. Such a society does not exist in this state to-day. The present scientific organization of the medical profession is prac-

tically perfect and can fulfil the purpose of its objects, namely: the advancement of the science of medicine, the promotion of public health and other altruistic activities and the establishment of good fellowship among its selected members. A scientific society is no place to consider the economic condition of the medical profession that needs to be remedied. Its conclusions are too often immature on account of the short time allowed by the by-laws for such matters and furthermore the society is not organized to effect or bring about the reforms it advocates. The time devoted to the discussion of such questions is considered by many of its members as wasted, and rightly so if judged by results. It seems that no progress or reform can be made in the economic condition of medicine unless the economics and the science of medicine are considered in societies differently organized to meet those separate and distinct needs. The Scientific Society may be considered as central and subjective, the Economic Society as peripheral and objective. Their work starts at opposite ends and moves in opposite directions. Their organization must correspond to their work.

The profession, through the scientific societies of the recognized schools, works for the medical interests of the public altruistically without fear of being misunderstood. But how different it is when the movement is reversed and attention is given to directing the public to work correspondingly for the profession; then we see the advertising quacks and remedy vendors, the food and drug adulterators, and others who should be driven out of their illegitimate business by legislation enacted in the interests of the general public and profession, at work playing the schools against each other and in every other way paralyzing the economic activities of the scientific societies. Such difficulties will be largely avoided in the organization of the new medical society of applied economics, to be started near the people in all the assembly districts of the state. The membership of the scientific society is carefully selected in agreement with the principles of ethics as applied by the society. The membership in the new economic society shall consist of all licensed physicians and will represent the whole profession. All questions of ethics or professional misconduct should be transferred by the new society to the Medical Examining Board and Board of Regents in the interest of the public and the profession.

The equality of members in an economic society as compared with a scientific society will contribute to the loyalty of physicians to each other an essential feature in a society engaged in directing the work of the public for the profession. To that end it is proposed to establish the American Society of Medical Economics, to consist of all the registered practitioners of medicine

of the state without regard to their school of practice. The objects of this society shall be:

I. To survey and study all matters of economics that can be practically applied for the benefit of the public health, the betterment of the economic condition of the practicing physician and of the profession of medicine.

II. To advocate and maintain a high standard of medical education and of professional conduct common to all physicians.

III. To consider and perform the duty of the profession to the public in making use of all proper means to expose, suppress and remedy all forms of quackery or dishonorable practice of medicine.

IV. To aid the constituted authorities in the enforcement of all medical laws and the laws relating to the sale of pure and standard food and drugs and the accurate compounding and dispensing of medicines.

V. To advocate and secure legislation for the suspension or revocation of the license to practice medicine for causes such as insanity or professional misconduct, the decision to be rendered by the Board of Medical Examiners and the Board of Regents.

VI. To aid in the enactment of legislation which shall provide for the revocation of any license to practice medicine or any license issued by the Board of Regents (containing the provision, "not to use drugs" or "The employment of any means other than drugs in the practice"), for causes such as fraudulent advertising or for advertising in a way that is intended to impose upon or deceive ignorant or unsuspecting persons.

VII. To investigate and take appropriate action in regard to the practice of all licensed physicians whether they be members of this society or not in so far as the same reflects unfavorably on the profession or the public.

VIII. To co-operate with other societies with the object of establishing certified pharmacies where prescriptions may be filled with pure and standard drugs as ordered. Illegal counter prescribing to be cared for in the certificate.

IX. To oppose all acts tending to encroach upon the practice of medicine, such as legislative enactments establishing pseudo-specialists in medicine and the extension of the work of the Board of Health along the line of clinics and curative medicine instead of extension along the line of preventive medicine, known as general sanitation, inspection and supervision of food and drugs, especially such as are adulterated, contaminated or below standard, and of quarantine.

X. To organize and carry on a campaign against the abuse of medical charity and to cooperate as far as practical with the trustees of the hospitals and dispensaries and with the State Board of Charities.

XI. To aid all licensed physicians requiring post-graduate instruction to obtain it in the charity hospitals and dispensaries of the state.

XII. To lessen all unjust, illegal and dishonorable competition in the practice of medicine.

The message presented to-night for your discussion is the plan of organization of the American Society of Medical Economics and not the economic questions—these latter must be studied, considered and practically applied by the new society. The following is the plan:

There shall be established by the legally registered practitioners of medicine of each of the one hundred and fifty Assembly districts of the state without regard to their school of practice, an Assembly district branch of the American Society of Medical Economics. The branch shall elect a Board of Control of fifteen members to act as an Executive Committee. The subdivision of an Assembly district (made up of the election districts) shall be looked after by supervisors appointed by the Board of Control of the Assembly District Branch. The duties of the Board of Control and of the supervisors shall be to keep themselves informed and to properly record and index all matters which concern the public health and the interest and honor of the practitioner of medicine as outlined in the objects of the society. Each of the fifty Senate District Branches shall consist of forty-five members, which compose the boards of control of the three constituent Assembly District Branches. It shall elect a Governor, a Deputy-Governor, a Recorder, a Bursar, and eleven members to act with the officers as an Executive Council of Fifteen of the Senate District. It shall also elect three delegates (one from each of its Assembly districts) to the General Assembly of the state. It shall appoint committees to work with the state committees and with the boards of control and the supervisors of its constituent Assembly District Branches. The State Organization shall consist of a General Assembly composed of one hundred and fifty delegates, elected to represent the hundred and fifty Assembly districts of the state, and the Board of Directors, consisting of nine officers and eight chairmen of standing committees.

In order that all matters shall be carefully considered before any action is taken, all orders of the State General Assembly must be approved by a majority of the Governors of the Senate District Branches as provided in the practical referendum. The Senate District Branches may initiate orders which, if approved by the General Assembly of the state, become binding on the society.

The American Society of Medical Economics shall organize a National Council, consisting of the representatives from its Branches in the several States and Territories. It may be necessary for this society to teach the profession and the public that there is a just and honorable compensation for medical services, based upon the responsibility, and especially upon the time given to acquire the necessary skill to be applied to the more or less difficult questions or problems involved in the diagnosis and treatment of the patient modified only by consideration of humanity or charity, and also teach the physicians and the public that the abuse of medical charity is a misdemeanor in this state and that they should cease to be accessories in the hope of creating a public and professional sentiment which will uphold the spirit of the law. This new society will be interested in the economic condition of the practicing physician who should be helped to maintain a professional standard of living consistent with his responsibility to his patients and his guardianship of the honor of the profession.

Since this paper was written the society has been incorporated under the name of American Society of Medical Economics, Inc., and the following Board of Directors, consisting of the officers and chairmen of the standing committees, have been elected:

President—E. Eliot Harris. Vice-Presidents—Algernon T. Bristow, William F. Campbell, Smith Ely Jelliffe, Thomas F. Reilly, Theodore K. Tuthill. Secretary—S. Dana Hubbard. Treasurer—Royal S. Copeland. Historian—William J. Cruikshank. Counsel—Atwater & Cruikshank. Chairmen of Standing Committees: General Economics—L. Pierce Clark. Professional Conduct—J. Richard Kevin. Medical Charities—William S. Thomas. Education and Statistics—Alfred S. Taylor. Legislation—John E. Wilson. Food, Drugs and Sanitation—S. J. Kopetsky. Ways, Means and Inspection—Russell S. Fowler. Special Business—Irving W. Voorhees.

Discussion.

DR. WILLIAM J. CRUIKSHANK, Brooklyn: A century and a quarter ago, there met in Philadelphia a body of men whose purpose and work were without precedent in history. This was the Constitutional Convention, called together to frame for the United States a government that should advance the public welfare, safeguard liberty, and command the respect of the world. The need was great. Four years had passed since the removal of the common cause and common danger which had made the thirteen states one nation, and now the country was "drifting toward anarchy." Jealousy between states was ruining trade at home; inability to retaliate against trade discrimination on the part of Eng-

land made us the mark of scorn abroad; the country was plunged in financial difficulties, so great that in Massachusetts the distress had caused a rebellion of seven months' duration; the national government could not levy taxes and our credit was gone; we faced what seemed inevitable ruin.

For four months, from May to September, 1787, fifty representatives of thirteen sovereign states debated plans for the establishment of a government that would change this chaotic condition and become a power on the earth. Its sessions were secret, its members bound by a gentleman's agreement not to divulge the proceedings, an agreement so perfectly kept that not until fifty years after were they made public. The names of the men who sat in that convention stir our noblest thoughts, the work they accomplished can only be measured by the achievements of the United States in the past and by the future that awaits us.

With all reverence I point out the analogy. The medical profession, the highest in human service, is itself in a critical period of its history. There is no need to point this out. Every man here is conscious of it, and Dr. E. Eliot Harris has expressed it most ably. Our business methods are so inadequate that our finances are impaired, and our high standing is threatened by the makeshifts of young practitioners to get a bare living and by unprofessional competition everywhere.

The nation's need in 1787 is the need of the medical profession to-day—organization along economic lines. Our present associations are engaged in the solution of scientific problems and they must continue their great work without interference or interruption; therefore the management of the economics of medicine could well be delegated to a body whose purpose would be to promote the welfare of the profession itself—a purpose by no means narrowly selfish, since whatever enhances the value of a profession increases its efficiency. And just as the Federal government conserved the government of the states, taking to itself only such functions as could best be exercised by a central body, so a society for the management and control of medical economics would not weaken nor destroy our existing associations, but would operate to further the good of all. I believe that such a plan as Dr. Harris has outlined would have great results—he calls for a constitutional convention. Let us respond by electing our delegates; let us see that those delegates are our greatest, our best men, our Hamiltons and our Randolphs; and when they frame for us the policy which is deemed best, let us be quick to ratify it that we may realize the full measure of our strength. Just as the elements which made our great nation were present in the chaos that preceded the adoption of the Constitution, so, to-day, the elements are present which can make

the medical profession the greatest force for progress, for humanitarianism, for happiness, that the world has known. With those elements properly assembled, we shall become conscious of our own power and dignity. There is nothing in the realm of our activities that is impossible to us if we but "assert ourselves—rise up to our full height."

DEMENTIA PRAECOX WITHOUT DELUSIONS OR HALLUCINATIONS, A TYPE MOST FREQUENT OUTSIDE OF THE HOSPITAL.*

By GEORGE H. KIRBY, M.D.,

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THIS paper deals with a group of cases in which one finds that there has been a slowly developing and progressive shrinkage in the patient's energy and capacity for work, with loss of interest in the ordinary affairs of life and a pronounced dulling in the emotional sphere so that a condition of more or less pronounced apathy is gradually established, without, however, the patient ever giving expression to any particular trend of ideas, suspicions or delusions, and without the appearance of hallucinations.

This form of deterioration, which corresponds in its essential features to the dementia præcox type, is probably much more common than it is generally recognized to be. Because of the absence of psychotic symptoms, only a small proportion of such cases ever reaches hospitals for the insane. In clinics and dispensaries, however, one meets more cases of this character, especially in youthful individuals who are brought for examination with the history that they have simply lost all interest and ambition and appear to be growing stupid.

Individuals who deteriorate in this manner are undoubtedly to be found in large numbers among the dependent classes of the community. Chronic loafers, beggars, vagrants, poorhouse inmates, and many individuals with reformatory and prison records belong to this class. In well-to-do families such cases are usually provided for at home, being looked upon simply as eccentric personalities, nervous wrecks, etc.

When chronic alcoholism develops in this form of dementia præcox, as it very often does, one is then apt to overlook the fundamental disorder.

Before discussing further these deteriorations, abstracts of a few illustrative case histories will be given.

M. C., a young man of 20, admitted in May, 1910. During boyhood patient was shy, stubborn and unsocial. Because of his distant attitude and lack of affection he never seemed to

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 17, 1912.

find a place in the family circle. He did not seek companions or friends outside of the home. He finished the grammar school at the age of 14. He then entered the high school, where, however, he made a complete failure, and left during the second term.

A decided change had manifested itself in the patient during the last year in the grammar school, that is, in his 14th year. He became more seclusive than before, began to show mean and irritable traits, refused to do errands or help his mother about the house. In the high school he appeared to have lost all interest and ambition, and after he dropped out in his 16th year he remained at home idle and indifferent. He was sent to the George Junior Republic and later to the Rome State Custodial Asylum for the Feeble-Minded. He returned home unimproved and grew steadily more apathetic and peculiar in his behavior. Several positions were obtained for him, but he always gave them up within a few days. He did not worry in the least over his failures. He was self-conscious and clumsy in his movements. It annoyed him if any one looked at him or paid him any special attention. He himself would not look at one directly, but turned his face aside when talking, and "seemed to be only half awake." He never cared to go with the girls. He acknowledged to his brother that he masturbated and admitted that he did this as often as twice a day. The one thing that seemed to interest him was quack medical literature which dealt with masturbation and sexual disorders. He carefully preserved all such pamphlets obtained on the streets, and he was also in the habit of collecting and stuffing in his pockets newspapers, sticks, stones and other trash.

He never expressed any animosity toward anyone, had no suspicions or delusions, and never appeared to be hallucinating.

He was finally committed six years after the beginning of his decline.

During the year and a half that the patient has been in the hospital he has never displayed the slightest interest in anything. He cannot be kept at the simplest kind of work. He sits alone in his room or stands about in an aimless, stupid manner, gazing vacantly, occasionally grinning. Masturbation has been frequently observed.

When interviewed one notices that his demeanor is peculiar. He has a sheepish expression, smiles in a mechanical fashion, frequently gives a suppressed laugh. When his present condition is inquired into, he says that his head feels weak and dizzy and that his mind does not seem to work as it used to do. He attributes his symptoms to masturbation and relates how the habit began during his 14th year, and he thinks that it made him nervous and weak and brought about a failure in his mental power so that he could not learn anything more at school. Later, when he tried to work, he made a failure and was always criticized for being so slow. He seems

to realize that a certain change came over him, and he acknowledges that he felt uneasy and embarrassed when he met people, as he believed that others knew about his habit because of his appearance.

He denies that he ever had any queer thoughts or imaginations; he has never heard any voices, never had any feeling that he was under influence or control. Physical examination negative.

Summary.—We have an individual who in childhood was noticeably deficient in social and altruistic feelings; a seclusive personality without wholesome companionship in the family or outside of it; fairly well endowed intellectually but deficient in application and lacking in interest. In dealing with the sexual instincts of puberty he was apparently without sufficient healthy balancing interests; with excessive masturbation and absorption in sexual topics he lived more and more within himself and deteriorated into a state of grave apathy, showing also constrained behavior, mannerisms, silly smiling and diminished power of attention. No incoherence in the stream of thought. No delusions or hallucinations.

W. O., a young man of 22, admitted May, 1910.

In boyhood the patient was seclusive and stubborn; he never formed strong attachments; even toward his parents he was indifferent. He did poorly at school and the teachers reported that he was dull. As he had myopia it was thought that his eyes accounted for much of his difficulty. Because he began to play truant he was sent to a reform school from 13 to 15. He then went to work. At first he did fairly well and kept a position for a year. Then he began to work irregularly, grew indifferent and finally refused to do anything. He seemed to have lost all interest and energy; he spent much time sitting in the house gazing in an abstracted manner. No delusions or hypochondriacal ideas were expressed at any time. He was committed at the age of 22 because he bought a pistol and talked of suicide.

Here in the hospital he showed no depression, but said that at home he had felt despondent and thought of ending his life. He attributed all of his trouble to masturbation. On the ward he was indolent and seclusive and unconcerned about his commitment. He was very fond of lying on the bed during the day.

Patient talks freely when questioned, his attention is good, and there is no disturbance in the stream of thought. He gives a fairly good account of the development of his trouble. He says that at school he was "dull minded" and inattentive. He also realizes that he had a stubborn disposition, and in this connection remarks: "I had the habit of doing just the opposite; something would turn me contrary to what I was told to do." At the age of 12 he began to masturbate. This was practiced excessively, often

two or three times a day. Sexual thoughts and ruminations, even at this early age, seem to have occupied him considerably. He thinks that masturbation made him shy and gave him a down-cast look. He felt that people could tell from his appearance that he was a masturbator. He thinks that it affected his memory and made him feel stupid. He says that frequently he felt as if his thoughts were not well connected—"sometimes my mind would run straight for a time and then it would branch right off." He never had any feelings of influence or control. No suspicions or delusions. On one occasion for two days, about four years ago, he thought he heard his dead mother whispering to him, saying: "Stop it! Stop it!" This referred to his masturbation. He realizes it was an imagination and has never had any other hallucinations.

At the present time the patient is exceedingly apathetic; has never asked to be released from the hospital; in fact, he seems well content to remain here, and admits that he is lacking in energy and ambition. He shows a rather constrained manner, seems ill at ease when spoken to, and explains that he does not like to look directly at a person. He also speaks of "waves of ambition" which come over him, so that at times he feels better able to work than at others. Recently he has been willing to do some work on the farm.

Summary.—The patient's make-up was plainly of the shut-in type. Stubbornness and absence of strong emotional attachments were also prominent traits. Backwardness at school, partially accounted for by myopia. Masturbation from the age of 12. Gradual deterioration in interests, loss of energy, finally an idle apathetic state. No distortion in the stream of thought. Delusions absent; on one occasion he imagined that he heard his dead mother whisper that he should stop masturbating.

The following case I consider to be one of particular interest and in some respects it differs from the preceding cases. The deterioration in this patient began much later in life in an individual who, although of the shut-in type of make-up, possessed a good amount of energy and ambition, acquired a professional education and was apparently well established in the practice of medicine when an insidious decline commenced and the patient gradually sank into a state of profound apathy.

L. M., admitted March, 1911, a physician, 44 years old. As a youth the patient was studious, bright and ambitious. He was always quiet and less sociable than were his brothers. The usual sports and pastimes of boys did not interest him. He was never known to have a sweetheart. He finished the grammar school at 14, the College of the City of New York at 20, and at the age of 23 received his medical degree. He seems to have had at first considerable success in practice, was a hard worker, and in a few years his annual in-

come amounted to four or five thousand dollars.

The patient was always temperate in the use of alcohol and he had no drug habit. He had few, if any, close friends, and even toward his family he was distant and uncommunicative regarding his personal affairs.

The family is not aware that he ever had any particularly unpleasant experience, serious disappointment or other cause for worry.

The deterioration began when the patient was about 32 years old. He had been established in practice for nine years. Without any known cause the patient's practice began to fall off, and the following year he opened an office further uptown, the object being to get established in a better neighborhood. From this time on, however, there was a progressive decline in the patient's energy; he took less and less interest in his work and became very seclusive and uncommunicative. He began to spend hours sitting in the house absolutely idle, seemingly in deep thought. He changed the location of his office several times, but his practice continued to diminish, and finally when he was 40 years old he closed his office and went to live with his relatives, who thereafter had to support him. He then neglected everything, ceased to give proper attention to his personal appearance, did not keep his body clean, omitted to change his clothing and would not bathe. He was extremely secretive, avoided visitors and friends, never left the house unless it was necessary, and spent many hours daily lying on the bed.

He never developed any suspicions or expressed any delusions; gave no evidence of hallucinations. He was not depressed or hypochondriacal. He did not appear to worry over his failure. Finally the family decided to have him committed because he refused to take care of himself and showed symptoms of such marked deterioration.

On admission to the hospital patient was remarkably indifferent and accepted his detention without any manifestation of emotion. No morbid trend of ideas was elicited; he denied that he had ever experienced any hallucinations. He maintained that he had no trouble or worry of any kind. He admitted that for the past few years he had done no work; said that he had lost his practice and attributed this to the fact that some of his patients had moved from the neighborhood, and subsequently he had been unable to establish himself in a new location.

At the present time the patient is profoundly apathetic. He never evinces the least interest in anything. He spends the entire day sitting quietly in a chair, gazing vacantly, never moving unless it is necessary, never speaking spontaneously. He is unmindful of his personal appearance and fails to keep his clothing clean.

When questioned, he claims to feel perfectly well, both mentally and physically. He has no complaints to make and says he has nothing to

worry about. He denies that he is indifferent or that he is lacking in interest or ambition, and he frequently reiterates the following phrase: "I am ready and anxious to take up active practice." He gives trivial reasons for his present idleness. He says, for instance, in explanation for his inactivity: "I don't like to bother anybody." He thinks that in a place like this it is best to sit quietly and alone. As an excuse for his seclusiveness he says: "I am a doctor and accustomed to be alone. I never mingled much in society." As to his untidy personal appearance, he maintains that he dresses as neatly as he can under the circumstances.

No suspicions, ideas of reference or delusions of any kind can be elicited. He denies that he has ever had any hallucinations and nothing has been observed in his conduct to suggest their presence. Although he claims that there was no cause for his being sent to the hospital, he feels no resentment against anyone, makes no protest, and has never made the slightest effort to gain his release. When surprise is expressed at his complacent attitude, he simply remarks: "I try to make the best of conditions." As to the causes for his failure in practice, he says it was due to the fact that some of his patients moved away, but he attributes it mostly to the fact that he changed the location of his office and failed to get established in the new neighborhood. He will not admit that there was any diminution in his energy or interests to account for his failure. He was less active only because he had fewer patients. He does not show the least concern over the past and has no plans for the future.

In regard to his sexual life, patient denies that he ever masturbated or that he ever had any sexual intercourse. He claims that he was never attentive to any woman and never thought of getting married. When asked if his indifference in this direction was not unusual, he replied: "I was too busy with my practice."

There is no impairment in the patient's orientation or memory. He gives dates accurately, does calculations correctly, his writing shows no defect, spelling is good. There are no physical symptoms suggestive of an organic disorder. Lumbar puncture negative.

Summary.—The patient from early youth presented many signs of a seclusive personality. He was, however, ambitious and energetic and later his professional work served to bring about considerable contact with the external world. As to his inner mental life we know little; the patient claims there is nothing to reveal. He appeared always sexually indifferent; denies masturbation. A falling off of interest and energy began at about the age of 32; the shut-in tendency became markedly accentuated; the patient gradually severed all connection with the outside world and settled into a secluded, apathetic existence without ever giving utterance to any trend of delusions. The personality remains well preserved;

there is no oddity in behavior and no thought distortion.

These cases will suffice to show the main characteristics of this form of simple deterioration.

The outstanding features in this group of cases appear to be the following:

The appearance in childhood of signs of a shut-in type of personality. This is probably a very deeply rooted tendency and has much to do with later developments. In fact, what we call the deterioration in these cases is, in its broadest aspect, nothing more than "a growing inward," a tendency to ignore the external world, a living apart without further interests in the affairs of life.

Standing in close relation to this shut-in disposition is the difficulty in sexual adaptation, the autoerotic traits appearing early, and masturbation becoming a fixed habit. The deterioration seems to begin in most cases at about the age of puberty when the difficulties in dealing with the sexual instinct are most acute. The decline may, however, begin much later, as is illustrated by the case of the physician. We have been impressed by the observation that in these cases, even after many years' duration, the personality remains well preserved, and in no case have we found incoherence in thought, peculiarities of language, neologisms, etc., which so often mark the dementia praecox cases. A question of some interest is, therefore, whether or not the absence of a trend has anything to do with the absence of distortion of thought.

These deteriorations without trends are of special interest in connection with the psychogenic theory of the development of dementia praecox. In cases of dementia praecox by analysis of the delusions, hallucinations and peculiar behavior, it becomes possible to trace the symptoms back to certain underlying complexes which appear to be factors of dynamic importance in the development of the mental disorder. These complexes account for most of the symptoms and always determine the main trends in the psychosis. It is not claimed that complexes are essential causes of the disease, but they evidently belong to the etiological constellation in which make-up and mental habits also play an important rôle. That all symptoms of a complex reaction may be absent is shown by the occurrence of these trendless deteriorations. The psychological analysis of cases of dementia praecox leads us to look upon the psychosis as an attempt at a readjustment, the patient reaching out, as it were, to find some sort of satisfaction or compromise for the conflicts with which the personality has to deal; hence we find in the delusions and hallucinations wish fulfilments, compensations, defense reactions, etc. These deteriorations without trends, as suggested by Dr. Hoch, differ from the other forms of dementia praecox in that there is no evidence of any such effort at readjustment.

Dr. Meyer in his dynamic interpretation of de-

mentia præcox has emphasized the fundamental importance of the early manifestations of deficiencies in the instinctive life, faulty mental habits and certain tendencies of the personality which put the individual at a great disadvantage and make a smooth adaptation to the demands of life difficult, if not impossible. In other words, one finds in the original endowment lack of sound instincts in one or more directions, tendencies to develop unhealthy attitudes and habits, which, if unchecked, lead quite naturally to disastrous results. These simple deteriorations, illustrate well this psycho-biological conception of dementia præcox.

The points which have interested us most in the study of these cases are the following:

1. We would like to know more about the extent of this form of deterioration in a community generally. Dementia præcox of this type may be much more prevalent than we are aware of because most of the cases are likely to remain outside of the hospital. The recognition and further investigation of these cases is of practical importance, as many children who fail at school or who "break down" at about the age of puberty belong in this group; among abnormal characters and the dependent classes generally many cases of this kind of deterioration are probably to be found.

2. In the clinical analysis of these cases we find no indication of the mechanisms usually found in dementia præcox, and therefore absence of all symptoms and trends which ordinarily come about in reaction to disturbing complexes. These cases serve to emphasize the fundamental defects in make-up and faulty mental habits as the chief factors in bringing about the deterioration. Above all there stands out the tendency to live a shut-in existence with inadequate sexual adaptation.

THE PROBLEM OF TOXIC-INFECTIOUS PSYCHOSES.*

By AUGUST HOCH, M.D.,

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THE demarcation of the symptomatology produced by toxic-infectious causes is still a problem which presents considerable difficulty. Among the best contributions to this subject, contributions which really furnish some help, I would mention the work of Bonhoeffer on alcoholic psychoses,¹ and his more recent work on symptomatic psychoses,² as well as the work of Bleuler on dementia præcox,³ in which the subject of toxic-infectious disorders is often touched. In the following I desire to give a brief survey

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 17, 1912.

¹ Bonhoeffer, Die akuten Geistesstörungen der Gewohnheitsrinker. Jena, 1901.

² Bonhoeffer, Die symptomatischen Psychosen im Gefolge von akuten Infektionen und inneren Erkrankungen. Franz Deuticke, 1910.

³ Bleuler, Dementia Præcox oder Gruppe der Schizophrenien. Franz Deuticke, 1911.

of the field and to bring out certain points which may contribute a little towards a clearer formulation of this problem.

We must assume that, like every other functional mechanism, the mind can respond to influences which disorder its functions only by certain reactions, and probably these reactions are limited in number. So far as we can see at present, there are chiefly three types, which we may call (1) the organic reactions, (2) the affective reactions, and (3) what may be termed the trend reactions.

The organic reactions are characterized essentially by a diffuse defect of memory; retention, apprehension, or, to put it briefly, by a diffuse disorder of activation of memories. The affective reactions are characterized by disorders, also diffuse, which follow essentially the lines of the affective states of the normal; while the trend reactions are those in which Freudian mechanisms are uppermost, and in which the disorders are therefore often more topical than diffuse.

Bleuler, in his recent book, though he does not state the situation in the same way as we have done just now, is evidently guided by somewhat similar principles, for to him manic-depressive insanity is represented only by the purely affective mechanisms; in his huge group of dementia præcox are contained cases in which trend mechanisms play the important part, although with his conception of a primary disease process in dementia præcox he includes also much more. But his excellent symptom-analysis has shown, at any rate, that most of the active symptoms are explicable on the ground of such mechanisms. Finally, Bleuler has also shown, more clearly than any one else and more in detail, how fundamentally different are the organic mechanisms from those of dementia præcox or manic-depressive insanity.

What we call mental *diseases* need not, of course, coincide with such reactions; when we speak of manic-depressive insanity, dementia præcox, hysteria, epileptic insanity, general paralysis, etc., we have to expect that various other factors enter into the formation of the resultant clinical picture, such as the make-up, the etiology, perhaps secondary phenomena, etc., and that we will find only in a limited number of cases pure reactions. Interesting as it would be to deal with this question in a broad way, we have to pass to the subject in hand, namely, to the toxic-infectious disorders, and ask ourselves which of these reactions may be called forth by toxic or infectious causes.

In order to appreciate the wide possibilities we must call attention to the fact that we find, to take some special samples, Korsakoff's syndrome, pure manic-depressive pictures, but also conditions which resemble dementia præcox; in other words, typical organic reactions, affective reactions, and trend reactions.

Now, we do not call all such types toxic-infectious psychoses; *e.g.*, a pure manic picture, even when produced by a toxic etiology, would usually not be thus diagnosticated. Nevertheless, we cannot doubt the influence of the toxic etiology. On the other hand, there are other psychoses which we do not hesitate as a rule to group as toxic-infectious psychoses. These are the Korsakoff syndromes, the deliria, and states which in some ways resemble the deliria (of these we shall speak more at length presently) but which also show marked differences from them, and which are sometimes termed amentia; and finally, we have the hallucinoses. It is these conditions which we now have to deal with a little more at length.

What is delirium?

Kraepelin speaks of clouding of consciousness, incoherence, and hallucinations, and gives thus expression to the usual conception, or rather, description. As conditions in which deliria occur he mentions toxic states, organic disorders, manic-depressive insanity, and hysteria. It is obvious that here clinical pictures and mechanisms are put together which probably differ fundamentally among each other. But we may pick out among these a fairly well characterized one, namely, that which is represented by the alcoholic, the fever, and the drug deliria, the latter term being used in the sense in which I used it some years ago in describing delirious states produced by various combinations of drugs. According to Bonhoeffer, the essential alterations in these deliria are a weakness of the train of thought, which gets lost in side association, this leading to defective combination of the data of the environment, to this are added retention and attention disorders. Bleuler describes similarly the primary defect, in conditions of this sort, as one in the faculty to combine sense impressions, associated with non-perception of many sense impressions and their falsifications, in the direction of illusions. These are, of course, essentially descriptions.

It seems to me that the close relationship which especially the alcoholic deliria bear to the Korsakoff psychosis and its analogy or resemblance to the Korsakoff psychosis, points the way to a somewhat better understanding of these deliria. It seems that, as is the case in organic reactions, here, too, the understanding of the environment, that is to say, the orientation, and the train of thought are disordered, because apprehension and train of thought require ready activation of many associations. For the train of thought this is clear enough; for the apprehension or orientation it needs some explanation. When I see an object, or find myself in a certain situation, all that is associated in my mind with the data thus perceived must in some way be aroused (to be sure, not necessarily consciously) before an understanding of the object or the sit-

uation can take place. In profound cerebral atrophy of general paralysis, or senile or arteriosclerotic dementia, in which there is a fading of many memories, we find that the concepts, the train of thought, and the understanding of the environment suffer gravely, because, as we have said, the extensive arousing of associations no longer takes place. I take it that a somewhat similar condition occurs in Korsakoff psychosis. Now, in the deliria of the type just described, it would seem that we are dealing with something of the same sort, but the disorder here is acute and recoverable, and in harmony with its transient nature, it is represented more by a weakness than an actual loss, so that by attracting the patient's attention an improvement in the mental activity can be brought about, while if left to himself the patient's train of thought becomes more fragmentary and his apprehension more faulty. This leads to the variations in the level of consciousness, as we might call it, which are so characteristic of these deliria. With this conception, therefore, we regard this type of delirium, or, at any rate, the most important part of its mechanism, as closely related to the organic reactions, very much as we would certain forms of stupor which, however, for the sake of brevity, I shall here leave out of consideration.

These deliria, to describe them once more, are then characterized by complete disorientation, by variations in the level of consciousness, by incoherence, by a speech defect which resembles, but is much more marked than, that of fatigue and shows itself by slurring, as well as by verbal and, more particularly, literal paraphasia, the speech and incoherence varying with the level of consciousness. If we add to this, the diffuse retention defect which Bonhoeffer claims to exist in such conditions, we have all the more reason to approach them to the organic reactions and to speak of them as *organic deliria*.

But we also speak of other conditions as psychogenic deliria, and it will be necessary to characterize these. They evidently represent quite a different type of reaction. Bleuler has formulated the mechanisms of these states very clearly and, as I believe, correctly. According to him, they occur notably in hysteria and dementia praecox. In them we find, in the center of the reaction, so to speak, a realization of a wish, more or less symbolic, of course, with a more or less complete splitting off of the rest of the personality, or more or less complete exclusion of the outside world, or falsification of the reality in harmony with the main trend.

Hallucinations and delusions are, of course, present in both the organic and psychogenic deliria, and therefore, superficially, the resemblance may be considerable. It would lead me too far to speak of the clinical differentiation, but I do not think that there can be much doubt as to the essential difference in the mechanisms of the two.

We have seen that the organic delirium oc-

curs in alcohol and in certain drug conditions. Probably it also occurs in uremia, but according to Bonhoeffer, it seems that in the infectious diseases it occurs only during the febrile period, that is, during the height of the disease, whereas during the period of defervescence these organic deliria are rarely seen. But what is found then, and what makes up the largest contingent of the toxic-infectious psychoses which we find in the ordinary psychiatric hospital, are what we might call, for want of a better term, amentias. I am quite well aware of the fact that this is a much abused term, but I do not see why it should not serve to characterize these cases which, while bearing certain resemblance to the organic deliria, are yet in many ways different from them and the clinical picture is less simple. To judge from what I can gather from Bonhoeffer's book, and from my own clinical experience, I would say that these conditions differ clinically from the organic deliria, in the following ways: In the first place, the patients are often less accessible, more difficult to examine, the orientation or disorientation harder to determine, but evidently it is not infrequently less disordered than in the typical organic deliria. The variations in the level of consciousness do not occur; the speech defect is not pronounced, or, as a rule, entirely absent; the incoherence is more permanent, and, if anything, more marked; the content of the psychosis is apt to be less simple than in the alcoholic deliria, for example; manic features often occur, in the sense of flight of ideas with many sound associations and distractibility; the mood varies, but I am not certain that anything very definite can be said about differences there. Bonhoeffer states that the acts of such cases are not simply in harmony with the hallucinations of the moment, but are much more like those of katatonic patients. Negativism, stereotypies, verbigeration, etc., are prominent, so much so that no active symptom which occurs in dementia præcox cannot be seen here also, and as a matter of fact, the differential diagnosis may be very difficult, or only possible on the ground of etiology and onset or outcome, and it is for this reason that Bleuler unhesitatingly puts many of these cases with his group of schizophrenia. But the cases usually get well, and get well in a comparatively short time. Therefore, we have a picture which differs from the organic delirium and contains many features which we know to exist in purely endogenous disorders, in which a toxic etiology similar to that in the more typical toxic state is a pure assumption. Nevertheless, the disorientation and the, sometimes very marked, incoherence raise the question whether these traits are not identical with those of the organic deliria, that is to say, whether they are not in the same sense, organic features. This is a question which we cannot settle, but it seems to me that the problem is thus stated; at any rate, these amentias form plainly a much more evident transition to the purely endogenous forms than do the organic deliria.

We have not spoken of the hallucinations, which are evidently a very important feature in the toxic-infectious psychoses. In alcoholic deliria the hallucinations are characterized by their simplicity. They seem to refer essentially to the habitual trains of thought, much as in the case of Korsakoff psychosis, or, as Bonhoeffer has shown in the case of illusions, they often refer to ideas superficially associated with the objects which are falsified in an illusory manner. Other hallucinations are evidently caused by the distortion of entoptic phenomena. Visual and touch hallucinations are much more common than auditory. It has frequently been pointed out that hallucinations of the lower senses, especially bodily hallucinations, do not belong, at any rate, to the picture of the alcoholic delirium, and Bleuler has insisted that in the alcoholic delirium Freudian mechanisms are absent. It is very interesting that in the fever delirium, which in its main structure, as we have seen, is also essentially an organic delirium, we find, so far as the hallucinations and the content of the psychosis are concerned, a different situation. Bonhoeffer, who, on the whole, does not pay much attention to the content, nevertheless speaks of the fact that the content of the fever deliria refers much less to what we above have called the habitual, than is the case of alcoholic deliria, and Bleuler mentions the existence of Freudian mechanisms as prominent in these fever deliria.

I personally have had too little experience with fever deliria to have an opinion. Recently I had occasion to observe an excellent example of a typical organic delirium, in which the content of the psychosis evidently referred to very important matters in the patient's sexual life. We may say, therefore, that in the organic deliria there are often no psychogenic features (the alcoholic deliria, as a rule); again, they are quite marked (the fever deliria). In the cases which we have above referred to as amentias, Freudian mechanisms undoubtedly play a very important role.

The *hallucinosis* has often been regarded as essentially of the same nature as the delirium. Kraepelin, for example, speaks of the possibility of a less intense process; Bonhoeffer, of a different localization. But we know so little of the relation of hallucinosis with anatomical changes, or with localization, that it would seem wiser to consider the clinical facts alone. Here we find that the cases who have hallucinosis show a tendency, when they break down again, to again have hallucinosis rather than deliria. The hallucinosis comes on after less prolonged drinking, sometimes after only a spree, whereas the delirium occurs in chronic drinkers. Chronic psychoses, hallucinatory or paranoid, develop more after hallucinosis than after deliria, though the hallucinosis is then apt to be less simple. But upon what these differences depend we do not know. Cocaine leads more to hallucinosis than to deliria—some poisons produce, in the

clinical picture of a single intoxication, hallucinations; on the other hand, infectious causes rarely produce pure hallucinosis. From this it appears at once that the hallucinosis *does* seem to have a position somewhat independent of the organic deliria. Moreover, we find that a hallucinosis may occur without any toxic etiology, so far as we can tell, and a patient, recently observed at the Institute, very well illustrated the fact that in the same patient it may be produced now by alcohol, now by mental causes, now by exhausting influences. We can, therefore, not deny the fact that the hallucinosis also seems to be more closely related to the endogenous disorders than to the organic reactions.

We may, therefore, say:

(1) That among the psychoses produced by toxic-infectious etiology we have, in the first place, the typical organic reaction in the form of the Korsakoff syndrome, but also conditions which bear a plain relation to these organic reactions and which we have, therefore, called organic deliria. These occur in chronic alcoholism, as a result of large quantities of various drugs, and in infectious diseases at the height of the disease, that is, during the fever. It never occurs without a toxic or other organic etiology. Endogenous features are often not associated with it, but may be, without, however, altering the main features of the clinical picture.

(2) There exist evidently mixtures of this with the states which are to follow.

(3) In the stage of defervescence of infectious conditions, or in less severe toxic-infectious states, a somewhat different clinical picture is observed, in which the exogenous and endogenous features are much more difficult to separate, a picture, however, in which the disorientation and the marked incoherence may be of similar origin as the same symptoms in the organic deliria, but at the same time we must not forget that similar symptoms may occur in purely psychogenic states. We must also remember that the picture, similar to the one we are now speaking of, may arise upon a non-toxic etiology. These conditions are remarkably mixed with manic features and with symptoms often seen in dementia præcox. They represent, therefore, more than the organic deliria, transitions to the more endogenous forms of psychoses.

(4) The hallucinosis, which is very often seen on the basis of a toxic etiology, and which Bleuler's consistency has forced him to regard as in all probability belonging to schizophrenia, is more closely related to the endogenous than to the organic reactions.

(5) Most of the attacks produced by toxic-infectious causes are short in duration. This is most striking in the manic and the dementia præcox-like reactions arising on such a basis.

(6) The toxic-infectious etiology seems, more than any other soil, to lead to a mixture of reactions.

THE HOSPITAL TREATMENT OF COMMUNICABLE DISEASES.*

By WALTER S. GOODALE, M.D.,

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IN view of the fact that the original meaning of the words "infectious" and "contagious" seems to have been lost, it might be well perhaps to adopt the word "communicable" when describing those maladies transmissible by direct or indirect contact. Of the various communicable diseases ordinarily cared for in hospitals, pulmonary tuberculosis, scarlet fever, diphtheria, measles, erysipelas and smallpox are perhaps the most important. Occasionally, whooping cough, chicken pox and mumps patients are admitted but not ordinarily. The above have been named in the order of their real importance to the patient, the public and the attending physician.

If one were to tabulate these disorders, using the popular or even the medical conception of their *apparent* importance, smallpox would easily head the list. The Ordinances of the City of Buffalo, under Chapter 25, Section 18, read in part: "In every case of smallpox the patient shall be removed to the quarantine hospital except when such removal would place the life of the patient in jeopardy, in which case the Health Commissioner may grant a permit for the patient to remain at home upon compliance with such precautions as may be prescribed by said Health Commissioner."

Unfortunately there is no other disease in the category of medicine thus singled out for hospital treatment. Other communities in New York State undoubtedly have similar regulations. If not, the sentiment expressed in the above clearly indicates the average person's mind regarding the treatment of this disease.

The ordinary notion of smallpox is undoubtedly based upon a conception of this disease as it occurred during the middle ages, before the advent of vaccination. At the present writing, it is utterly worthless and absolutely without foundation. At least so far as the United States of America are concerned. During 1911, there were 44 cases of smallpox in the city of Buffalo, an unusually large number, all treated in the Municipal Hospital on Ferry Street. Of these not one died. It might be possible to collect 44 cases of diphtheria, treated under ideal conditions from the beginning, including the early administration of antitoxin, showing this negative death rate. As treated in the average home, however, it would be impossible. Forty-four cases of scarlet fever, on the average, including rich and poor alike, given the best care and treatment possible at this time, would surely yield three or four deaths as the absolute minimum. Forty-four cases of chronic pulmonary tuberculosis would probably return 44 deaths

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within three years. Smallpox from the beginning has instilled a horror into the public mind, not on account of its death rate, but rather because of its possibilities for facial disfigurement. The disease in this country is so mild and comparatively insignificant that few physicians ever have the opportunity of becoming sufficiently proficient to diagnose the disorder. In Buffalo there are not more than one dozen doctors who could differentiate a close case of smallpox and chicken-pox. One case of smallpox introduced into a church congregation on any Sunday morning, would surely cause a stampede if not a riot, while the person responsible for its introduction might call upon himself the sure vengeance of the law. A person suffering with chronic pulmonary tuberculosis, however, would cause little comment. In fact, he would undoubtedly be warmly welcomed by his uninfected neighbor in the same pew. Perhaps each might assist the other by politely moistening the leaves of the same hymn-book with their infected or non-infected finger-tips. Tuberculosis unquestionably stands at the head of the list of communicable diseases demanding hospital treatment for their proper care. This disease differs from the others in one respect, in that it is chronic in its course. It would be a waste of time to enumerate the advantages in treating incipient pulmonary tuberculosis in sanatoria. The necessity for this course is conceded by all. In the case of chronic pulmonary tuberculosis physicians and the public have not yet fully awakened to the fact that a similar procedure is absolutely necessary. Compulsory hospital attendance should be mandatory and not discretionary. One of the most serious objections to the plan is the possibility of pauperizing a large number of apparently self-supporting persons. This is not a real objection when one considers that a so-called self-supporting tuberculosis patient, working in a factory, for instance, might easily during the three or four years of his precarious existence infect hundreds of other persons and ultimately render them unfit to earn a livelihood. The state could well afford to support all tubercular persons without means, and arrange for their employment at light labor under proper conditions. Farming or the manufacture of goods easily disinfected, might solve this problem. Of what practical use is the strict enforcement of the registration law regarding tuberculosis patients and the exact regulating of their lives at home, while shop and factory conditions either go unnoticed or are beyond control.

The hospital treatment of acute communicable diseases presents practically the same aspect as the foregoing chronic malady with the difference that the prognosis is relatively good and the term of treatment a matter of days rather than months or years. The reasons for advocating compulsory institutional treatment of communicable diseases might very conveniently

be grouped as follows, in order of their importance:

- No. 1—Comfort and safety of the patient.
- No. 2—Comfort and safety of the physician.
- No. 3—Economic.
- No. 4—Epidemic control.

Again the writer has dared to question certain classical ideas in medicine. Ordinarily, the first would be last and the last first. Consider for a moment the situation often presented in a four-room apartment, be it a cottage or a tenement. There is the father earning \$12 or \$15 a week, an overworked mother, a couple of working children and two or three school children. One of the latter presents a virulent scarlatinal infection. Temperature 104, pulse and respirations to correspond. Cyanotic skin. Cold extremities and a severe membranous angina. Add to this, occluded nostrils and foul discharges from the nose and throat and the horrible picture is complete. Assuming that the wage-earners of the family have taken themselves off to a place of safety and that the services of a competent physician are at hand, how can this poor mother properly administer to the needs of her child when these same needs often baffle the skill of specially trained nurses and physicians, working amid ideal surroundings and armed with all the medical aids and appliances known to science. If by any chance such a patient does escape the "Grim Destroyer" is it at all strange that the hideous complications of scarlatina should relentlessly pursue the already fever tortured victim. Otitis media, nephritis, suppurative adenitis, gastro-enteritis and a host of other ailments are in constant readiness, under these conditions, to complete the work so well begun when the toxin of a virulent scarlet fever infection grips the intended victim.

The Ernest Wende Hospital of Buffalo, N. Y., since its establishment has treated 1,400 cases of scarlatina. Of this series but one patient treated from the inception of the disease, has died of post-scarlatinal nephritis. To the best of our information and belief we have never discharged a deaf child. With us fatal complications are the exception rather than the rule. The advantages which diphtheria patients treated in institutions enjoy over those cared for at home, are equally apparent, especially in intubated cases. In a hospital the tube patient is properly fed and the tube may be removed, replaced, or re-inserted *ad libitum* at a moment's notice. In the average home, especially during the hours of the night, a tube case may die of asphyxia before the attending physician answers the tinkle of his telephone. Usually a mother will brave almost any danger in order to care for her child, but most women, though willing, are either untrained or improperly equipped. A small percentage absolutely refuse to handle diseases of this character and the mother's duty is delegated to others perhaps

equally fearful. If this is true of the home, what of the hotels, the boarding-houses and the lodging-houses? Unquestionably, the first great benefit derived from the institutional treatment of communicable diseases accrues to the patient himself.

The comfort and safety of the physician is a matter which in the past has received but scant attention. The most unimaginative person that ever lived could easily conjure up a situation, which, contrasted with a doctor cleaning out the throat of a scarlet fever patient under the conditions enumerated above, would vividly bring out the exact difference between that place where his Satanic majesty is ever and anon setting the thermostat a little higher and that other region where a constant attuning of golden harps is the order of the day. The physician who treats acute communicable diseases in the home subjects himself to untold dangers and inconveniences to say nothing of the danger of transmitting the disease to his family and other persons or patients.

The economic value of a hospital for communicable diseases to the average working man has rarely received the attention it deserves.

The Ernest Wende Hospital makes a charge of \$10 per week to pay patients which includes board, room and medical attendance if desired. We defy any person properly to maintain quarantine for such a sum as this. With an isolation hospital at hand the tax-payer may rid himself of doctor's bills, nurse's bills, drug bills and board bills to say nothing of the advantages of uninterrupted labor and freedom on the part of the wage earners of his family.

Where even this small sum is not available, patients in the Ernest Wende Hospital are often committed on a city or county order, reimbursing these officials either wholly or in part or else enjoying the fruits of charity without reserve.

Strange to say, epidemic control is not so powerful a factor in the demand for communicable disease hospitals as one might suppose. The prodromal stage of measles lasts from four to seven days. Smallpox perhaps a week. In scarlet fever and diphtheria this period is undoubtedly shorter, but usually several days elapse before a physician is called and the patient removed from a school or contact with the public. Unquestionably, of the four mentioned, all, excepting perhaps smallpox, are more readily communicated during the prodromal stage than at any other time. Nasal and throat secretions play the leading rôle in the transmission of these diseases.

The common impression that the establishment of a quarantine hospital for acute communicable diseases means the prevention of all future epidemic is erroneous. This is especially true of those communities where commitment to these institutions is not compulsory. This

latter provision, coupled with minute and rigid school inspection would greatly mitigate the evil, but until some means of absolute and early diagnosis in these diseases is available, the relief must be comparatively small. In the case of scarlet fever, institutional control will prevent the infection of large numbers of innocent people through the medium of a pus discharge coming from a person who has finished desquamating and has been released from quarantine officially. On September 1, 1911, the records of the Ernest Wende Hospital showed 22 so-called return cases, which means that this number of patients left the institution after desquamating completely and within ten or fifteen days a brother, sister or some person coming in direct contact with them after their discharge, entered the hospital suffering with scarlatina. Sixteen of the 22 exhibited a pus discharge from nose, throat, gland or other portion of the body on the day of their dismissal. Since these observations were made every effort has been put forth to keep scarlatinal patients under quarantine until all pus discharges have cleared up. Usually we are successful, but there is no ordinance authorizing such a procedure. Space prevents the elaboration of the cases referred to above but they present undisputable evidence that an otitis media or a discharging gland 30 or 40 days old, is perfectly capable of spreading scarlatinal infection. Furthermore, institutions prevent the spread of communicable diseases for the reason that they are properly equipped to thoroughly disinfect the person and belongings of all discharged patients. This procedure as carried out in the average home is nothing short of a joke.

To sum it all up, in the opinion of the writer, all of the communicable diseases enumerated above, including acute and chronic pulmonary tuberculosis should be treated in proper institutions and commitment to the same made mandatory. It necessarily follows that in order to make this procedure popular and practical, every municipality must maintain such an institution in a fitting manner. The building should be of the best, both in architecture and equipment. The grounds ample as well as beautiful and the location accessible. The interior workings of a contagious disease hospital must be made attractive to the public and the physician. In providing good food, and the best nursing and resident medical care obtainable, together with arranging proper diversions for convalescent patients, including suitably controlled visits from parents and friends, the first mentioned condition will have been complied with. The second condition, that of catering to the family physician, can only be met by putting these institutions under the control of the local Department of Health to be governed by a well-equipped superintendent and a sufficient number of well-paid resident physicians

and other employees. The policy of the house must be "wide open" in reference to methods of treatment and the various accepted schools of medicine.

In other words, every physician of the community holding a diploma entitling him to practice medicine should be accorded the privileges of the house at all times regardless of the fact whether or not his patients are pay, city or county cases. No one person in a community can do more toward popularizing an institution of this sort than a physician. Hospitals for communicable diseases should be considered nothing more nor less than huge quarantine stations, and if a doctor is competent to treat a patient in a home, surely he is competent to treat the same patient in a hospital. As a matter of fact this system works out in a very practical way, for at the Ernest Wende Hospital where this method has always been in vogue, 98 per cent. of the physicians turn their cases over to the house and merely make occasional visits for the purpose of satisfying the family and friends on the outside. Unless this privilege were accorded, many persons would absolutely refuse to commit their children to the institution. This attitude on the part of parents or friends is not at all unnatural.

The dangers from crossed infection in hospitals of this description are rapidly being lessened and where such structures are built on the box ward plan like the Pasteur Hospital in Paris, risks from this source are practically eliminated. The rooms should be small and built with two doors, one opening on an interior corridor and the other on an outside balcony. Under this system, units can be isolated at will.

In short, there is no valid reason why a hospital for communicable diseases may not be conducted as safely, comfortably, attractively and profitably as any general hospital in the country.

SMALLPOX AND VACCINATION.*

By F. C. CURTIS, M.D.,

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THE number of cases of smallpox in America in the last decade has been put at about 300,000, but I do not believe that represents one-half the actual number, for to my personal knowledge a great many have been so mild that they have not been recognized. I am sure that in this state it would be impossible to tell how many cases have actually occurred. The diagnosis has been questioned by the people and by physicians as well, more in the earlier years following the widespread prevalence of the current mild type, which began in 1898.

It has been smallpox, because at the mildest it has the characteristics of smallpox, because

from it unmodified smallpox has been contracted, because having had it protects one from smallpox, and because those recently vaccinated do not contract it.

Why it has been mild in this country while in some European countries it has been as severe as ever, no one has found a satisfactory answer to. Individuals and races vary in susceptibility to smallpox, but territorial and climatic conditions do not affect its quality; epidemics, as with other infectious diseases, vary greatly in severity, as was often noted in the 18th century, but a type has never been maintained. We know practically nothing of the conditions which determine the varying degrees of malignancy of smallpox. It is probable that a virus of weakened virulence has been working; it has been widespread because, being mild, many have gone everywhere in the active stage of the disease without restraint. However, though generally mild, not a few have had it in the severest form, and not less than 800 have died from it in this state since 1898. I have seen hemorrhagic smallpox taken from one who had it in so trivial form as to have entirely escaped detection. It has been maintained, and of this Hyde of Chicago was an advocate, that the general vaccination of the people has weakened the virulence of the disease; I would like to believe this, but there is too much against it.

At the present time smallpox exists in other countries with all its old-time severity, as will be shown by any recent United States Public Health Reports. In cities of Mexico and South America deaths are reported by the hundreds; Palermo, Italy, has lately had 412 deaths in 1,263 cases, or a 25 per cent. mortality; Hong Kong reports 43 cases and 32 deaths; Russia, Spain and Turkey have epidemics with high mortality. In *this country* in one week in March there were reported 943 cases from 16 states, with only four deaths. If for ten or twelve years all through the United States there has been a mortality of one per cent., while in other countries there has continued to be a mortality of 25 per cent., and if the reason for this extraordinary fact is that we have been sufficiently isolated to have one strain of an attenuated virus at work among us, manifestly the possible entrance of a more virile virus is not so remote as to warrant indifference toward a disease which has eccentricities, but which can never lose its significance.

Regarding the diagnosis of mild smallpox, which often is not easy, there are three characteristic points which can be counted on, and I note them in the order of their diagnostic value: the initial fever or mode of onset, the distribution of the skin lesions, the morphology of the lesions. No other eruptive disease has a fever of onset, or possibly it may be a mere malaise, which lasts for three days and then subsides as the eruption appears; no other eruptive fever has a papular eruption which comes first on the uncovered skin,

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the face and hands, and is always most abundant there; no other has a papulo-vesicular eruption which develops in its entirety within 24 or 48 hours, so that all adjacent lesions are of the same age, and whose essential quality is that of a firm papule. I may add that no exanthem can be as trivial in its manifestation as smallpox, a disease which can also be the most distressing. The wise course in every doubtful case is to admit the doubt and hold the subject in till the doubt is removed.

It is not possible that there should be diversity of opinion among medical men regarding the controlling power of vaccination over smallpox. History has told us that, among its other baneful effects, it had an average yearly mortality of 600,000 before Jenner's time, and that at the very beginning of the 19th century there was a saving of nine-tenths of this number of deaths when his beneficent discovery came into use; while smallpox is now an unknown disease in countries civilized enough to have vaccination in universal use. Our own experience has told us that duly vaccinated persons do not take smallpox, no matter how exposed, and that it is our only safeguard when we personally come in contact with it. We vaccinate babies and send them to stay in smallpox hospitals along with their variolous mothers, perfectly certain that they may stay there for weeks with immunity. Among the triumphs which men of our profession have achieved over pestilences none has been more patiently worked out and more enduringly successful than that of this pupil of John Hunter over one which in historic importance ranks above all other epidemic diseases, and we honor Jenner above them all for giving to the world "the greatest discovery ever made for the preservation of the human species." "If there is any demonstrated proposition in this world," President Eliot has said, "it is that people by the million are protected by vaccination, especially against death by smallpox."

There is something, however, to say to medical men about the subject of vaccination. Why is it that a century after this perfect prophylactic was discovered the extinction of smallpox has not been effected? In countries that are ignorant and backward, to whom the gospel has not fully come, this may not be expected, but in civilized communities it ought to have been fully realized.

Can our governments guard the lives of the people with more care? We know what has been done under despotic governments. In 1816 Denmark forbade that anyone should be received by the clergy at confirmation, nor be married, nor be admitted to any school or apprenticed to any trade, who had not had either smallpox or cowpox; and for six years there were only 158 deaths from smallpox in the whole Danish dominions, prior to which deaths by the thousands had occurred in the city of Copenhagen alone. Bavaria ordained that every person above a certain

age should be fined with an increasing penalty every year who failed to be vaccinated, and in eleven years there were only five deaths in the kingdom from smallpox. Germany is now showing the world what universal compulsory vaccination will accomplish, for smallpox is practically unknown and there is not a pesthouse in the kingdom.

In this state since 1860 the law has required vaccination of all attending the public schools, and while its enforcement has been widely neglected, it is my observation that smallpox we have is chiefly among adults and foreigners to the state who have never been vaccinated.

I would not recommend more exacting legislation among our people, but I would maintain this law to the last degree unchanged, for to lessen its force in any way would be a serious misfortune. It has been contested in court, but to their honor the courts have, to the highest tribunal and without dissent, endorsed it. Yearly its repeal has been attempted in the legislature, but that body has been appealed to in vain and it has stood as a measure for the common welfare. Thus New York has kept itself in line with a few of the more advanced states.

Vaccination has had its opponents from the outset. They have made much noise, and no doubt have had the sincerity of ignorance and narrow experience. Their arguments are altogether unscientific and appeal only to uninformed people. But it is my conviction that the devoted followers of antivaccination are comparatively very few. A speaker at the last hearing before the Public Health Committee of the Legislature claimed loudly that he represented 15,000 adherents to this faith in the United States; our perfectly justifiable rejoinder was that we represented many millions who are opposed to their contention. I believe it is true that in the last analysis the great body of the people believe in vaccination; to many of course there is indifference toward what does not seem a pressing need, but practically all thoughtful people accept it.

One thing which can be said to physicians is in connection with the forgetfulness and indifference of the people toward vaccination. As long ago as 1830 Dr. T. Romeyn Beck in the President's address before this State Medical Society on the very subject which I am presenting, says: "The most effective obstacle to the extinction of smallpox is the inattention, indifference, the forgetfulness of the community to its character and consequences. When a nation enjoys for a few years exemption from it, a new generation springs up most of whom have never been secured from its attack." As was later said by Simon, "The very success of vaccination has blinded the people to its importance. It is easy to be bold against an absent danger, to despise the antidote while one has no painful experience of the bane." There is only one person who can overcome this forgetfulness

of the people and that is the family physician. Fifty years ago I believe it was usual for medical men to remind people and to see that the babies as they came were vaccinated. But now it appears to me that the doctors themselves have forgotten about vaccination.

Another thing the profession can do is to lend the weight of its influence among the people toward enforcement of the school vaccination requirements. This is the safeguard against family neglect toward the baby. School trustees themselves are forgetful of the law but their indifference will be overcome if there is a public sentiment that is kept alive.

Are there any lingering doubts in the minds of physicians regarding vaccination; are there any failures on the part of physicians to treat the procedure rightly? Questions come up: Why is the immunity from smallpox after vaccination sometimes short-lived; are ill results sometimes attending vaccination an essential element of risk; is vaccine virus free from adventitious morbid organisms; is there any material number to whom it is unsafe? And, is the procedure generally done rightly and cared for properly?

The purpose of vaccination is to induce the disease vaccinia, which calls into existence in the system the same elements of defense that are called out by variola, and effects the same immunity. How long will this last? I am sure that in a good many it lasts a lifetime. But we have reports of smallpox frequently where it is stated that the subject had been vaccinated only a few years previous. It is impossible to ascertain what sort of alleged vaccination was done, but I am confident that it was much of it spurious, and that the subjects did not have vaccinia.

Then, too, vaccination is discredited with the people by "bad arms," and while most of this abnormal result is due to post-vaccinal infection, I would suggest that sometimes needless trauma attends the procedure of vaccination. It is not necessary to alarm the local nervous elements by prolonged scraping of the skin; instead, I would simply make two linear tears through the scarf-skin barely into the lymph spaces of the rete at the insertion of the deltoid where there is no underlying muscle. I have admired the skill of the operators on the calf, who make with absolute precision parallel lines across the abdomen and flank without a break into the papillary capillaries. Following this, let the dried lymph be the only cover, protected only by a folded handkerchief pinned to the sleeve. Anyone who has seen the skin beneath a shield left on for several days, sodden with retained sweat and material which fell through the openings, will have little doubt as to their interference with normal vaccination if long retained. I also think that every vaccinator should have printed directions to give to the vaccinee as to the care that should be taken, such as have been prepared by the State Department of Health. The reasonable demands of this

little surgical procedure are simple but exacting. Most of the ill results will be avoided if they are complied with.

Are there any unavoidable risks attached to the vaccine virus; is it possible to make a virus that is practically pure? Formerly when humanized virus was mostly in vogue, unless great care was used there was danger from pyogenic organisms or possibly from infection with human diseases; and when calf lymph came into general use the attendant rashes of twenty years ago were certainly toxic. But the slightly carbolyzed glycerin treatment of vaccine virus today has been elaborated enough to make it safe to say that practically only the resistant vaccine germs need exist in the offered product. All vaccine establishments are under government supervision; calves before use are kept under veterinary observation; they are scrupulously washed, shaved, fed only on milk, watched day and night in separate stall with the hose in ready use, their lymph collected on the fifth day before suppuration, the animal autopsied, the lymph tested in the laboratory and bacteriologically for weeks and the market product subject to frequent test in government laboratories. The action of glycerin on all the attendant organisms has been studied and its control pretty well established. Strictly human diseases are excluded, including tuberculosis, which is not a calf disease; septicemic infection is fully obviated by the glycerin; tetanus, which is more resistant, gives the most concern, but in the post-vaccinal cases thus far occurring its vaccinal source has been satisfactorily excluded, the biological test of all the virus should arrest it, and in the many government tests of market virus its presence has never been found. People are ready to attribute any disorder coming within a year or more after to the vaccination, but this is, of course, unreasonable. Of the alleged deaths attributed to vaccination in the last twenty-five years the State Department of Health has found but one or two (and millions of vaccinations have been done in that time) which were attributable to vaccination. Three and a half million people were vaccinated in the Philippines without a serious mishap, and 6,000 deaths from smallpox were thereby prevented yearly. For several reasons I advocate the state manufacture of vaccine virus. Although generally pure, I have found virus in one or two instances which contained a peccant organism, from commercial establishments; it should be free from the intermediate handling by middle men; it should be furnished gratuitously for use in public institutions, and wherever the public interest demands; so long as vaccination is to a degree compulsory the state should be able to guarantee the virus. The public will be more ready to accept vaccination if the virus comes from a state establishment.

As to there being any material number to whom vaccination is unsafe, while there is practically no bar to it in the face of exposure, I

would prefer not to vaccinate those who are poorly nourished, having material chronic disease, diarrhœa, or infectious diseases of the skin. Physicians ought to be conscientious in certifying to this and name the contra-indications.

Let us be alive to the potential gravity of the disease which vaccination has stayed and to the inestimable value of this greatest contribution of the 18th century to the welfare of the human race.

THE USE OF A BOUILLON CULTURE OF STAPHYLOCOCCUS PYOGENES AUREUS IN DIPHTHERIA CONVALESCENTS AND BACILLUS CARRIERS.*

By R. G. WIENER, A.M., M.D.,

NEW YORK CITY.

THE object of this paper is to call the attention of the members of the profession to the use of a bouillon culture of staphylococcus pyogenes aureus as a spray in the throats and nares of convalescents from diphtheria and bacillus carriers.

This procedure is as yet somewhat experimental, but seems to be absolutely harmless. Its possibilities in cutting short the period of isolation of diphtheria convalescents, and making diphtheria bacillus carriers innocuous, are invaluable. Everyone who has had any experience in the treatment of diphtheria has met with a condition in which the patient, being practically well, has for weeks shown positive cultures, though all varieties of local treatment in the form of sprays, gargles and applications had been used.

According to Graham Smith, in "The Bacteriology of Diphtheria," edited by G. H. Nuttall and Graham Smith, 1908, p. 421, the average period of persistence of bacilli in virulent diphtheria cases is 31.6 days; one-third of the cases exceeded this limit, six lasting over 100 days. In a series of 175 cases, Lydia M. De Witt, *Journal of Infectious Diseases*, Vol. 10, No. 1, p. 25, 63 per cent. lasted less than 30 days, 87 per cent. lasted between 15 and 35 days, while only 12 per cent. lasted under 15 days, and 12 per cent. over 40 days.

Some years ago a Danish physician, A. Schiøtz, (abstract in *Journal A. M. A.*, Volume 54, Number 5, page 422) observed that during an epidemic of diphtheria a patient with a staphylococcus throat infection who had by mistake been placed in a diphtheria ward did not contract diphtheria. He also observed that in a number of diphtheria convalescents in whose throats the bacilli were present, intercurrent attacks of ordinary sore throat caused a disappearance of the Klebs-Loeffler bacilli. Acting upon these observations, he inoculated six cases of diphtheria

by spraying the throats with a staphylococcus aureus culture, obtained from a patient who had a pure staphylococcus sore throat. In all these cases, after two days cultures from the throat became negative, though in two of the cases they had been positive for two months.

In an article entitled "Diphtheria Bacillus Carriers, with a Report of a Case Treated by Overriding the Infected Area with Staphylococcus Aureus," Henry Page of Manila (*Archives of Internal Medicine*, Volume 7, Number 1, pp. 16-23) reports a successful case. He concludes "that as treatment of carriers has proven useless, local measures and antitoxin having no effect, and as pure cultures of staphylococcus pyogenes aureus sprayed into the throat destroy the Klebs-Loeffler bacilli in from 48 to 72 hours, the treatment, being harmless and effectual, should be used in all carriers."

In a later article, *N. Y. Med. Journal*, December 23, 1911, Page cites the case of his own child, who was convalescent from diphtheria. He swabbed the throat with bouillon cultures, with at first negative results, due, as he says, to the timidity in applying the treatment. "This timidity caused a delay in release from quarantine. The harmlessness of the procedure is shown in this, as in all instances in which it has been adopted. The history of the case indicates that at least partial failure may be expected if the staphylococcus spray is used with too much timidity."

S. R. Catlin, O. Scott and D. W. Day, in the *Journal A. M. A.*, October 28, 1911, pp. 1452-53, report an epidemic of diphtheria in which the staphylococcus spray was successfully used in eight cases of carriers. They say "that the usual methods of throat antiseptics are of little value in ridding the throat of diphtheria bacilli. Results with staphylococcus aureus spray were such as to warrant further use, and were harmless."

By far the most important scientific work is that of Lydia M. De Witt of the City Laboratory of Bacteriology and Pathology of St. Louis, Mo. In an article entitled "Report of Some Experiments on the Action of Staphylococcus Aureus on the Klebs-Loeffler Bacillus," she observed the influence of staphylococcus inoculation upon diphtheria cultures in large serum tube slants. The results showed no antagonism between the two organisms; they grow well together on the same medium. She next inoculated 32 animals with diphtherial cultures, afterwards treating them with staphylococcus cultures, resulting as follows: Nine were not influenced by the treatment, 14 were worse, and 9 were better than the untreated diphtheria cases. "The results of these experiments did not show that there was any rational basis for treating diphtheria cases with staphylococcus." "It is to be remembered, however, that the conditions in the throats of human diphtheria convalescents are entirely different, and therefore no positive conclusions should be drawn from these experiments."

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

De Witt was enabled to use the treatment in two cases, one a woman aged 19 years and the other a boy of 12. The results were excellent.

The question becomes pertinent, how does the staphylococcus act upon the diphtheria organism? Schiötz considered that there was an antagonism between the organisms. De Witt does not agree with this theory, as her experiments show that the organisms grow together, and in a series of 45 cases nearly every one began as a mixed infection of staphylococcus and diphtheria and continued so through the course of the illness. De Witt concludes "that the reason for the apparently favorable action of the staphylococcus on chronic diphtheria cases seems to be an effort to reinforce the favorable friendly throat flora in the cases in which they are unable to regain their natural normal ascendancy."

A few weeks ago a case of ordinary tonsillar diphtheria came under my care; 5,000 antitoxin units were immediately injected; after four days all membrane had disappeared and the child was practically well, but nine cultures were taken in the following three weeks and all were positive, though application of silver solution and various sprays and gargles had been used.

On December 11, 1911, three and a half weeks after the onset of the disease, a light 24-hour bouillon culture of staphylococcus pyogenes aureus was used three times a day.

December 12th, culture positive; a spray with a culture twice as heavy as the previous day was used.

December 13th, throat culture still positive, but fewer organisms present. A heavy culture was used every three hours on this day.

December 14th, culture negative; pure staphylococci showed on slide; plating out on sugar agar showed no bacilli.

December 15th, no further treatment. On the 18th, four days after the last spraying, culture showed a staphylococcus and a gram negative coccus, probably micrococcus catarrhalis; plating out showed no bacilli.

The culture used in this case was a laboratory culture of staphylococcus aureus almost a year and a half old. At no time was there any sign of any local or constitutional disturbance in this case.

At my suggestion Dr. L. K. Neff of this city used the spray in two very virulent cases, in which a number of cultures were positive. The throat culture became negative after four days' use of the bouillon spray. In a case of Dr. Krauskopf, cultures became negative after seventy-two hours' spray. It would be presumptuous to draw conclusions from such a limited experience, but as was said before, this subject is presented for the purpose of having it thoroughly tested, considering the invaluable possibilities of shortening convalescence and isolation, as well as preventing the spread of diphtheria by carriers. It is particularly of value in epidemics of diphtheria occurring in institutions

where nurses and attendants become bacillus carriers, though not actively affected.

Let me add, in conclusion, that staphylococcus pyogenes aureus cultures in bouillon can be prepared in twenty-four hours and be procured at any bacteriological laboratory without difficulty. A fresh, live culture must be used daily and sprayed into the throat and nares every three hours.

PREVENTION OF OCCUPATIONAL DISEASES.*

By W. GILMAN THOMPSON, M.D.,
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THE problem of the prevention of the occupational diseases may be sub-divided as follows:

1. What the state may do.
2. What physicians may do.
3. What manufacturers may do.
4. What the employee may do.
5. What the public press may do.
6. What the general public may do.
7. What special organizations may do.

1. *What the state may do.*—The work of the state should be (1) educational, through the collection and dissemination of data; and, (2) preventive, through prohibitive and protective legislation.

In this country, the idea of legislative control of occupational diseases has arisen long after that of the safeguarding against occupational accidents. It has arisen in great part from the example of foreign countries, in many of which such legislation has long been in active operation; in part from the increasing desire to promote efficiency in all classes of labor and in part from the influence of humanitarian societies or associations and the self-protecting influence of labor organizations. Up to the present time, in the United States, legislation, with only one or two exceptions, has taken the form, as far as occupational diseases are concerned, of attempting to regulate factory ventilation, a problem which is of extreme difficulty owing to the lack of universally accepted standards. About twenty states have vague laws requiring that factories shall be "well ventilated" or "sufficiently ventilated," and ten states specify a minimum cubic air space per occupant. New York State is the only one which provides for systematic analyses of factory air with publication of the results, and Illinois has made good progress in maintaining compulsory standards of air purity. With the exception of these two states, together with New Jersey and Massachusetts, there has been little or no scientific factory inspection in the whole country, designed specifically to control occupational diseases. In the states mentioned, however, some very valuable intensive studies have been made by official inspectors of special industries, notably of the lead, pottery and pearl button industries.

* Read before the Albany County Medical Society and Hygiene Exhibit, Albany, October 18, 1912.

as well as those involving the use of mercury and phosphorus.

While we are thus greatly behind such countries as England, Germany, Belgium and France and several other European states in matters of legislation, it is a serious mistake hastily to enact such legislation before sufficient accurate statistics have been obtained. To accomplish this result, a good beginning has been made in eight states which have within the past two years passed laws compelling physicians to report officially a half-dozen of the occupational diseases, a list which in England has already been extended to 27.

There are, however, a few conditions which constitute such obvious evils that no statistical facts are necessary as a basis for their correction. For example, every one knows the horrible results of working in the match industry where white phosphorus is employed and the recent congressional act taxing this form of the industry out of existence affords the only illustration thus far in this country of preventing a disease by taxation. I see no reason why the use of wood alcohol as a solvent of shellac should not be absolutely prohibited wherever this product is used in confined air, as in the interior of brewers' vats. I see no reason also why laws should not be enacted compelling the placing of warning labels upon containers of hazardous substances, such as kegs of white lead, paint cans, barrels of ferrosilicon, etc., just as poisonous drugs must now be labelled. The caisson disease is another example of a disease readily controlled by legislation.

On the other hand, there are many industries very difficult to thus control which are numerically important, not because they are liable to cause early death, but because they lay the foundations of disease in a very large number of workmen. For example, in the lead industries, it is comparatively easy to control the operation of smelting works, white lead works, etc., but a large majority of all cases of chronic plumbism develop among painters who may not work collectively in factories, but outside and independently. In the histories of over 300 cases of lead poisoning which I have collected in my hospital and dispensary clinics in New York 75 per cent. of the victims were painters. It is in such instances that education may prove more effective than legislation.

The educational function of the state should consist in the collection and publication of records of the occupational diseases, based upon reports of physicians and inspectors in conformity with the universal nomenclature now being devised by the Bureau of the Census in co-operation with the American Medical Association. The publications should comprise not only statistical returns, but concise descriptions of the principal occupational diseases for distribution to physicians, hospitals, and dispensaries and also to factory employees. A booklet containing such

description which I formulated, has been issued by the New York State Labor Bureau and constitutes a beginning in this direction. For manufacturers, leaflets should be issued calling attention to the hazards of their special industries, with suggestions as to prevention.

Finally, such travelling exhibits as those prepared by Massachusetts and New York State authorities are of the greatest possible value.

2. *What physicians may do.*—By hearty co-operation with the state authorities in gathering accurate data of the occupational diseases, physicians should furnish the facts upon which future legislation may alone properly be based. They should see to it that the hospital and dispensary clinics which they attend should collect statistics of real value, based upon uniform standards. I have seen a serious case of plumbism in a man who carried lead ingots in a smelting works, yet who was entered upon the hospital records simply as a "laborer." On the other hand, a young man who was entered as an "electrotyper" was employed merely in tending the outer office of the bookkeeper of the establishment. In my Medical Clinics in Bellevue Hospital and the Cornell University Medical College in New York City, I have supplied special history blanks for the detailed records of the occupational diseases, and also printed leaflets of information which are given to workers in special industries, as that of painters, typesetters, etc.

The most satisfactory aid which physicians can furnish, however, is by undertaking intensive investigations of special industries, and giving the results due publicity in the medical press. Such a research, for example, as that of one of my clinical staff, Dr. Edward L. Keays, comprising the results of personal study of 3,692 examples of caisson disease is worth far more than years of collection of isolated reports made to the state under the physicians' notification act. Much valuable intensive investigation has also been made by physicians and others under authority or direction of the state, like the lead investigations of Dr. Alice Hamilton and Mr. E. E. Pratt, and many interesting studies by Dr. John B. Andrews, Dr. Graham Rogers, not to mention others. But the point is that there are many physicians throughout the country who, by virtue of their official connection with large industrial establishments, are in a position to furnish extremely useful facts, if they could be aroused to do this work. At present, most of this valuable material is, so to speak, going to waste. It might be feasible for the state to furnish these physicians with specially prepared blanks for uniform clinical records and in some instances to furnish official inspectors to co-operate with the physicians. Lay inspectors may properly deal with conditions of environment such as obvious dust hazards, the presence of toxic fumes, the lack of ventilation, etc., but the extent of injury which such deleterious conditions produce and the often insidious symptoms of chronic poi-

soning can only properly be estimated by trained physicians. Moreover, before the latter come very many patients with chronic diseases, particularly of the circulation, respiration, and kidneys who have long since abandoned the occupations which produced them, and hence such patients have passed out of any possible industrial control which the state might exercise.

Physicians whose practice includes many cases of occupational disease may do much to aid the cause of prevention by organizing discussions upon such topics in medical societies, and by contributing their experience to the medical press. It is only within a year or two that the Section on Hygiene of the American Medical Association has devoted attention to this important matter, and the joint meeting of that section held this year in co-operation with the American Association for Labor Legislation was most successful and stimulating.

3. *What manufacturers may do.*—From the reported experience of special investigators it appears that many manufacturers are quite ready voluntarily to adopt improved methods when their desirability is pointed out to them. Whether they are disposed to do this from humanitarian or economic considerations need not be discussed at the present time, but it is safe to assert that a majority of them are willing to introduce improved conditions when rightly informed as to their advantages. The simplest way to accomplish this is to demonstrate economic efficiency, which in many instances is easy to do. For instance, it has been repeatedly shown that better lighting of certain kinds of factories may increase the output materially. Not only do the employees work more accurately and rapidly, but accidents and incapacities from illness are lessened and the moral tone of the workmen is improved. The same is true in even greater degree of improvements in ventilation, dust removal and everything which tends to promote personal cleanliness. For example, in white lead works in which such facilities for personal cleanliness have been introduced as shower baths, washrooms well supplied with hot water, soap, nail brushes, and towels, clean overalls and separate lunch rooms, lead poisoning soon becomes a rarity and the number of days of illness among the employees may be reduced to a negligible quantity. In one of the plants of the National Lead Company in which a type of foreigners were employed who were peculiarly averse to ablutions, the company found it an economic advantage to add a few cents to the pay roll for each bath that the workmen took. Such a measure could hardly be accomplished by legislation, but the education of the employers as to the nature of the lead hazard and simple means of avoiding it, proved all that was necessary to realize the best results. On the other hand, it is often stated by manufacturers that ignorant or obstinate workmen will not use the hygienic appliances afforded them. An employer in another large white lead

factory stated that one of his best foremen he knew was becoming seriously "leaded." He cautioned the man repeatedly to take better care of himself, and finally threatened to discharge him if he did not obey the hygienic rules of the establishment. The employer further stated that he felt he had done all he could, or all he knew how to do. But he had neglected to allow the workman sufficient time to wash before eating and before going home and neglected to supply periodic inspection by a physician and neglected many other things without which his existing rules were neutralized as to any benefit they might confer. It is in such cases as this that a brief pamphlet of instruction, supplied either by the state or such an educational body as the American Association for Labor Legislation, might prove more effective than compulsory legislation as to the number of nail brushes to be used and similar minute details which are comprised in some of the British factory laws.

I have heard Dr. Alice Hamilton state the interesting observation that in at least one hygienically equipped white lead works in Illinois she found more cases of lead poisoning than in another establishment where the equipment was of the poorest. Doubtless the employers in the first establishment felt that, having furnished proper facilities, their duty ended there and they neglected to exercise either the tact or moral force to see that the workmen availed themselves of them. I know of instances in New York where ventilating suction fans have been installed under the orders of the State Bureau of Factory Inspection, which were only put in operation on days when a visit from the inspector was anticipated. I was lately shown over a paper mill in Massachusetts by the proprietor. In the room where the imported rags were unbaled was a rag shredding machine originally enclosed in a glass-windowed closet. The windows, however, were broken and the dust and dirt in the surrounding room was inches deep. The fact that one employee had worked continuously in that room for a dozen years was cited with pride but her anemia and chronic bronchitis might have been prevented at the expense of a few panes of glass. The novelty of that suggestion which I made, so startled the proprietor, that I doubt whether he has yet recovered.

Massachusetts has good laws covering such cases of neglect, but legislation which fails to provide for adequate inspection and enforcement may be worse than useless in conferring fancied benefit or security which does not exist.

4. *What the Employee May Do.*—It is notorious that employees, particularly ignorant foreign workmen, who are largely occupied in the grosser forms of labor with crude products in smelting works, pottery works, etc., neglect to use the means provided for their protection. They often will not use respirators or masks because they are uncomfortable, they will not wear gloves to protect their hands from eczema and ulcers and they will eat their lunches on dusty

workbenches or sitting on dirty floors and without cleaning their hands, and they will go home unwashed, carrying the poisonous dusts of their trade to be disseminated in their rooms. The admirable system adopted by the National Steel Company for accident prevention might well be applied in many industries to prevent occupational disease. I refer particularly to the system of holding foremen responsible to see that hygienic rules are obeyed by the workmen under them. This is aided by a series of rewards and competition, by tersely worded printed directions and warnings, and by instruction and warning given at the time of examination of the workmen by inspecting physicians, which latter they are most apt to heed. Often the workman's attitude of neglect arises from misapprehension as to the employer's attitude toward him. He fears to be considered too solicitous about himself, or to be accused of wasting valuable time in means of caring for his health, not realizing how much more time he wastes by attempting to work when in ill health, or by being laid off for invalidism.

5. *What the Public Press May Do.*—Generally speaking, the attitude of the press towards the problems under discussion is improving. Much important information was published in connection with the recent International Hygienic Congress and its admirable exhibition, and the manner in which the campaign against phosphorus poisoning was supported by the press was of great service in suppressing that evil.

One of the most influential of the New York daily papers has begun a collection of printed reports upon occupational diseases to be kept on file for reference when special occupational poisons may demand public attention in its editorial columns, so that correct points of view may be presented.

6. *What the General Public May Do.*—To the public we must look for the financial support which is so much needed for the comprehensive study of the occupational diseases. The endowment of museums of public safety, the establishment of fellowships in medical colleges for the investigation of the pathological problems involved, the equipment of travelling exhibits illustrating occupational hygiene after the manner of the tuberculosis exhibits—these are some of the ways in which philanthropic laymen may aid the work. In New York City is a Museum of Public Safety, maintained by laymen, which although largely devoted to appliances to prevent industrial accidents, is beginning to exhibit illustrations of occupational disease hazards, and modes of prevention. In Europe there are already fourteen such museums. In my Medical Clinic in the Cornell University Medical College is one fellowship for the study of occupational diseases, and I hope soon to be enabled to offer others, and that the example of the donor will be followed elsewhere.

7. *What Special Organizations May Do.*—

The American Association for Labor Legislation since it took up the study of occupational diseases through a special committee, established less than a year ago, has organized a number of important public discussions, issued much useful literature and a comprehensive bibliography of the writings upon the occupational diseases. It has been in cordial co-operation with the State Labor Bureau and the Committee on Occupational Diseases of the New York Academy of Medicine.

This is a brief view merely, of an extremely broad topic in which it has been impossible to do more than outline the scope of activity, and present a few of what I trust may prove practical suggestions in a field which is beginning to be explored in this country with every indication that within the next few years very great advances will be made.

THE SOCIAL EVIL.*

By JAMES PEDERSEN, M.D.,
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TO comply with our chairman's request for a summary of the present-day methods and means for combating the social evil, and to note the progress made in results, it is only necessary to condense the detailed report recently drafted by Dr. Morrow, the president of the Society of Sanitary and Moral Prophylaxis. The work and achievements of that society cover the advances in this branch of preventive medicine. While admitting with praise the excellent work in progress for many years by many organizations concerned generically—often specifically—with the welfare and uplift of the individual and the race, it must be conceded that the Society of Sanitary and Moral Prophylaxis initiated the present concerted effort to teach the public the gravity of the venereal diseases, and to educate the individual up to appreciating automatically that he, personally, is under a moral obligation not to expose himself to them for the sake of protecting the body politic against them.

In the seven years of the society's existence there have been added two branches, twenty similar organizations in this country, and a society of sanitary and moral prophylaxis in New Zealand; the membership has extended to Europe, Asia and Africa, and two of the educational pamphlets have been translated into Japanese.

The ways and means employed are literature and lectures, as with all educational systems. Incidentally, legislation designed to lessen the social evil is studied.

The literature's value is readily estimated from the titles of some of the pamphlets as examples. Those published by the parent society are: "The Young Man's Problem" (23,000); "Instruction in the Physiology and Hygiene of Sex, for Teachers"; "The Relations of Social Diseases

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

with Marriage and their Prophylaxis" (now out of print); "The Boy Problem (for Parents and Teachers)" (22,000); "How My Uncle, the Doctor, Instructed Me in Matters of Sex" (10,000; an authorized translation from the Danish); "Health and Hygiene of Sex for College Students" (45,000). In addition, it has a quarterly, "Social Diseases," in which are published its transactions in full, with reports from correspondents, and other related matters.

The St. Louis Society of Social Hygiene publishes: "A Plain Talk with Boys on Sex Hygiene"; "The Delinquent Girl" (facts and recommendations based on observations of a Juvenile Court probation officer); "A Straight Talk with Employers and Leaders of Organized Labor"; and "The Effect of the Venereal Diseases on Young Men."

The Spokane Society of Social and Moral Hygiene has distributed in the past two years 83,000 copies all told of its seven circulars, beginning with "The Need for Education in Sexual Hygiene," and running through a graded series for girls and boys at different ages, concluding with one for young men and one for young women.

The Connecticut Society of Social Hygiene, with its twenty local educational committees, has sent to every physician in the state "Information for Persons Having Venereal Disease." It has three other publications, some translated into other languages for its factory population. It uses also the New York Grand Jury's report on the white slave traffic, the publications of the parent society, and a few approved books—partly as a circulating library.

The Mexican Society of Sanitary and Moral Prophylaxis has its own magazine and an original treatise on "the 'inutility and dangers' of 'regulated prostitution.'"

The lectures include the informal, more or less personal talks to small, classified, segregated groups by specially trained and qualified lecturers and teachers, and the more formal presentation of the subject to either segregated or mixed audiences. Some formal lectures, under necessary restrictions, have been illustrated by lantern slides of the extra-genital pathologic conditions. In progressive Indiana the lecturers are commissioned and paid by the state board of health.

Under informal lectures, those to groups of mothers assembled in the public school buildings, to shop girls, and to men and to women in the factories are to be specially mentioned.

All organizations in any degree affiliated with the society have accepted the work as axiomatically one of evolutionary education, and therefore have given *verbal* instruction a prominent place.

At the formal meetings the topics have comprehended all phases of the subject, from the strictly medical to the medico-legal. For example: the effects of gonorrhoeal infection upon children; the age at which sex instruction should commence; how to give that instruction in the

public schools; specific methods of correct instruction before college years; hospital and dispensary requirements for prophylaxis; prophylaxis in the army and navy; the affluents of prostitution; health department control of venereal disease; reglementation; medical examination before marriage; penalizing the transmission of infection in marriage; reduction in vice in certain western cities through administrative reform; finally, the sterilization of criminals and defectives. Certainly we have not been talking moral platitudes.

The sanctioned literature and lectures cannot but impress us with the firmness of the determination to totally avoid emotionalism and morbid sentimentality. The consistently sustained effort has been, and is, to teach certain physiologic truths and medical facts to parents and to the youth of both sexes, only by indirection leading their minds to grasp a moral obligation to accept what I may be allowed to summarize as the ethics of decent citizenship.

Legislative measures have not been the dominant policy of the society, for almost obvious reasons: (1) the law's delays, both before and after enactment; (2) the obstacles in the way of securing equitable measures, and (3) the medical problems concerned in the diagnosis, treatment and cure of the venereal diseases. Moreover, and, in truth, therefore, it was from the outset the society's endeavor to correct the errors of the unwritten law of silence by the self-enforcing law of outspoken, enlightened public opinion. A member expressed this epigrammatically when he said that a law becomes law only when it is no longer necessary; that is, no law ever operates as law unless public opinion has been trained into sympathy with it. With precisely the same distinction, though speaking on a very different topic, the Hon. Leslie M. Shaw says: "The incessant cry is for more laws as distinguished from more law." Lest my interpretation be not sufficiently concrete, I shall quote Dr. Morrow. On the matter of a medical certificate as a prerequisite to marriage, he says that it will be difficult to enact such a law without including both sexes—an unnecessary hardship, as the wife so rarely introduces a venereal disease into the family; that to be effective, the same law must obtain in all the states; that the difficulty in making a diagnosis in latent cases except after prolonged observation will often militate against the value of the certificate. On the matter of "imposing penal responsibility for introducing infection into marriage," he calls attention to the law's self-limitations, in that the injury must first have been inflicted before it can become a cause for action, and that if the complainant should prove her case she will have publicly announced herself as diseased.

It would seem, therefore, an economy of time and energy to concentrate our efforts upon the line of least resistance, and train public opinion without further delay.

The channels and agencies through which this

educational movement has been ever widening are many and multiform—schools, colleges and universities, libraries, various church and charitable clubs, the army and the navy, associations of teachers and nurses, civic leagues, city clubs, settlements, industrial associations and employers of labor. Some of them and others not mentioned are closely affiliated with the society and have a not inconsiderable influence. As to the public schools, the State of Washington has made sex instruction mandatory in normal schools; Texas is introducing it; Chicago began a year and a half ago to teach the high school pupils something of social hygiene, and Philadelphia is planning for it. A partial report from a committee of the National Education Association shows that in 138 schools and colleges in this country personal and sex hygiene is systematically taught. As to the colleges and universities, fifty-four of them and several leading schools have distributed among their students within the past year 25,000 copies of Pamphlet No. 6—“Health and Hygiene of Sex for College Students.” Letters of acknowledgement from the heads of these several centres of learning express a realization of the lack of sex instruction, and say with gratitude that the society’s literature supplies it.

The daily press less than two years ago hesitatingly noticed the society and the necessity for its work. More recently a St. Louis paper printed an open letter to parents urging them to instruct their children in sex matters. The *New York Tribune*, on April 7th, devoted half a page of its Sunday supplement to an interview with Dr. Morrow on the whole subject.

The reputable journals of Mexico, urged by the Mexican Society of Sanitary and Moral Prophylaxis, successfully attacked the pornographic press.

Various popular journals and magazines have exposed prostitution and the white slave traffic with details calculated to convince parents that the temptations and dangers to which the uninstructed, unprotected girl is exposed are real. What between the blind ignorance of some parents and the fashionable folly of others, such warnings are in order and should be of value.

What are the measurable results? For the first time a truly widespread knowledge of the existence of transmissible diseases acquired through sexual immorality, their nature and their prevalence. An almost equally widespread conviction of the necessity for such early instruction of both sexes as will lead them later to correctly value the sex function. A growing conviction that prostitution is largely the result of a faulty economic condition in the body politic and therefore is not a necessary evil. Possibly the comparatively new international and the new interstate agreements concerning the white slave traffic may be traced—at least indirectly—to an aroused public opinion. The long-held physiologic fallacy, pervading the lay mind and known

as “the sexual necessity for men” is being corrected. It has been officially stated that within the past three years immorality in many colleges and universities has been reduced by from 20 to 40 per cent. The New York City Department of Health has been petitioned to make venereal diseases reportable, not by the patient’s name, but only by disease, for the double purpose of accumulating statistics and of reminding the public that these are serious diseases. A censorship of moving picture shows and slot machines has been secured. Also the regulation of dance halls. The repeal of Clause 79 of the Page Bill was secured on the ground that it was “unilateral” and that it simulated reglementation. Such are some of the results of the work of the society, aided by the co-operation of one or more of the affiliated bodies. Similar police measures are being urged, or have been adopted, in other cities. The Mexican society is discussing whether the venereal diseases should be a legal bar to marriage. Finally, an organization of the various societies in the country into a national body has been effected. Its title is “The American Federation for Sex Hygiene,” and \$25,000 a year for three years has been pledged for the prosecution of its work.

The briefest summary of this subject should reserve, nevertheless, sufficient space for a paragraph of tribute to Dr. Prince A. Morrow. Among the many, he was the one who interrupted an extensive practice and, acting under a compelling conviction ingrafted by the experience and observations of that very practice, determined that the public should be taught that which for too many generations it had not known. This was seven years ago. Has our profession at large given the endeavor the tremendous influence of an unqualified approval? That the venereal diseases are the fundamental causes of much of the misery that afflicts the individual, the family and the state, and that prevention of disease is the genius of medicine and surgery today, are, it seems to us, the only facts necessary to an indisputable argument for co-operation on the part of all, recollecting that one of the honorable duties of the physician is to promote knowledge.

THE RELATION OF THE GENERAL PRACTITIONER TO THE PREVENTION OF VENEREAL DISEASES.*

By PAUL B. BROOKS, M.D.,
NORWICH.

IF any one class of individuals more than another is responsible for the prevalence of venereal disease, it is the medical profession. That sounds like an unjust assertion. Let us consider.

For years we alone have been in possession of information which, if presented to the intelligent laymen about us—to the fathers and mothers—

* Read at the annual meeting of the Sixth District Branch, at Binghamton, October 15, 1912.

would have started an effective and far-reaching crusade. We have had knowledge of the seriousness of venereal infections, of their spread, like wild-fire, among boys—and to a less extent among girls—of school age. We have seen innocent wives made invalids and incapable of child-bearing, and have shared with careless or faithless husbands the secret as to the real cause of their conditions. Whether from stolid indifference, from modesty and diffidence otherwise known as “prudishness,” whether from a questionable interpretation of medical ethics, or a disinclination to lose a rather remunerative class of practice, we have stood with folded hands while the venereal scourge has dragged down its victims to degradation, invalidism and death. Like Cain, we have asked: “Am I my brother’s keeper?” There are a few notable exceptions: the name of Dr. Prince A. Morrow will go down in the annals of medical history as that of the first great American exponent of the prevention of venereal diseases.

If there is a difference of opinion as to the extent to which these diseases are prevalent, it seems that those who have investigated the situation most thoroughly credit them with the highest morbidity. Neisser, the discoverer of the gonococcus, asserted that at least 25 per cent. of the male population was infected with gonorrhea; the Committee of Seven, of the American Medical Association, reported that 80 per cent. of the deaths from female pelvic disease were due to gonorrheal infection; Dr. Holt, examining 100 female infants, taken at random, in the wards of a New York hospital, found over 10 per cent. with gonorrheal vulvo-vaginitis; Dr. Morrow, from the figures presented in the report of the Committee of Seven, and the available statistics relative to other diseases, concludes that the morbidity of the venereal diseases exceeds that of all other acute diseases combined.

To control the venereal diseases is a task demanding a Hercules. But in the medical profession, we have, not one, but thousands of Hercules, and many willing hands will make light work of the cleaning of our Augean stables.

The methods suggested are many and varied. But all are agreed that the first and most essential step is a campaign of education. The State Health Commissioner has already appointed a number of prominent women physicians to initiate this work among the women of the state. He has chosen his beginning wisely. When the mothers and the wives of this state realize the extent to which they and their children are threatened, it will not be long before the libertine, the frequenter of houses of prostitution, the carrier of venereal infection, will be *persona non grata* in the homes; it will not be long before the public official who smiles indulgently upon public prostitution practised in open violation of the law will give place to law-respecting and law-enforcing officials; it will not be long before there will be a demand for a standard of moral-

ity among men as high as that demanded of women. When the women are once aroused, the men who are too modest, too tired or too busy will find themselves in a “hornet’s nest” until they too have joined the crusade.

If education in rational sex-hygiene finds its proper place in the schools, the workers of the next generation will not have to begin by scaling a bristling wall of ignorance, prejudice and prudishness, while the boys who grow into manhood and go out from the schools will be safeguarded against the greatest peril which awaits them.

The leaders who spring up in this great fight against ignorance and disease—men like the State Commissioner of Health and Dr. Morrow—should find plenty of volunteers ready to stand or fall with them; they should be able to choose their officers and sharpshooters from the ranks of the medical profession. And there is scarcely a day, in the life of the general practitioner, when he has not a personal opportunity to spread the propaganda of continence and clean living and its influence upon the conservation of human life.

After our educational campaign, the next most important step is the control of prostitution. It is common knowledge that the majority of, if not all, prostitutes have been infected with gonorrhea and syphilis. Recently a young inmate of a house of prostitution told me, with some show of pride, that theirs was an “exclusive” establishment, patronized by the “best people,” including doctors, lawyers, and business men. She admitted somewhat less enthusiastically that it was not unusual for her to receive from ten to fifteen patrons in the twenty-four hours. The microscope revealed the fact that she had gonorrhea, and I have not been called there since. A fellow physician recently told me of an inmate of another house, whom he found suffering from gonorrhea, syphilis and chancroids, armed with a “certificate of health” from another physician, and only deterred from following her vocation by the fact that it was physically impossible. Several times I have had occasion to decline to make examinations with a view to issuing such certificates, and have been informed that there were plenty of other physicians who stood ready to perform this important function.

The Statutes of the State of New York and the ordinances of nearly every city and village, prohibit prostitution. It is permitted to continue openly because of a prevailing impression that the people demand it; that sexual appetites must be satisfied; that except for its saving influence the percentage of rape cases and assaults would be increased. If “the people” demand it, it is only the ignorant, vicious and lawless element. If it is possible, as we know it is, for the existing laws against prostitution to be enforced, then the hand of the law should be equally capable of protecting decent girls and women from rape or assault.

A year ago, a committee on the control of venereal diseases by a municipality, appointed in

the Section on Preventive Medicine and Public Health of the American Medical Association, presented its report. The committee had written to the health of officials of twenty-one of the larger cities, to learn what they were doing to prevent the spread of these diseases. Among their replies was one from a wide-awake Western city; a former mayor of that city, it stated, had established a restricted district, in which all known prostitutes were segregated and then submitted to rigid inspection and police control. On account of the establishment of this district, and the conditions which surrounded it, a recall election was held, and a mayor elected who announced his position in his campaign substantially as follows: "If I am elected mayor, I will not allow a restricted district to exist in the city. I do not believe that public prostitution is necessary." The Health Commissioner goes on to report that the new mayor has carried out his pre-election promises, that the city was freer from prostitutes than it had been in twenty-two years, and that venereal infection in the city had been reduced to a minimum. It is only fair to add that the chairman of the reporting committee, while he presented this report as worth considering, apparently did not agree with the new Mayor that public prostitution was unnecessary.

Until the medical profession and public officials can get together regarding the best methods available for controlling or eliminating prostitution, something can be accomplished by the public health officials. Whatever our attitude toward the general reporting of venereal diseases, physicians should be required at least to report to the Health Officer every case coming to their attention among prostitutes. The police officials should be asked to notify proprietors of houses of prostitution that they are to report all known cases of venereal infection. The Health Officer or a deputy should visit all known establishments at frequent intervals, and unannounced, for the purpose of making a minute examination of every inmate. When cases are discovered, means should be devised for keeping them under observation, restraining them from pursuing their vocation, and, if possible, securing for them proper treatment. In the event of opposition, the house should be placarded, so that prospective patrons may be forewarned.

The majority of all cases of venereal infection can be traced back to the public prostitute. If prostitutes, under a system of inspection, are subjected to a sufficiently thorough examination, including invariable resort to the microscope, the result, in the end, must be their practical elimination. Uninfected prostitutes are so rare that houses would soon have to go out of business from lack of eligible candidates.

The question of including venereal diseases among those which are reportable, is one giving rise to considerable discussion among sanitarians. Within this state, a system of reporting has recently been introduced in the City of New

York. There are, obviously, certain well defined reasons why a large number of persons, including some physicians, would fight to the last ditch against the enforcement of such a regulation. On the other hand, there are certain very good reasons why reports should be required. Gonorrhoea and syphilis are at least as infectious, and no less serious than are a number of diseases required to be reported at present. To omit them from the list confirms the erroneous impression that they are of small importance. A persistent, if partially unsuccessful, attempt at enforcement would have an inhibitory and educational influence. The reports received would make it possible to locate and eliminate at least some of the conspicuous foci of infection, and to submit infected persons, both men and women, to an "observation quarantine" similar to that advised for typhoid and tuberculosis.

To facilitate diagnosis and encourage reporting, the laboratories of the state and of municipalities should be in a position to lend their aid.

Finally, existing sources of infection should be eliminated by proper treatment. This means a campaign of education within our own profession, or a resort to the specialist. Many of us, as general practitioners, have to admit that we are competent to treat only the simple cases of gonorrhoea, and that it is with difficulty that we retain the confidence of our patients with this disease long enough to keep them until a cure is effected. Contributing to the unsettled state of mind of the patient is the impression, engendered by the methods of advertising specialists, and encouraged by some regular practitioners, that a cure has been effected when the gonorrhoeal discharge has been temporarily checked, and that such a cure ought to be brought about in a few days.

I have long believed that, in communities where specialists in this and other departments of medicine are not easily available, if physicians would co-operate with each other, each giving particular attention to one or more branches, in connection with his general practice, it would react to the advantage both of patient and physician.

In conclusion, every man who is not afraid to meet issues face to face, realizes that, in the past half century, the medical profession has been losing ground in the estimation of the laity, notwithstanding the fact that the science of medicine is more nearly an exact science than ever before, and that educational requirements have been constantly increasing. It is high time we took note of "the handwriting on the wall." If we are to return to our own, in the esteem of the public, it must be, not alone through the seeking of higher professional and scientific attainments, but through becoming the avowed champions of the people, in their struggle against preventable diseases. Nowhere is there greater need for the knight of valor than in the fight against the so-called "social" diseases.

DEPARTMENT OF PUBLIC CHARITIES.

CLINICS WHICH WILL BE HELD IN THE HOSPITALS OF THE DEPARTMENT DURING FEBRUARY, 1913.

MONDAYS.

City Hospital	Surgery	Dr. Dawbarn	2.30 P. M.
Neurological Hospital	Neurology	Dr. McPhee	2.00 P. M.
Cumberland St. Hosp. (Brooklyn)	Surgery	Dr. Pallister	2.30 P. M.
	Oral Surgery	Dr. Shea	4.30 P. M.

TUESDAYS.

City Hospital	Dermatology	Dr. Bronson	2.00 P. M.
	Ophthalmology	Dr. Gilfillan	2.00 P. M.
N. Y. City Children's Hospitals and Schools, Randall's Island	Orthopedics	Dr. Ogilvy	10.00 A. M.
Cumberland St. Hosp. (Brooklyn)	Surgery	Dr. Ritch	2.30 P. M.
	Ophthalmology and Otology	Dr. Warner	3.00 P. M.
Kings County Hospital (Brooklyn)	Genito-urinary surgery	Dr. Morton	2.00 P. M.
	Genito-urinary surgery	Dr. Fraser	2.00 P. M.
	Obstetrics	Dr. Commiskey	10.00 A. M.
	Surgery	Dr. Bristow	2.00 P. M.
Coney Island Hospital	Medicine	Drs. Nash, Hall, Hegeman and Byington	3.30 P. M.
	Surgery	Drs. Fisk, Bogart, Mur- phy and Lack	10.30 A. M.

WEDNESDAYS.

City Hospital	Genito-urinary surgery	Dr. Greene	2.00 P. M.
	Medicine	Dr. Quimby	1.30 P. M.
	Obstetrics	Dr. Dorman	2.30 P. M.
	Surgery	Dr. Dawbarn	9.00 A. M.
Metropolitan Hospital	Surgery	Drs. Bagg and Honan	2.30 P. M.
Feb. 5 and 26	Laryngology and Rhinology	Dr. Foster	2.30 P. M.
Feb. 5 and 26	Genito-urinary surgery	Dr. Carleton	2.30 P. M.
Feb. 5	Medicine	Dr. Rankin	2.30 P. M.
Feb. 5 and 19	Medicine	Dr. Laidlaw	2.30 P. M.
Feb. 26	Medicine	Dr. Klots	2.30 P. M.
Feb. 19	Ophthalmology and Otology	Dr. Boyle	2.30 P. M.
Feb. 19	Neurology	Dr. Howard	2.30 P. M.
Feb. 19	Electro-therapeutics	Dr. Royle	2.30 P. M.
Feb. 26	Obstetrics	Dr. Stover	2.30 P. M.
Neurological Hospital	Neurology	Dr. Maloney	9.00 A. M.
Cumberland St. Hosp. (Brooklyn)	Gynecology	Dr. Pierson	2.30 P. M.
Kings County Hospital (Brooklyn)	Dermatology	Dr. Winfield	1.00 P. M.
	Orthopedics	Dr. Truslow	9.00 A. M.
	Orthopedics	Dr. Napier	2.00 P. M.
Coney Island Hospital	Pediatrics	Drs. Beck, McQuillan, Pendleton and Van Wart	3.30 P. M.

THURSDAYS.

City Hospital	Gynecology	Dr. Stearns	2.00 P. M.
	Medicine	Dr. Evans	9.00 A. M.
	Medicine	Dr. Brooks	2.30 P. M.
Cumberland St. Hosp. (Brooklyn)	Laryngology and Rhinology	Dr. Stewart	4.00 P. M.
	Surgery	Dr. Ritch	2.30 P. M.
Kings County Hospital (Brooklyn)	Gynecology	Dr. McNamara	1.30 P. M.
	Obstetrics	Drs. Judd and Commiskey	10.00 A. M.
	Otology	Dr. Alderton	1.00 P. M.
	Pediatrics	Dr. Parrish	4.00 P. M.
	Surgery	Dr. Bristow	2.00 P. M.
Coney Island Hospital	Gynecology	Drs. MacEvitt and Mills	10.30 A. M.
	Gynecology	Drs. Mayne and Rankin	10.30 A. M.
	Surgery	Drs. Murphy and Lack	3.00 P. M.

FRIDAYS.

City Hospital	Laryngology and Rhinology	Dr. Dougherty	2.30 P. M.
Neurological Hospital	Neurology	Dr. Abrahamson	9.00 A. M.
Cumberland St. Hosp. (Brooklyn)	Ophthalmology and Otology	Dr. Warner	3.00 P. M.
	Surgery	Dr. Pallister	2.30 P. M.
	Oral Surgery	Dr. Shea	4.30 P. M.

SATURDAYS.

City Hospital	Pathology	Dr. Larkin	2.00 P. M.
Neurological Hospital	Neurology	Dr. Jelliffe	2.00 P. M.
N. Y. City Children's Hospitals and Schools, Randall's Island	Mental defectives, types; Epileptics.	Dr. Clark	2.00 P. M.
		Dr. Atwood	2.00 P. M.
Kings County Hospital (Brooklyn)	Medicine	Dr. Stivers	3.30 P. M.
	Obstetrics	Dr. Commiskey	10.00 A. M.
	Surgery	Dr. Bristow	2.00 P. M.

All registered physicians, visiting and resident, and medical students, are cordially invited to attend these clinics.

Cards of Admission, valid until October 1, 1913, may be obtained at the *Academy of Medicine, 17 West 43d Street, Manhattan*, and at the *Medical Society of the County of Kings, 1313 Bedford Avenue, Brooklyn*, as well as from the secretaries of the several medical colleges.

LEGISLATIVE NOTES.

COMMISSION TO INVESTIGATE PUBLIC HEALTH ADMINISTRATION.

Governor Sulzer has appointed the following Commission to inquire into matters affecting Public Health and Public Health Administration:

1. Hermann M. Biggs, M.D., chairman, New York; General Medical Officer, New York City Health Department.

2. Homer Folks, secretary, Yonkers: Secretary State Charities Aid Association.

3. John A. Kingsbury, assistant secretary, Yonkers: General Agent Association for Improving the Condition of the Poor.

4. Edward R. Baldwin, Saranac Lake, physician in charge Trudeau Laboratory for Tuberculosis Investigation.

5. Ansley Wilcox, Buffalo: president of the Charity Organization Society of that city.

6. Miss Adelaide Nutting: professor Nursing and Health in Teachers' College, Columbia University.

7. John C. Otis, M.D.: president Board of Health of Poughkeepsie.

8. W. E. Milbank, M.D., Albany. Prominently connected with the health work of the state.

In connection with the appointment of this commission the following statements were made:

That in 1911 there were 145,538 deaths due to pulmonary tuberculosis, other forms of tuberculosis, typhoid fever, measles, whooping cough, diphtheria, scarlet fever, syphilis, diarrhoea and enteritis (under two years of age), many, if not all of which were preventable. It was also recommended that:

"The commission call upon experts in all lines of public health work for their opinions on these matters, that they inform themselves as to the existing facilities and resources of the State Health Department, that they study the relations between state and local health authorities as they are, and as they ought to be; the relations between health authorities and the medical profession, the extent to which needed hospital provision has actually been made by local authorities for the isolation of contagious diseases which cannot otherwise be adequately segregated, the best means of making the latest advances in sanitary science and preventive medicine widely known among the people generally, and, that on the basis of the facts ascertained they submit to the governor a constructive program for putting the public health work of the state on a more efficient and adequate basis."

The first meeting of this commission was held on January 20th and the second one on the 23rd.

STANDING COMMITTEES OF THE ASSEMBLY FOR 1913.

On the Judiciary.—M. Goldberg, New York County; P. P. McElligott, New York County; E. Weil, New York County; L. A. Cuvillier, New York County; M. Greenberg, New York County; C. D. Donohue, New York County; L. D. Gibbs, New York County; V. A. O'Connor, Kings County; M. C. O'Brien, Westchester County; C. W. Phillips, Monroe County; J. L. Sullivan, Chautauqua County; C. J. Vert, Clinton County; M. Schaap, New York County.

On Affairs of Cities.—T. B. Caughlan, New York County; P. J. McGrath, New York County; A. J. Kennedy, Queens County; H. Heyman, Kings County; T. P. Madden, Westchester County; R. R. McKee, Richmond County; J. Kerrigan, New York County; J. C. Campbell, New York County; S. G. Daley, Onondaga County; G. Geoghan, Erie County; H. E. Allen,

Oneida County; T. K. Smith, Onondaga County; C. H. Baumes, Orange County.

On Rules.—A. E. Smith, New York County; A. J. Levy, New York County; R. P. Bush, Chemung County; E. D. Jackson, Erie County; J. J. McKeon, Kings County; H. J. Hinman, Albany County; J. R. Yale, Putnam County.

On Public Health.—M. McDaniels, Tompkins County; J. Schifferdecker, Kings County; A. P. Squire, Schenectady County; J. W. Telford, Delaware County; T. Kane, New York County; S. J. Burden, Queens County; H. W. Kornobis, Kings County; V. M. Bovie, Westchester County; J. C. Campbell, New York County; D. H. Knott, New York County; F. M. Bradley, Niagara County; N. F. Webb, Cortland County; J. B. Fuller, Oneida County.

STANDING COMMITTEES OF THE SENATE FOR 1913.

On Judiciary.—J. F. Murtaugh, S. J. Stilwell, J. D. McClelland, H. W. Pollock, A. J. Griffin, H. H. Torborg, G. A. Blauvelt, J. A. Foley, H. P. Velte, H. P. Coats, R. W. Thomas, J. H. Walters, T. H. Bussey, R. F. Wagner, E. R. Brown.

On Cities.—T. H. Cullen, J. J. Frawley, S. J. Ramsperger, J. A. Foley, S. J. Stilwell, J. C. Fitzgerald, F. J. Sanner, L. H. White, J. F. Malone, D. J. Carroll, G. F. Argetsinger, H. M. Sage, G. F. Thompson, J. D. Stivers, H. Salant, R. F. Wagner, E. R. Brown.

On Public Health.—J. Seeley, W. D. Peckham, A. J. Griffin, S. J. Stilwell, J. W. McKnight, A. J. Palmer.

On Rules.—R. F. Wagner, T. H. Cullen, S. J. Ramsperger, C. D. Sullivan, E. R. Brown.

BILLS INTRODUCED INTO THE LEGISLATURE.

STATE OF NEW YORK.

No. 155. Int. 153.

IN SENATE.

January 14, 1913.

Introduced by Mr. McClelland—read twice and committed to the Committee on the Judiciary.

AN ACT to create a commission to investigate the present condition and extent of the practice of experimentation on living animals in this state and to report what changes, if any, in the existing laws, are desirable to protect animals from unnecessary suffering in this practice without unreasonably interfering with legitimate scientific research.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The governor is hereby empowered to appoint a commission which shall consist of five members, two of whom shall be physicians or persons experienced in the practice of vivisection and residing within this state, two of whom shall be active members of some organization within this state having for its purposes the prevention of cruelty in animal experimentation, and the remaining member of which commission shall be appointed by the governor at large.

§ 2. Such commission shall investigate and report the present condition and extent of the practice of experimentation on living animals in this state and the amount of avoidable cruelty involved therein; also make a full inquiry into the present condition of the law of this state for the protection or regulation of scientific investigation or research of this character; also consider the condition and effectiveness of the law for the prevention of abuse in animal experimentation or of

unnecessary cruelty to animals therein. It shall inquire what further legislation, if any, may be needed to prevent unnecessary suffering of animals through such practice or its abuse, without interfering with properly conducted and legitimate scientific experiments by competent experts. For these purposes the said commission is hereby authorized to investigate the practice as it exists, to send for persons or papers, to administer oaths and to examine witnesses and papers respecting all matters pertaining to this subject. This commission shall serve without compensation, and shall make a full and final report to the governor within one year after its appointment, including such recommendations for legislation as in its judgment may seem proper.

§ 3. This act shall take effect immediately.

JANUARY 1 TO JANUARY 24, 1913.
IN ASSEMBLY.

Amending Public Health Law by adding new article 13-a, providing for the issuance of licenses by the State Regents, for the practice of midwifery. By Mr. M. Greenberg. To Public Health Committee. Printed and Int. Nos. 41.

Establishing the "New York State Commission for the Blind," consisting of five persons to be appointed by the governor within sixty days after the passage of the act, two of whom shall be blind persons, \$40,000 being appropriated for expenses of first years. (Same as S. 41.) By Mr. Jackson. To Ways and Means Committee. Printed and Int. Nos. 47.

To incorporate the Harriman Research Laboratory for the purpose of conducting, assisting and encouraging scientific investigation, experimentation and research into sciences, arts of hygiene and allied subjects into the nature and causes of disease, the incorporators being William G. Lyle, M.D., Lewis R. Morris, M.D., Mary Harriman, Wirt Howe, and Robert L. Gerry. (Same as S. 6.) By Mr. McElligott. To Judiciary Committee. Printed and Int. Nos. 48.

Amending Sections 239 and 318 of the Public Health Law prohibiting the issuance of a license to a pharmacist who is an habitual drunkard or habitually addicted to the use of morphine, opium, cocaine or other drugs having a similar effect, and providing for the preparation and furnishing by the State Commissioner of Health to local health officers or boards of official prescription blanks for distribution to physicians. (Same as S. 26.) By Mr. Kerrigan. To Public Health Committee. Printed and Int. Nos. 52.

Amending Section 1746 of the Penal Law by providing that the sale of cocaine, eucaine and other drugs must be in accordance with the provisions of Section 318 of the Public Health Law as proposed to be amended. (Same as S. 25.) By Mr. Kerrigan. To Public Health Committee. Printed and Int. Nos. 53.

Amending subdivision 6, Section 47, County Law, authorizing county boards of supervisors to make an appropriation for maintaining a tuberculosis hospital. By Mr. McDaniels. To Internal Affairs Committee. Printed and Int. Nos. 125.

Amending Section 45, County Law, prohibiting the establishment of tuberculosis hospitals within the limits of a city or village. (Same as S. 97.) By Mr. McDaniels. To Internal Affairs Committee. January 15. Reported to second reading amended Printed and Nos. 126, 249. Int. No. 126.

Amending Section 346, Public Health Law, by authorizing the State Institute for the study of malignant diseases to receive gifts, legacies and bequests and to use the same as the board of trustees may determine for advancing its objects. (Same as S. 130.) By Mr. Small. To Public Health Committee. Printed No. 174. Int. No. 170.

Amending the State Charities Law by adding new article 24, by providing for the establishment of a State Hospital at some suitable locality, for the treatment of intermediate and advanced pulmonary tuberculosis, and

appropriating \$150,000 therefor. By Mr. McGrath. To Ways and Means Committee. Printed No. 197. Int. No. 194.

Appropriating \$166,392 and reappropriating \$60,500 for improvements at the State Hospitals for the Insane. By Mr. Bush. To Ways and Means Committee. Printed No. 204. Int. No. 201.

Amending the Public Health Law by adding new Section 334-a, providing that no wall or ceiling in a building or room used for living or working purposes in cities or villages having a population of 10,000 or more inhabitants shall be repapered or recalcimined until all the old paper or calcimine has been removed therefrom and such wall or ceiling thoroughly cleaned. (Same as S. 152.) By Mr. P. J. Kelly. To Public Health Committee. Printed No. 218. Int. No. 215.

Amending Subdivision 3, Section 230, and Section 676, Greater New York Charter, increasing from \$75,000 to \$150,000 the amount of money which may be expended for the relief of the poor adult blind, and providing that distribution shall be made in semi-annual payments within ten days after the first day of July and December. By Mr. McKeon. To Cities Committee. Printed No. 280. Int. No. 276.

Amending Section 316, Public Health Law, by extending the provisions with relation to the reception of unclaimed cadavers, now applicable to medical colleges, to all other colleges or schools incorporated under the laws of the state, for the purpose of teaching medicine, anatomy or surgery, and to universities, having post-graduates courses of instruction. By Mr. Bush. To Public Health Committee. Printed No. 302. Int. No. 278.

Amending Section 252, Public Health Law, by permitting the State Regents, upon evidence satisfactory to them, to waive the examination of any person for the position of a registered nurse, who shall have been graduated before or in training on April 24, 1903, and thereafter graduated; and of persons now engaged in a general hospital prior to 1903. By Mr. Goldberg. To Public Health Committee. Printed No. 315. Int. 311.

Providing for the appointment in Syracuse of a board of examiners in midwifery, consisting of three members, two of whom shall be regularly qualified physicians and surgeons of at least five years' practice and the health officer of said city, with power to regulate and restrain the practice of midwifery by others than legally authorized physicians. (Same as S. 258.) By Mr. T. K. Smith. To Public Health Committee. Printed No. 371. Int. 367.

Amending Chapter 410, Laws of 1832, by providing that each coroner of New York City shall appoint a coroner's physician to any vacancy, such vacancy now being filled by the Board of Coroners, and by making \$3,000 the minimum salary of a coroner's physician, instead of the maximum salary, as at present. By Mr. Kennedy. To Cities Committee. Printed No. 385. Int. 382.

Amending Section 16-a of the Public Health Law, relative to cold storage, by providing among other things that eggs, butter, flesh, fowl or fish shall not be kept in storage for more than three months and any other kind of food for a period longer than six months, and providing that cold storage warehousemen shall not receive any fowl from which the head or feet, or both, have been removed, or any fish from which the head has been removed, except smoked, cured or salted fish; and making a violation of the Cold Storage Law a misdemeanor. By Mr. Hamilton. To Public Health Committee. Printed No. 405. Int. 403.

Amending Section 140, General City Law, by extending to cities of the second and third class, the power now possessed by cities of the first class in relation to the erection of tuberculosis hospitals and prohibiting the location of such hospitals within the corporate limits of any city or village. (Same as S. 234.) By Mr. Seely. To Cities Committee. Printed No. 407. Int. 405.

Providing for the appointment by the mayor of Elmira of a board of five water commissioners for the purpose of maintaining a city water department and building a city water works system. (Same as S. 373.) By Mr. Bush. To Cities Committee. Printed No. 490. Int. 485.

Legalizing an issue of \$230,000 of bonds for the construction of a sewer system in the town of Harrison, Westchester County. (Same as S. 362.) By Mr. O'Brien. To Judiciary Committee. Printed No. 499. Int. 494.

Amending the Labor Law by adding new Section 84-a, requiring every part of a factory building and of the premises thereof and the yards, courts, passages, areas or alleys connected with or belonging to the same to be kept clean and free from any accumulation of dirt, filth, rubbish or garbage. (Same as S. 391.) By Mr. Jackson. To Labor and Industries Committee. Printed No. 521. Int. 510.

Amending Section 84, Labor Law, by providing that walls and ceilings in factories shall be lime washed or painted except when properly tiled or covered with slate or marble with a finished surface, such lime wash or paint to be renewed whenever necessary as required by the Commissioner of Labor. (Same as S. 388.) By Mr. Jackson. To Labor and Industries Committee. Printed No. 530. Int. 519.

To amend the General City Law, in relation to sanitary conveniences in cities of the first class. By Mr. M. Greenberg. To Committee on Affairs of Cities. Printed No. 547. Int. 533.

To amend the General City Law, in relation to the times and places for keeping drug stores open in cities of the first class. By Mr. M. Greenberg. To Committee on Affairs of Cities. Printed No. 548. Int. 534.

Amending Sections 330a-330k, Charter of the City of Oswego, in relation to the construction of sewers and sewage disposal plants and other necessary construction incidental thereto and to the issuance of bonds therefor. By Mr. Sweet. To Committee on Affairs of Cities. Printed No. 559. Int. 545.

To amend the tax law, exempting from taxation property of a municipal corporation not within the corporate limits, but used or maintained for hospital, infirmary or benevolent purposes. By Mr. Small. To Committee on Taxation and Retrenchment. Printed No. 568. Int. 554.

Amending Section 1341a, Greater New York charter, in relation to inspection of tenement houses. By Mr. Kennedy. To Committee on Affairs of Cities. Printed No. 569. Int. 555.

To amend the Inferior Courts Act of the City of New York, in relation to examination of children to determine their mental and physical condition. By Mr. Gibbs. To Committee on Codes. Printed No. 605. Int. 591.

IN SENATE.

To incorporate the Harriman Research Laboratory for the purpose of conducting, assisting and encouraging scientific investigation, experimentation and research into sciences, arts of hygiene and allied subjects into the nature and causes of disease, the incorporators being William G. Lyle, M.D., Lewis R. Morris, M.D., Mary Harriman, Wirt Howe and Robert L. Gerry. (Same as A. 48.) By Mr. Wagner. To Judiciary Committee. Printed and Int. Nos. 6. Reported to Committee on the Whole.

Amending Section 1746 of the Penal Law by providing that the sale of cocaine, eucaïne and other drugs must be in accordance with the provisions of Section 318 of the Public Health Law as proposed to be amended. (Same as A. 53.) By Mr. Boylan. To Codes Committee. Printed and Int. Nos. 25.

Amending Sections 239 and 318 of the Public Health Law prohibiting the issuance of a license to a pharmacist who is an habitual drunkard or habitually addicted to the use of morphine, opium, cocaine or other

drugs having a similar effect, and providing for the preparation and furnishing by the State Commissioner of Health to local health officers or boards of official prescription blanks for distribution to physicians. (Same as A. 52.) By Mr. Boylan. To Health Committee. Printed and Int. Nos. 26.

Establishing the "New York State Commission for the Blind," consisting of five persons to be appointed by the governor within sixty days after the passage of the act, two of whom shall be blind persons, \$40,000 being appropriated for expenses of first year. (Same as A. 47.) By Mr. Malone. To Finance Committee. Printed and Int. Nos. 41.

Amending Section 45, County Law, prohibiting the establishment of tuberculosis hospitals within the limits of a city or village. (Same as A. 126.) By Mr. Seeley. To Internal Affairs Committee. Printed No. 98. Int. 97.

Amending Section 346, Public Health Law, by authorizing the State Institute for the Study of Malignant Diseases to receive gifts, legacies and bequests and to use the same as the board of trustees may determine for advancing its objects. (Same as A. 170.) By Mr. Wende. To Public Health Committee. Printed No. 132. Int. 130.

Providing for the acceptance of lands in the town of Concord, New York, to be used for an animal farm and experiment station in connection with the State Institute for the Study of Malignant Diseases, and appropriating \$20,000 for buildings and improvements thereon. By Mr. Wende. To Finance Committee. Printed No. 133. Int. 131.

Amending the Public Health Law by adding new Section 334-a, by providing that no wall or ceiling in a building or room used for living or working purposes in cities or villages having a population of 10,000 or more inhabitants shall be repapered or recalcimined until all the old paper or old calcimine has been removed therefrom and such wall or ceiling thoroughly cleaned. (Same as A. 215.) By Mr. Wende. To Public Health Committee. Printed No. 154. Int. 152.

Creating a commission to investigate the present condition and extent of the practice of experimentation upon living animals, such commission to consist of five members to be appointed by the governor, two of whom shall be physicians or persons experienced in the practice of vivisection, two to be active members of some organization for the prevention of cruelty in animal experimentation, the remaining member to be appointed at large. By Mr. McClelland. To Judiciary Committee. Printed No. 155. Int. 153.

Amending Section 140, General City Law, extending to cities of the second and third class the power now possessed by cities of the first class with relation to the erection of tuberculosis hospitals, and prohibiting the location of such hospitals within the corporate limits of any city or village. (Same as A. 405.) By Mr. Patten. To Cities Committee. Printed No. 239. Int. 234.

Amending Section 319, Public Health Law, prohibiting the establishment of tuberculosis hospitals within the limits of a city or village. By Mr. Wilson. To Public Health Committee. Printed No. 268. Int. 263.

Amending subdivision 3, Section 230, and Section 676, Greater New York Charter, by increasing from \$75,000 to \$150,000 the amount of money which may be expended for the relief of the poor adult blind, and providing that distribution shall be made in semi-annual payments within ten days after the first day of July and December. (Same as A. 276.) By Mr. Heffernan. To Cities Committee. Printed No. 283. Int. 276.

Amending Sections 70, 71 and 75, New York City Inferior Criminal Courts Act, by providing for a separate court for women. By Mr. Herrick. To Cities Committee. Printed No. 288. Int. 281.

Amending the Charter of the village of Batavia by authorizing the trustees to raise by taxation the necessary moneys for the maintenance and operation of a new sanitary trunk sewer and extensions, and for

tiring sewer bonds. (Same as A. 284.) By Mr. Bussey. To Villages Committee. Printed No. 336. Int. 329.

Amending the Town Law by adding new Sections 246 to 248, inclusive, authorizing boards of sewer commissioners in any town where a sewer district has been laid out to construct one or more laterals upon one or more streets within the district from time to time entirely at the expense of the owners of land fronting on said streets, provided a petition therefor be presented to the board signed by a majority of the property owners. By Mr. Healy. In Internal Affairs Committee. Printed No. 373. Int. 359.

Legalizing an issue of \$230,000 of bonds for the construction of a sewer system in the town of Harrison, Westchester County. (Same as A. 494.) By Mr. Healy. To Judiciary Committee. Printed No. 376. Int. 362.

Providing for the appointment by the mayor of Elmira of a board of five water commissioners for the purpose of maintaining a city water department, and building a city water works system. (Same as A. 485.) By Mr. Murtaugh. To Cities Committee. Printed No. 387. Int. 373.

Amending Section 84, Labor Law, by providing that walls and ceilings in factories shall be lime washed or painted except when properly tiled or covered with slate or marble with a finished surface, such lime wash or paint to be renewed whenever necessary as required by the Commissioner of Labor. (Same as A. 519.) By Mr. Wagner. To Labor and Industries Committee. Printed No. 406. Int. 388.

Amending the Labor Law by adding new Section 84-a, requiring every part of a factory building and of the premises thereof and the yards, courts, passages, areas or alleys connected with or belonging to the same to be kept clean and free from any accumulation of dirt, filth, rubbish and garbage. (Same as A. 510.) By Mr. Wagner. To Labor and Industries Committee. Printed No. 409. Int. 391.

To amend Section 671 of the Greater New York Charter, in relation to the temporary care of the insane and prisoners injured or dangerously ill. By Mr. Herrick. To Committee on Affairs of Cities. Printed No. 449. Int. 427.

NOTICE.

THE DISCONTINUANCE OF THE FREE ADMINISTRATION OF DIPHThERIA ANTITOXIN BY THE DEPARTMENT OF HEALTH OF THE CITY OF NEW YORK.

The free administration of antitoxin in diphtheria, and the performance of intubation, by the inspectors of the Department of Health of the City of New York, was begun in 1895, the objects in view being not only the cure and prevention of the spread of the disease, but also the education of the medical profession and the general public. These ends have been accomplished. The death rate of the disease in Manhattan and The Bronx has fallen from 15.9 per 10,000 of population in 1894 to 2.2 in 1912. In 1894 twenty-nine out of every one hundred cases reported, died. In 1912 less than nine cases out of every hundred died. Since 1895 almost 40,000 cases have been injected with antitoxin furnished by the Department of Health, and of these, less than six per cent. proved fatal. Finally, the records show that at the present day practically every case of diphtheria receives antitoxin.

On and after February 1st, 1913, therefore, the present system of free administration by inspectors of the Department of Health, of diphtheria antitoxin and performance of intubation at the homes of the patients, at the request of attending physicians, will be discontinued. After that date, when it becomes necessary for the Department of Health to administer antitoxin or perform intubation in any case of diphtheria, the patient will be at once removed to one of the hospitals of the Department for further observation and treatment. Diphtheria antitoxin may still be obtained, free of charge, by physicians from supply stations at drug stores for use where payment for the same by the patient would be a hardship.

A PROTEST TO THE DEPARTMENT OF HEALTH.

BROOKLYN N. Y., October 21, 1912.

To the Editor:

In the matter of the application of the Department of Health to the Board of Estimate and Apportionment for the appropriation of a large sum to build and equip a hospital for the treatment of venereal diseases, we submit the following statements made on behalf of and by the order of the Medical Board of the Kings County and Branch hospitals through its executive committee.

We believe that the legitimate province of the Department of Health is the prevention and not the treatment of disease; that such an institution, if established, would reach so small a number of patients venereally infected, that it would have no appreciable influence in limiting the spread of venereal diseases; that at present the segregation of all patients so suffering is entirely impracticable; that the existing institutions are amply able to take care of the demands made on them by this class of patients; and that a municipal department has no right to assume the functions of a practicing physician.

The publication of this protest will give to the profession of the city, information of this new attempt on the part of the Department of Health to encroach on another field of professional work:

To the Honorable ALFRED E. STEERS, President of the Borough of Brooklyn, and the Budget Committee of the Board of Estimate and Apportionment, City of New York.

We protest against granting the appropriation for the hospital for patients suffering from venereal diseases, proposed by the Department of Health, to be under its jurisdiction and management on the following grounds:

1. That the logical function of this municipal department is the prevention and not the treatment of disease.

2. That such a hospital is, as a matter of demonstrable fact, entirely unnecessary and that its construction and maintenance would be a source of expense to the city, absolutely unjustified, for the reason that the hospitals of the Department of Charities are amply sufficient to treat, in isolation, all patients of this nature who cannot afford private medical attendance. In the event of more facilities being needed, that could be added to the existing equipment of this department's hospitals at a fraction of the proposed initial expense and at no appreciable increase in the cost of maintenance.

3. That the expert and special treatment of such diseases is already provided for in the hospitals of this department and that an equivalent grade of medical supervision could not be retained by the Department of Health without a very great pecuniary outlay. Moreover the organization of such a service would inevitably lead to friction between two important departments of the municipal government and decrease the efficiency of the work of each.

4. That the Department of Health does not efficiently manage and control those communicable and contagious diseases now supposedly under its jurisdiction. It does not provide in its existing institutions for certain diseases known to be communicable and dangerous to keep in a general hospital, namely whooping cough, mumps and erysipelas. The attitude of some of the officials of the Department of Health is that cases of contagious disease occurring in a general hospital should be kept in the institution in which they originated, to the obvious jeopardizing of a great number (by reason of their various illnesses) unusually susceptible patients.

5. Speaking for the Kings County Hospital, the Kingston Avenue Hospital, of the Department of Health, now declines to take entire charge of the patients sent to it from our institution; for instance a patient with scarlet fever and a broken arm, or one with measles and pneumonia; holding that the non-contagious factors must be treated by our own staff.

How greatly less capable would its staff be to cope with the widespread complications of the various venereal diseases.

6. That in much less complex and delicate fields than the one projected, for instance, in the alleged medical inspection of school children; while the intent of the Department of Health may have been good, its practical application has been productive of a great deal of hardship to parents and an infinity of harm to pupils, by reason of the entire incapability of many of its inspectors to pass on conditions of which they have not the slightest accurate knowledge; and also by reason of utterly incompetent nurses who, at the instigation of, and with the countenance of the Department of Health, are continuously breaking the spirit, if not the letter, of the state laws regulating the practice of medicine.

7. That in many other phases of its activities the Department of Health far transcends the most liberal interpretation of its legal powers and arbitrarily assumes to define the rights of the citizen in his relation with his medical attendant with the privilege of following the latter's advice, arrogating a censorship over his intimate and personal affairs, entirely unconstitutional and equally intolerable in no direction more clearly exemplified than in this, its latest demand.

For these reasons we ask for a denial of the request of the Department of Health for this appropriation.

CALVIN F. BARBER, *President Medical Board.*
S. J. McNAMARA, *Chairman Executive Committee.*
H. ARROWSMITH, *Secretary (pro tempore).*
WILLIAM BROWNING,
JOHN R. STIVERS,

Members of the Executive Committee.

H. H. MORTON, *Attending Genitourinary Surgeon.*

The Medical Society of the State of New York

MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held at the Genesee Valley Club, Rochester, December 6, 1912, at 10 A. M. Dr. John F. W. Whitbeck, President, in the chair. Dr. Wisner R. Townsend, Secretary.

On roll call by the secretary the following answered to their names:

John F. W. Whitbeck, Robert P. Bush, William F. Campbell, Henry A. Eastman, Fred G. Fielding, Daniel B. Hardenbergh, R. Paul Higgins, Alexander Lambert, Wesley T. Mulligan, Herbert B. Smith, James K. Stockwell, Wisner R. Townsend and Joshua M. Van Cott.

Dr. Gleason telegraphed his inability to be present and Dr. Chase telephoned the secretary to the same effect.

Dr. Parker Syms was present to represent the Committee on Scientific Work, the chairman, Dr. Harris, being in Europe.

The minutes of the last meeting were read and approved.

A letter was read from Dr. Sylvester J. McNamara and others, protesting against the action of the Committee on Publication of the Council in refusing to print a letter entitled "A Protest to the Department of Health," which letter was afterwards printed in the *New York Medical Journal*, Nov. 2, 1912.

After a full discussion by most of the members present, Dr. Mulligan moved, Dr. Smith seconded, that the Council having heard the protest of Dr. McNamara against the action of the Committee on Publication of the Council of the Medical Society of the State of New York in refusing to print the letter published in the *New York Medical Journal*, Nov. 2, 1912, votes to sustain the action of the Committee. It is further

Resolved, That the questions included in the letter be referred to the Committee on Public Health for in-

vestigation, and report to the House of Delegates at its next annual meeting. Carried.

Moved by Dr. Fielding, seconded by Dr. Smith and carried, that the secretary be authorized to make the annual report of the Council and include therein a statement which was passed upon by the Committee in regard to the prosecution of illegal practitioners by the State Society.

Dr. Syms for the Committee on Scientific Work, reported progress.

The treasurer stated that with all bills paid to date the balance on hand was \$7,479.30.

Dr. Bush, chairman of the Committee on Legislation, asked the wishes of the Council in regard to the matters referred to the Committee on Legislation at the last meeting of the House of Delegates.

It was moved, seconded and carried, that the matters be referred back to the Committee for further consideration.

Dr. Mulligan, chairman of the Committee on Arrangements reported progress, and extended an invitation to the Council, which was accepted, to visit the various places where the different sections, House of Delegates, etc., would be located at the next annual meeting.

There being no further business the Council adjourned at 12.10 P. M.

WISNER R. TOWNSEND, Secretary.

The Committee on Experimental Medicine having been informed that those opposed to vivisection were sending lecturers to the different Granges throughout the State, have forwarded to the secretaries of these organizations, about 900 in number, the following letter:

January 18, 1913.

To the Members of the New York State Grange:

One of the most striking features of human progress in recent years is the progress that has been made in the prevention and treatment of disease. Notwithstanding the great blessings that have thus been brought to mankind, individuals are occasionally found who attempt to hamper medical advance. This spirit finds expression in opposition to scientific experimentation upon animals.

The Committee on Experimental Medicine of the Medical Society of the State of New York, which represents the physicians of the state, is thoroughly familiar with the methods adopted by the New York Antivivisection Society and the Vivisection Investigation League. The statements which the representatives of these societies make to the public concerning the methods of experimentation on animals and the aims and achievements of modern medicine are wholly untrustworthy and constitute unjustifiable and ignorant attacks upon estimable men.

The Medical Society of the State of New York requests of the members of your grange the privilege of a hearing and the opportunity of defense in case any representatives of the societies in question address you. It is always fair minded to hear both sides.

Respectfully,

Committee on Experimental Medicine,
WILLIAM H. PARK, Chairman.
JOHN S. THACHER, Secretary.

OUR ADVERTISERS.

The Committee on Publication once more desires to call the attention of the members of the society to the fact that it should be both their pleasure and duty to patronize those who are assisting the committee in publishing the state JOURNAL by placing their advertisements on its pages.

The committee carefully scrutinizes and examines all advertisements, and will not permit any fraudulent or unworthy ones to be inserted. It would, therefore, seem only proper that in return the readers of the JOURNAL should, in their turn, support those who are patronizing their official organ.

Medical Society of the State of New York

ANNUAL MEETING OF THE

HOUSE OF DELEGATES, APRIL 28, 1913.

PRELIMINARY SCIENTIFIC PROGRAM.

107TH ANNUAL MEETING, TO BE HELD AT
ROCHESTER, APRIL 29, 30, MAY 1, 1913.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.

Thomas J. Harris, M.D., Chairman, New York.

Henry L. Elsner, M.D., Syracuse.

Parker Syms, M.D., New York.

And the Officers of the Sections.

BY-LAWS, MEDICAL SOCIETY OF THE STATE OF NEW YORK,
CHAPTER X, SECTION 2.

"All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in the NEW YORK STATE JOURNAL OF MEDICINE."

GENERAL PROGRAM.

TUESDAY, APRIL 29, 1913, 11 A. M.

Convention Hall.

Invocation

Address by the President, John F. W. Whitbeck, M.D.,
Rochester.Address of welcome, by Hon. Hiram H. Edgerton,
Mayor of Rochester.Address, by Hon. Robert M. Searle, President, Chamber
of Commerce.Annual Oration on Medicine, "Certain Elementary Concepts
in Education Applied to Medicine," Prof. John
G. Adami, M.D., F.R.S., McGill Univ., Montreal.

TUESDAY, APRIL 29TH, 8.30 P. M.

General Meeting, Convention Hall. Open to the
public."Prevention and Cure of Cancer," Parker Syms,
M.D., New York.

2 P. M.

*Meeting of Five Sections.*Section on Medicine—Headquarters, Powers' Hotel;
meeting at same place.Section on Surgery—Headquarters, Hotel Seneca;
meeting at Convention Hall.Section on Eye, Ear, Nose and Throat—Headquarters,
Whitcomb Hotel; meeting at same place.Section on Pediatrics—Headquarters, Hotel Roches-
ter; meeting at same place.Section on Obstetrics and Gynecology—Headquarters,
Hotel Seneca; meeting at same place.

SECTION PROGRAMS.

SECTION ON MEDICINE.

Chairman, DeLancey Rochester, M.D., Buffalo.

Secretary, Norman K. MacLeod, M.D., Buffalo.

Place of Meeting—Powers' Hotel.

SYMPOSIUM ON DISEASES OF THE CIRCULATORY SYSTEM.

1. "The Polygraph," George W. Ross, M.D.,
Toronto, Ont.2. Title to be announced, Henry C. Buswell, M.D.,
Buffalo.3. Title to be announced, Harlow Brooks, M.D., New
York.4. "Pain and Other Clinical Manifestations of Myo-
carditis," Alexander Lambert, M.D., New York.5. "Cardio-sclerosis," Louis Faugères Bishop, M.D.,
New York.6. "Deduction Concerning Treatment of Cardio-
vascular System, based upon six years of institutional
treatment," Hubert Schoonmaker, M.D., Clifton Springs.7. "Etiology of Diseases of Heart," Nelson G. Rus-
sell, M.D., Buffalo.

SYMPOSIUM ON TUBERCULOSIS.

8. "Examination of Those Exposed, as a Factor in
the Prevention and Relief of Tuberculosis," John H.
Pryor, M.D., Buffalo.9. "Auscultation of the Acromion Process—Signifi-
cance in Apical Disease," Robert Abrahams, M.D., New
York.10. "Treatment of Pulmonary Tuberculosis by Arti-
ficial Pneumothorax," J. Woods Price, M.D., Saranac
Lake.11. "Tuberculin," Edward R. Baldwin, M.D., Saranac
Lake.12. "Control of Advanced Cases," Hermann M.
Biggs, M.D., New York.13. "Typhlo-albuminuria, Heinrich Stern, M.D., New
York.14. "Cases of Acute and Chronic Purpura Treated
by Animal Sera," Henry L. Elsner, M.D., Syracuse.15. "The Use of Powdered Normal Serum in the
Treatment of Hemorrhage," G. H. Clowes, M.D., Buf-
falo.16. "Experience with Salvarsan," Howard Fox, M.D.,
New York.17. "Experience with Salvarsan," E. Wood Ruggles,
M.D., Rochester.18. "Experience with Salvarsan," Herman F. L.
Ziegel, M.D., New York.19. "Cardio-spasmi," Anthony Bassler, M.D., New
York.20. "Dermatitis Herpetiformis, George H. Fox, M.D.,
New York.21. "Lantern Demonstration of Skin Disease,"
Grover W. Wende, M.D., Buffalo.JOINT SESSION OF THE SECTION ON MEDICINE WITH THE
SECTION ON SURGERY.

SYMPOSIUM ON DUODENAL ULCER.

22. "Diagnosis and Prognosis," James T. Pilcher,
M.D., Brooklyn.23. "Non-surgical Treatment," Charles G. Stockton,
M.D., Buffalo.Title to be announced, John B. Murphy, M.D., Chi-
cago, Ill.

Title to be announced, John B. Harvie, M.D., Troy.

SECTION ON SURGERY.

Chairman, Martin B. Tinker, M.D., Ithaca.
Secretary, Willis E. Bowen, M.D., Rochester.
Place of Meeting—Convention Hall.

JOINT SESSION OF THE SECTION ON SURGERY WITH THE SECTION ON MEDICINE.

SYMPOSIUM ON DUODENAL ULCER.

1. Title to be announced, John B. Murphy, M.D., Chicago, Ill.
2. Title to be announced, John B. Harvie, M.D., Troy.
"Diagnosis and Prognosis," James T. Pilcher, M.D., Brooklyn.
- "Non-surgical Treatment," Charles G. Stockton, M.D., Buffalo.

GENERAL SURGERY.

3. "The Surgery of the Abdomen" (exact title to be announced), R. C. Coffey, M.D., Portland, Oregon.
4. Title to be announced, Grant Madill, M.D., Ogdensburg.
5. "Conservation Treatment of the Injuries of the Hand," Vacil D. Bozovsky, M.D., Dunkirk.
6. "Possible Errors in the Diagnosis of Abdominal Cancer—A Plea for Exploratory Lapatotomy. Illustrative Cases." William S. Bainbridge, M.D., New York.
7. "Early Diagnosis of Malignant Tumors, Particularly as to the Wisdom and Value of Exploratory Operations," William B. Coley, M.D., New York.
8. "Operations Pertaining to the Bile Passages," Louis F. O'Neill, M.D., Auburn.
9. "Treatment of Large Ventral Hernia by Inversion," Irving S. Haynes, M.D., New York.

ORTHOPEDIC SURGERY AND SURGERY OF THE NERVOUS SYSTEM.

10. "Surgery of the Brain," Algernon T. Bristow, M.D., Brooklyn.
11. "Injuries of the Vertebral Column and Spinal Cord, and Indications for, and Results of, Surgical Treatment," Charles A. Elsberg, M.D., New York.
12. Title to be announced, Roswell Park, M.D., Buffalo.
13. "Prognosis in Infantile Paralysis," Wisner R. Townsend, M.D., New York.
14. "Importance of the Treatment of Weak Feet in Childhood," Brainerd H. Whitbeck, M.D., New York.
15. "Treatment of Fixed Scoliosis by the Abbott Jacket," Ralph R. Fitch, M.D., and Howard L. Prince, M.D., Rochester.

GENITO-URINARY SURGERY.

16. "Surgery of the Prostate," Hugh H. Young, M.D., Baltimore, Md.
17. "Some Aspects in Relation to the Chronic Gonorrhoeic, from the Standpoint of Surgery and Eugenics," James Vander Veer, M.D., Albany.
18. "X-ray in Genito-Urinary Surgery," Eugene W. Caldwell, M.D., and Harry M. Imboden, M.D., New York.
19. "The Surgery of the Bladder" (exact title to be announced), Paul M. Pilcher, M.D., Brooklyn.
20. "Accidental Bladder Injuries in Hernia Surgery, Based Upon 2,000 Personal Operations," William B. DeGarmo, M.D., New York.

SECTION ON EYE, EAR, NOSE AND THROAT.

Chairman, John E. Weeks, M.D., New York.
Secretary, Thomas H. Halsted, M.D., Syracuse.
Place of Meeting—Whitcomb Hotel.

EYE.

1. "Squint and Its Correction," John J. O'Brien, M.D., Schenectady.
2. "Importance of Ophthalmological Examinations in Immigrants," Martin Cohen, M.D., New York.
3. "Experiments on the Action of Certain Ocular Muscles," Lucien Howe, M.D., Buffalo.
4. "Some Uses of Cyanide of Mercury in Ophthalmology," Charles B. Meding, M.D., New York.
5. "Central Scotoma and Blind Spot Anomalies; Their Clinical Significance," Percy Fridenberg, M.D., New York.
6. "The Surgical Treatment of High Myopia," Walter E. Lambert, M.D., New York.

JOINT SESSION: EYE, EAR, NOSE AND THROAT.

Symposium on the Hypophysis:

7. "The Physiology of the Hypophysis," Prof. Sutherland Simpson, Ithaca.
8. "Ocular Disturbances of Hypophyseal Diseases," Arnold Knapp, M.D., New York.
9. "Intra-nasal Approach to the Hypophysis," Lewis A. Coffin, M.D., New York.
10. "Surgical Aspects of the Pituitary Question," Harvey W. Cushing, M.D., Boston, Mass.
11. "Demonstration of a Model Illustrating the Technique of the Intra-nasal Operation on the Lachrymal Apparatus," Sidney Yankauer, M.D., New York.
12. "History of a Case of Dacryocystitis presenting several Complications, including Orbital and Optic Neuritis," Albert C. Snell, M.D., Rochester.

EAR.

13. "The Economic and Social Aspect of Deafness," Harold Hays, M.D., New York.
 14. "The Conservative Treatment of Chronic Aural Suppuration," Robert L. Loughran, M.D., New York.
 15. "Acute Thyroiditis as a Complication of Acute Tonsillitis," Clement F. Theisen, M.D., Albany.
- Symposium on Labyrinthitis:
16. "Differential Diagnosis of Acute, Serous and Purulent Labyrinthitis," Irving W. Voorhees, M.D., New York.
 17. "Indications for Operative Interference in Labyrinthitis," Frederick Whiting, M.D., New York.
 18. "Technique of the Labyrinth Operation," Edward B. Dench, M.D., New York.
 19. "Tubercular Affections of the Ear," Thomas H. Farrell, M.D., Utica.

NOSE AND THROAT.

20. "Vincent's Angina," Gerhard H. Cocks, M.D., New York.
21. "Indications for Operation on the Nasal Septum," James F. McCaw, M.D., Watertown.
22. "Cleft Palate," J. M. Ingersoll, M.D., Cleveland, Ohio.
23. "Experiences with Direct Laryngoscopy, Bronchoscopy and Esophagoscopy," John McCoy, M.D., New York.
24. "Nasal Obstruction as a Predisposing Factor in the Etiology of Tuberculosis," James E. McCambridge, M.D., Poughkeepsie.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Chairman, William M. Brown, M.D., Rochester.
Secretary, Ross McPherson, M.D., New York.
Place of Meeting—Hotel Seneca.

1. "Cancer of the Uterus, Importance of Early Diagnosis," LeRoy Broun, M.D., New York.
2. "Two Unusual Cases with Presentation of Specimens," Eugene W. Belknap, M.D., Syracuse.
3. "Invalidism in Women from Prolonged Metrorrhagic or Menorrhagia," Walter B. Chase, M.D., Brooklyn.
4. "Contraction Ring Dystocia," Paul T. Harper, M.D., Albany.
5. "Pituitrin in Obstetrics," James K. Quigley, M.D., Rochester.
6. "Some Diseases of the Vulva and Their Treatment," Samuel M. Brickner, M.D., New York.
7. "Nephrocoloptosis in Women," Howard W. Longyear, M.D., Detroit, Mich.
8. "The Conservative Treatment of Puerperal Eclampsia," E. Gustave Zincke, M.D., Cincinnati, O.
9. "Emptying the Uterus as a Method of Treatment of Puerperal Eclampsia," Reuben Peterson, M.D., Ann Arbor, Mich.
10. "A Preliminary Report on the Treatment of Toxemias of Pregnancy with Placental Serum," Abraham J. Rongy, M.D., New York.
11. "The Principles Underlying the Successful Treatment of Sterility in Women," Edward Reynolds, M.D., Boston, Mass.

12. "The Role of Ovarian Disease in the Production of Sterility," George W. Kosmak, M.D., New York.
13. "The Stigmata of Decadence in Gynecology," Robert T. Morris, M.D., New York.
14. "The Need of Individualization in Obstetrics," Franklin S. Newell, M.D., Boston, Mass.
15. "Caesarean Section," Asa B. Davis, M.D., New York.
16. "Dysmenorrhœa," J. Henry Carstens, M.D., Detroit, Mich.
17. "Methods of Minimizing the Mortality and Morbidity in Abdominal Sections for Pelvic Disease," George W. Crile, M.D., Cleveland.
18. "Ectopic Pregnancy," Edward W. Mulligan, M.D., Rochester.
19. "Efficient Methods in the Treatment of Placenta Prævia," James A. Harrar, M.D., New York.
20. "Human Serum Treatment for Hemorrhagic Diseases of the New-born," John E. Welch, M.D., New York.
21. "Central Laceration of the Perineum," Albert G. Swift, M.D., Syracuse.

SECTION ON PEDIATRICS.

Chairman, Henry L. Shaw, M. D. Albany.
Secretary, Thomas S. Southworth, M.D., New York.
Place of Meeting—Hotel Rochester.

1. "Some Observations on Infant Feeding," Harry Rulison, M.D., Albany.
2. "Pulmonary Tuberculosis in Childhood," Louis C. Ager, M.D., Brooklyn.
3. "Use and Abuse of Sugar in the Diet of Children," Elias H. Bartley, M.D., Brooklyn.
4. "Rational Treatment of Hemorrhagic Affections in Children," LeGrand Kerr, M.D., Brooklyn.
5. "Food Idiosyncrasies," Jacob S. Otto, M.D., Buffalo.
6. "Diabetes in Children," DeWitt H. Sherman, M.D., Buffalo.
7. "X-ray as a Means of Diagnosis in Intussusception," Irving M. Snow, M.D., Buffalo.
8. "The Wassermann Reaction in Various Conditions in Children," L. Emmett Holt, M.D., New York.
9. "Infant Feeding from a New Standpoint," Godfrey R. Pisek, M.D., New York.
10. "The Physician and the Mentally Defective Child," Isabelle T. Smart, M.D., New York.
11. "Some Neglected Aspects of the Problem of Infant Mortality," Philip Van Ingen, M.D., New York.
12. "Social Pediatrics," Ira S. Wile, M.D., New York.
13. "Care of the New Born," Carl G. Leo-Wolf, M.D., Niagara Falls.
14. "Infant Feeding with Undiluted Cow's Milk," William B. Hanbidge, M.D., Ogdensburg.
15. "Differential Diagnosis of the Paralyzes Occurring in Early Life," Henry A. Gribbon, M.D., Poughkeepsie.
16. "Diphtheria," Joseph R. Culkan, M.D., Rochester.
17. "Studies from the Infants' Summer Hospital."
 - a. Joseph Roby, M.D., Rochester.
 - b. Norris G. Orchard, M.D., and Fred R. Eihlinger, Ph.D., Rochester.
18. "Enuresis and Chronic Digestive Disturbances," Frank Vander Bogert, M.D., Schenectady.
19. "Recurrent Vomiting in Children," A. Clifford Mercer, M.D., Syracuse.
20. "Medical Inspection of School Children," Joseph C. Palmer, M.D., Syracuse.
21. "Reports on Weights and Measurements of Children under Seven Years," Edward J. Wynkoop, M.D., Syracuse.
22. "The Value of Discipline in the Care of the Spoiled Child," T. Wood Clarke, M.D., Utica.
23. "Nerves and the Nursing Mother," Conway A. Frost, M.D., Utica.

District Branches

THIRD DISTRICT BRANCH.

ANNUAL MEETING, AT TROY, OCTOBER 1, 1912.

The morning was devoted to visiting the clinics at the city hospitals. Medical cases were shown by the staff of the Leonard Hospital. Medical and Surgical clinics were held at the Samaritan and Troy Hospitals, and there were demonstrations in Psychiatry at the Marshall Sanatorium.

A buffet luncheon was given by the Medical Society of the County of Rensselaer, at the Troy Club to the members present.

The officers for the ensuing year were not elected on account of the failure of the delegates to attend the meeting, and the meeting place for the next year was not determined.

The scientific program was called to order by the president, Dr. John B. Harvie. There were seventy-five members present. The minutes of the last meeting were read and approved. The vice-president, Dr. Robert Selden took the chair while Dr. Harvie read his presidential address on the Cancer Problem, in which emphasis was laid on the frequency and difficulty of diagnosis.

"A Common Error in the Diagnosis of Diseases of the Joints," Wisner R. Townsend, M.D., New York City.

In the discussion which followed, Dr. Henry Ling Taylor spoke of the great variety of Arthritides.

"Spontaneous Fracture as an Early Symptom of Tabes Dorsalis," Henry Ling Taylor, M.D., New York City.

"Some Observations in the Surgical Treatment of Cholecystitis," Mark O'Meara, M.D., Kingston.

In the discussion which followed, Dr. Kidd of Troy spoke of three cases, one with 625 stones in the gall bladder, two cases with rupture of the gall bladder. Dr. Harvie spoke of the differentiation between tumors of the gall bladder and tumors of the kidney. Dr. Gordinier and Dr. Marsh also discussed the paper.

"Definition of Insanity," J. Montgomery Mosher, M.D., Albany.

"A Clinical Study of the Practical Value of Auto-inoculation in the Treatment of Pulmonary Tuberculosis," P. De Bloeme, M.D., Liberty.

Discussed by Dr. Cary of Troy, who compared the value of auto-inoculation in treatment with Tuberculin.

"The Clinical and Pathological Study of a Case of Primary Malignant Disease of the Pleura," H. J. Bernstein, M.D., Bender Laboratory, Albany.

"Carcinoma of the Rectum," S. V. Whitbeck, M.D., Hudson.

"The Significance of Dyspepsia," John McGarrahan, M.D., Cohoes.

Discussed by Dr. A. McFarlane of Albany, who explained the value of X-ray examinations in diagnosis.

"The Report of a Rare Case of Exfoliation of the Cornea Corresponding to Dermatitis Exfoliativa," Clark G. Rossman, M.D., Hudson.

"Some Remarks on the Code of Ethics," Robert Selden, M.D., Catskill.

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF
RENSSELAER.

REGULAR MEETING AT TROY, JANUARY 14, 1913.

SCIENTIFIC PROGRAM.

President's Address, J. H. F. Coughlin, M.D., Troy.
"Modern Uses of Anæsthetics," Walter T. Diver,
M.D., Troy.
"Malignant Endocarditis" (Autopsy reports of four
cases), H. C. Gordinier, M.D., Troy.

MEDICAL SOCIETY OF THE COUNTY OF
FRANKLIN.

ANNUAL MEETING AT MALONE, DECEMBER 10, 1912.

The following officers were elected for 1913:
President—Frank F. Finney, Burke.
Vice-President—William H. Harwood, Chasm Falls.
Secretary and Treasurer—George M. Abbott, Sara-
nac Lake.

Censor—J. Woods Price, Saranac Lake.

The Secretary offered an amendment to Sec. 1, Chap. IX of the By-Laws by adding the words "or at such time as the Comitia Minora may designate," making the section read, "A regular semi-annual meeting shall be held on the second Tuesday of June in each year, at such time as the Comitia Minora may designate."

Dr. Grant offered a resolution that hereafter the Scientific Program be limited to not more than four papers and at least two active members of the Society be designated by the President to open the discussion for each paper, that a time limit of fifteen minutes for the reading of each paper and five minutes for individual discussion of same be made, after which all members are invited to take part in discussion. After some discussion the resolution was seconded and unanimously adopted.

SCIENTIFIC SESSION.

"Two Views of Pulmonary Tuberculosis," J. Seymour Emans, M.D., Rainbow Lake.
"Case Histories Illustrating Certain Diseases Simulating Pulmonary Tuberculosis," H. A. Bray, M.D., Ray Brook.
"Diagnosis of Smallpox," W. N. MacArtney, M.D., Fort Covington.
"Some Accounts of the State Sanitary Conference," W. H. Harwood, M.D., Chasm Falls.
"Report of an Interesting Case of Appendicitis," P. F. Dalphin, M.D., Malone.

RICHMOND COUNTY MEDICAL SOCIETY.

106TH ANNUAL MEETING AT ST. GEORGE, BOROUGH OF
RICHMOND, DECEMBER 11, 1912.

The President, Dr. Frederick Coonley, presided. Besides the thirty members present, the society was honored by the presence of Dr. Wisner R. Townsend, Secretary, Medical Society of the State of New York; Dr. Walter B. Chase, President, Second District Branch; Dr. James Alexander Miller, Attending Physician and Director Tubercular Clinic Bellevue Hospital, and Dr. Carser of Quarantine.

The minutes of the November meeting were read and approved.

Secretary and Treasurer Edward D. Wisely presented his report for the year 1912, in which he stated that the year had rounded to a successful whole and the affairs of the Society had moved along with smoothness and undiminished enthusiasm and interest. There have been eight regular meetings. The June meeting was omitted in order to enable the members to take advantage of Dr. Bryan's invitation to attend the meet-

ing of the Medical Association of Greater New York at which two of our members, Drs. Kingsley and Craig, presented papers.

On May 8th, the Society enjoyed the hospitality of the Richmond County Pharmaceutical Association and retain many pleasant memories of the occasion.

The Secretary called attention to the fact that the Richmond County Medical Society was one of the oldest, if not the oldest, County Medical Society in the State of New York, having, in July, 1906, celebrated its one hundredth birthday. Its records, naturally, are very interesting, reaching back, as they do, some of them, for nearly one hundred years, and he suggested that the Richmond County Medical Society provide a suitable place where these records may be preserved in safety.

The following report of the treasurer was then read:

TREASURER'S REPORT FOR YEAR ENDING DECEMBER 11,
1912.

RECEIPTS.

Balance on hand December 11, 1911.....	\$95.99
Received from Members	312.00
	\$407.99
Disbursements	311.78

Balance on hand, December 11, 1912..... 96.21

Upon motion of Dr. Bryan, seconded by Dr. A. T. Wood, the report was accepted with thanks.

Reports of the Committees on Legislation, Public Health and Drugs followed, presented by their respective Chairmen, Drs. Bryan, MacGuire and Callahan. Motions to accept these reports were duly made, seconded and carried.

Action was taken upon the amendment to the By-Laws of this Society, which was proposed and unanimously approved at the last annual meeting, and which provides that Chapter VIII, Section 2, shall read as follows:

"Members whose dues or assessments for the current year are unpaid on May 1st, or who are under suspension shall not be eligible for nomination, election or appointment to any official position in the Society, nor shall they be entitled to vote or to receive the notices, publications or privileges of the Society until their dues are paid."

Upon motion, duly seconded, this amendment was unanimously adopted.

Dr. Coonley introduced the first speaker of the evening, Dr. James Alexander Miller, attending physician to and director Tubercular Clinic of Bellevue Hospital, whose subject was "The Use of Tuberculin for the Diagnosis and Treatment of Tuberculosis." Dr. Miller discussed scientifically and exhaustively the diagnosis and treatment of tuberculosis, employing tuberculin and stated the conclusions which he had reached from a varied and extensive experience.

Dr. Walter B. Chase, president of the Second District Branch of the State Society, was next presented. Dr. Chase said that on account of the lateness of the hour he would not present the paper he had expected to but would confine himself to a few general remarks. He stated his belief in the value of Medical Societies and in the benefits to be derived from their State Sessions and expressed the hope that all Societies would endeavor to bring into membership all the men in their counties.

Dr. Coonley requested Dr. Wisner R. Townsend to say a few words, in response to which Dr. Townsend told the Society of the Annual Session of the State Society to be held in Rochester, April 29 to May 1st and explained the change in the place of meeting.

The tellers reported the election of the following officers, censors and delegates for the year 1913:

President—Henry C. Johnston, Tompkinsville.
Vice-President—Charles E. Pearson, Tompkinsville.
Secretary—Charles R. Kingsley, Jr., West New Brighton.

Treasurer—Edward D. Wisely, Port Richmond.

Censors—Max Krueger, Stapleton; Henry A. Craig, New Brighton; H. T. Goodwin, Tompkinsville.

Delegate to the State Society—A. Trenchard Wood, New Brighton.

Alternate to the State Society—C. W. Walser, New Brighton.

The president called Dr. Johnston to the chair. Dr. Johnston thanked the members for the honor conferred, assured them of his earnest desire to maintain the high standard set by the former presidents and expressed the hope that the same loyal support would be given him by the Society.

The president, Dr. Coonley then delivered his annual address.

The secretary, Dr. Wisely, moved that a special vote of thanks be given Dr. Coonley for the worthy, efficient and untiring service which he had rendered the Society as its president for the past two years. This motion was unanimously seconded and carried.

Upon motion by Dr. Jessup, seconded by Dr. Bryan, the matter of procuring a suitable place for the safe-keeping of the Society's records, as suggested by the secretary in his report, was entrusted to the Comitia Minora.

The meeting adjourned to the Staten Island Club, where a collation was served.

MEDICAL SOCIETY OF THE COUNTY OF CHEMUNG.

ANNUAL MEETING AT ELMIRA, DECEMBER 17, 1912.

The following officers were elected for 1913:

President—William Brady, Elmira.

Vice-President—Russell B. Lynn, Elmira.

Secretary—Charles F. Abbott, Elmira.

Treasurer—Herbert W. Fudge, Elmira.

Censors—R. G. Loop, Sherman Voorhees and J. G. Fisher, of Elmira.

Delegate to State Society—E. T. Bush, Horseheads.

Alternate—R. G. Loop, Elmira.

Delegate to Sixth District Branch—O. J. Bowman, Horseheads.

Alternate—C. G. R. Jennings, Elmira.

SCIENTIFIC SESSION.

"Intestinal Obstruction," Marshall Clinton, M.D., Buffalo.

"Personal Experiences in Diagnosis and Treatment of Diseases of the Stomach," with lantern slide demonstrations, M. B. Tinker, M.D., Ithaca.

ONEIDA COUNTY MEDICAL SOCIETY.

ANNUAL MEETING AT UTICA, JANUARY 14, 1913.

The following officers were elected for the ensuing year:

President—Thomas H. Farrell, Utica.

Vice-President—Charles R. Hart, New Hartford.

Secretary—William B. Roemer, Utica.

Treasurer—T. Wood Clarke, Utica.

Librarian—Smith Baker, Utica.

Censors—F. J. Douglas, H. G. Jones, G. M. Fisher, F. D. Crim, and E. D. Fuller, of Utica.

SCIENTIFIC SESSION.

"Arteriosclerosis—Ophthalmoscopic Evidences," S. C. Maxson, M.D., Utica.

"Salpingitis," W. B. Roemer, M.D., Utica.

MEDICAL SOCIETY OF THE COUNTY OF DUTCHESS.

REGULAR MEETING AT POUGHKEEPSIE, JANUARY 8, 1913.

The following Committees for 1913 were appointed by the President:

On Library—A. L. Peckham, L. C. Wood, C. T.

Cadwell, J. C. Otis, and W. J. Cavanaugh, of Poughkeepsie.

On Public Health—J. E. Sadlier, Poughkeepsie, D. H. MacKenzie, Millbrook, W. J. Conklin, Fishkill, J. M. Cronk, Hyde Park, and J. H. Dingman, Poughkeepsie.

On Legislation—J. E. Vigeant, Red Hook, F. W. Parsons, Poughkeepsie, and N. Borst, Poughkeepsie.

Milk Commission—J. S. Wilson, R. W. Andrews, J. H. Cotter, G. Huntington, and C. K. Deyo, of Poughkeepsie.

SCIENTIFIC SESSION.

"Contracted Pelvis," A. L. Peckham, M.D., Poughkeepsie.

"Puerperal Infection," J. H. Dingham, M.D., Poughkeepsie.

President's Address, J. C. Otis, M.D., Poughkeepsie.

MEDICAL SOCIETY OF THE COUNTY OF MONROE.

ANNUAL MEETING, ROCHESTER, DECEMBER 17, 1912.

The following officers were elected for the ensuing year:

President—Charles R. Witherspoon, Rochester.

Vice-President—Albert C. Snell, Rochester.

Secretary—Charles W. Hennington, Rochester.

Treasurer—Frederick W. Seymour, Rochester.

Censors—S. W. Little, W. B. Jones, R. M. Moore, E. H. Howard, and C. E. Darrow, of Rochester.

Delegates to State Society—O. E. Jones, W. T. Mulligan, and W. D. Ward, of Rochester.

Alternates—C. O. Boswell, S. W. Little, and J. R. Williams, of Rochester.

Delegates to Seventh District Branch—W. B. Jones, and Thomas Jameson, of Rochester.

Alternates—L. W. Jones and C. M. Jameson, of Rochester.

Milk Commission—J. R. Williams, and R. M. Moore, of Rochester.

SCIENTIFIC SESSION.

President's Address, S. W. Little, M.D., Rochester.

SCHUYLER COUNTY MEDICAL SOCIETY.

REGULAR MEETING AT WATKINS, JANUARY 7, 1913.

SCIENTIFIC SESSION.

"Pneumo and Hydrothorax, and New Growths," J. M. Quirk, M.D., Montour Falls.

"Emphyema," M. L. Bennett, M.D., Watkins.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.

REGULAR MEETING AT SCHENECTADY, JANUARY 14, 1913.

SCIENTIFIC SESSION.

"Institutional Care of Children," H. L. K. Shaw, M.D., Albany.

"Care of the Teeth," A. M. Wright, D.D.S., Troy.

BROOME COUNTY MEDICAL SOCIETY.

REGULAR MEETING AT BINGHAMPTON, JANUARY 7, 1913.

SCIENTIFIC SESSION.

"Spinal Anæsthesia," W. Wayne Babcock, M.D., Phila., Pa.

"To Open Discussion of Dr. Babcock's paper," J. J. Kane, M.D., Binghamton.

"A Remarkable Case of Water Drinking," S. H. Stevens, M.D., Union.

"Report of a Case," F. M. Dyer, M.D., Binghamton.

MEDICAL SOCIETY OF THE COUNTY OF
ULSTER.

ANNUAL MEETING AT KINGSTON, DECEMBER 3, 1912.

The following officers were elected for 1913:

President—Adelbert H. Mambert, Kingston.

Vice-President—Frank Keator, Kingston.

Secretary—Mary Gage-Day, Kingston.

Treasurer—E. E. Norwood, Kingston.

Censors—A. A. Stern, A. C. Gates, J. M. Bunting, of Kingston; George Ross of Port Ewen, and James Krom, of Saugerties.

Delegate to State Society—Mark O'Meara, Kingston.

Alternate—J. R. Gillette, Kingston.

Delegate to Third District Branch—A. S. Vrooman, Kingston.

Alternate—Daniel Connelly, Kingston.

SCIENTIFIC SESSION.

"President's Address," G. W. Ross, M.D., Port Ewen.

"Symptomatology and Diagnosis of Malignant or Septic Endocarditis, with Report of Cases and Autopsies," H. C. Gordinier, M.D., Troy.

A general discussion followed, by all present.

THE SUFFOLK COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, OCTOBER 31, 1912.

The following officers were elected for the ensuing year:

President—Guy H. Turrell, Smithtown Branch.

Vice-President—Silas R. Corwith, Bridgehampton.

Secretary—Frank Overton, Patchogue.

Treasurer—Barton D. Skinner, Greenport.

Censors—A. E. Payne, Riverhead, A. E. Diedrich, Bayshore, and M. B. Lewis, Sag Harbor.

Delegate to State Society—S. B. Allen, Patchogue.

Alternate—J. H. Benjamin, Riverhead.

The following resolution was unanimously adopted:
Resolved, That the Suffolk County Medical Society recommend that the Directory of the State Society be published once in five years, and that an addendum be issued each year.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE MODERN MATERIA MEDICA. The Source, Chemical and Physical Properties, Therapeutic action, dosage, antidotes and incompatibles of all additions to the newer materia medica that are likely to be called for on prescriptions, together with the name and address of the manufacturer or proprietor, and in the case of foreign articles, of the American agent. Third edition, revised and enlarged. New York. The Druggists' Circular. 100 William Street, 1912.

MINOR SURGERY. By LEONARD A. BIDWELL, F.R.C.S. Senior Surgeon to the West London Hospital; Dean of the Post-Graduate College, Consulting Surgeon to the Blackheath and Charlton Hospital and to the City Dispensary, and Author of "Handbook of Intestinal Surgery." Second edition, revised and enlarged. With 129 illustrations. London. University of London Press. Published for the University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde: Oxford University Press, 35 West 32d Street, New York City. Price \$3.75.

DISEASES OF THE SKIN. By WILLMOTT EVANS, M.D., B.S., B.Sc., F.R.C.S. Surgeon to the Royal Free Hospital, and Surgeon to the Skin Department, Royal Free Hospital; Senior Surgeon to the Hospital for Diseases of the Skin, Blackfriars. With 32 illustrations. London. University of London Press. Published for the University of London Press, Ltd., by

Hodder & Stoughton and Henry Frowde. Oxford University Press, 35 West 32d Street, New York City. Price \$3.75.

MEDICAL MEN AND THE LAW. A Modern Treatise on the Legal Rights, Duties and Liabilities of Physicians and Surgeons. By HUGH EMMETT CULBERTSON, Esq., member of the Ohio and New York Bars; Contributing Editor to many Legal Publications. Octavo, 325 pages. Cloth, \$3.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

THE TREATMENT OF DISEASE IN CHILDREN. By G. A. SUTHERLAND, M.D., F.R.C.P., Physician to Paddington Green Children's Hospital, and to the Hampstead and North-west London Hospital; late President, Section for Diseases of Children, Royal Society of Medicine. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York City. 1913. Price \$3.75.

THE SURGERY OF THE SKULL AND BRAIN. By L. BATHE RAWLING, F.R.C.S. Surgeon, with charge of out-patients, senior demonstrator of practical surgery; Demonstrator of Operative Surgery, St. Bartholomew's Hospital; Late Hunterian Professor, etc. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York City. Price \$6.00. 1912.

THE MEDICAL DISEASES OF CHILDREN. By T. R. C. WHIPHAM, M.A., M.D. (Oxon.), Physician to the Evelina Hospital for Sick Children; Assistant-physician and physician-in-charge of the Children's Department at the Prince of Wales' Hospital; Lecturer on Diseases of Children at the North-east London Post-Graduate College. With 67 illustrations. London. University of London Press. Published for the University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde. Oxford University Press, 35 West 32d Street, New York City. Price \$3.75.

SURGICAL OPERATIONS WITH LOCAL ANESTHESIA. By ARTHUR H. HERTZLER, M.D., Surgeon to the Halstead Hospital, Halstead, Kan., and to the Swedish Hospital, Kansas City, Mo. Surgery Publishing Company, 92 William Street, New York. 1912. Price \$2.00.

SAFEGUARDING THE SPECIAL SENSES. General advice regarding the Use and Preservation of the Eyes, Ears, Nose and Throat. By HENRY O. REIK, M.D., formerly Associate in Ophthalmology and Otology in the Johns Hopkins University and Surgeon in the Baltimore Eye, Ear and Throat Hospital, Baltimore, Maryland. Illustrated. Philadelphia. F. A. Davis Company, Publishers. 1912. Price 75 cents, net.

HEALTH AND LONGEVITY THROUGH RATIONAL DIET. Practical hints in regard to food and the usefulness or harmful effects of the various articles of diet. By DR. ARNOLD LORAND, Carlsbad. Philadelphia. F. A. Davis Company, Publishers. 1912. Price \$2.50, net.

A MANUEL OF ELEMENTARY ZOOLOGY. By L. A. BORDAILE, M.A., Lecturer in Zoology in the University of Cambridge and in Natural Sciences at Selwyn College. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York City. 1912. Price \$3.75.

DISEASES OF WOMEN. By THOMAS GEORGE STEVENS, M.D., B.S. (Lond.); F.R.C.S. (Eng.); M.R.C.P. (Lond.); Obstetric Surgeon, with charge of Out-patients, St. Mary's Hospital, Paddington; Surgeon (Gynæcological), Hospital for Women, Soho Square; Physician to In-patients, Queen Charlotte's Lying-in Hospital; Examiner to the Central Midwives' Board. With 202 illustrations. London. University of London Press. Published for the University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde. Oxford University Press, 35 West 32d Street, New York City. Price, \$5.50.

BOOK REVIEWS.

ELEMENTARY BACTERIOLOGY AND PROTOZOOLOGY. The Microbiological Causes of the Infectious Diseases. By Herbert Fox, M.D., Director of the William Pepper Laboratory of Clinical Medicine in the University of Pennsylvania; Pathologist to the Zoological Society of Philadelphia, etc. Illustrated with 67 engravings and 5 colored plates. Lea & Febiger. Philadelphia and New York. 1912.

As stated by the author, this book was prepared primarily for the use of nurses and it seems to meet the requirements of those engaged in such work very well, indeed. Naturally, it covers the wide field which its title announces only in a very elementary way, but the facts are clearly stated and the important points are emphasized. Almost no technic is included, so the book would be of little value from the point of view of practical laboratory instruction.

After a brief outline of the place of micro-organisms in nature and in biological classification, the author describes their general morphology, their chemical and physical properties and the general methods of studying these minute organisms. The chapter on sterilization and disinfection and also that on the procuring of specimens for bacteriological examination should be especially valuable to nurses.

The different pathogenic organisms are described in sequence with emphasis on the mode of transmission from the infected to well individuals.

The intricacies of immunity work are not dealt with, but under each organism, the results already obtained in this field of endeavor, with this particular disease are definitely stated.

Aside from the protozoa and bacteria, the book also describes briefly some of the various pathogenic yeasts and moulds and devotes a chapter to diseases of unknown etiology.

P. F. C.

INTRODUCTION TO THE STUDY OF INFECTION AND IMMUNITY, INCLUDING CHAPTERS ON SERUM THERAPY, VACCINE THERAPY, CHEMOTHERAPY, AND SERUM DIAGNOSIS. FOR STUDENTS AND PRACTITIONERS. By CHARLES E. SIMON, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine at the College of Physicians and Surgeons, Baltimore, Md. Octavo, 296 pages, illustrated. Cloth, \$3.25 net. Lea & Febiger, Philadelphia and New York, 1912.

The book, so clearly and readably written by an experienced teacher, who, on the one hand, knows the wants of the student and practitioner and who on the other, has first hand knowledge through his research of the subject matter, fills a need and will be heartily welcomed. From time to time in the last two decades there have appeared valuable summary treatises upon one or another of the narrower provinces of the rapidly growing subject of Immunology. They have filled a purpose and well, but they have been for the most part fragmentary and categorical. Now a sort of philosophically connected natural history of our knowledge of the struggle between the macro and micro-organism in infection, infectious disease, and immunity, is offered to the profession. This is afforded by the first chapters of the book and in such a way, too, that the notoriously embarrassing and discouraging terminology is gradually and almost unconsciously mastered.

In the last chapters, the practical application of immunological studies to the diagnosis and treatment of disease is presented and the various technical procedures are described with exactness and that clearness which is so often wanting in books upon immunity. The most recently established advances in the subject are incorporated.

Although the book is written for students and practitioners as an introduction, the advanced laboratory worker may be gratified and instructed by a knowledge of it.

R. V. L.

COMMON DISORDERS AND DISEASES OF CHILDHOOD. By GEORGE F. STILL, M.A., M.D. (Cantab.), F.R.C.P. (Lond.). Prof. and Phip. Diseases Children, King's College and Hospital, London; Physician, Hospital Sick Children; Hon. Mem. American Pediatric Society. Second edition. London. Henry Frowde, Oxford University Press. Hodder & Stoughton, Warwick Square, E.C., 1912. Oxford University Press, 35 W. 32nd St., New York. Price \$5.50.

This second edition of this valuable book has taken prompt recognition of the many advances that have taken place in pediatrics since the first edition was published about two years ago. The book does not claim to vie with the text-books upon children's diseases because as its title suggests, it covers a somewhat limited field, but covers that field ably.

The disorders and diseases which are most common in the routine of general practice are discussed in a readable, up-to-date and clear manner. This gives the volume an immediate value to the busy practitioner who deals largely or at all with children. The book merits a cordial welcome in any man's library and its teachings are the result of a ripe experience. One of the strongest features of the book is the author's convincing form of argument without forcing his views. The reader is led to a conclusion rather than forced to it; thus one's personal reasoning is stimulated and not vitiated.

LEGRAND KERR.

TREATMENT AFTER OPERATION. By WILLIAM TURNER, M.S., F.R.C.S., Surgeon, "Dreadnought" Seamen's Hospital, Greenwich; Lecturer, Clinical Surgery, London School of Clinical Medicine, and E. ROCK CARLING, B.S., F.R.C.S., with a chapter on the Eye by L. V. CARLING, F.R.C.S., Ophthalmic Surgeon and Lecturer, King's College Hospital, etc. Hodder & Stoughton and Henry Frowde, London. Oxford University Press, 35 West 32d Street, New York. Price \$3.75.

The mission of this book is to supply a demand amongst practitioners for an account of the after-treatment of operation cases in a convenient and readily accessible form.

Two hundred and forty-seven pages are divided into thirty-five chapters which treat of "The Sick-Room;" "Anesthesia;" "Aseptic and Septic Wounds;" "Hemorrhage and the Blood Vessels;" "The Skin;" "Edema," etc., the remaining chapters being devoted to regional surgery and concluding with a chapter on the eye.

We note that a two per cent. solution is recommended for the iodine method of skin disinfection—a rather weak solution, as compared with the full strength (7½%) in common use by many surgeons. Nutrient enemata receive a commendation which modern physiological facts do not warrant. It should be understood that so-called nutrient enemata have no value so far as supplying food is concerned. The rectum has no power to appropriate food. The only valuable thing in a nutrient enema is the water it contains.

There is little to criticise; there is much to commend in this handy volume. The teaching is sound and though concise, it is thorough. House surgeons and nurses will find that this book supplies much valuable information and is a reliable guide in solving post-operative problems. WILLIAM FRANCIS CAMPBELL.

DEATHS.

MAX KEISER, M.D., Buffalo, died December 10, 1912.

KERAN O'BRIEN, M.D., Brooklyn, died January 6, 1913.

CLINTON STEVENSON, M.D., New York City, died January 22, 1913.

JAMES PERCIVAL TUTTLE, M.D., New York City, died January 31, 1913.

R. BRADLER WELTON, M.D., Brooklyn, died January 8, 1913.

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EDITORIAL DEPARTMENT

THE PRESENT STATUS OF THE CANCER PROBLEM.

BY the cancer problem we mean, first of all, the problem of the nature and cause of the disease. It is true that the questions of the diagnosis and cure of cancer have a more pressing interest, and it is quite evident that these questions might be solved without touching the major problem. Indeed, the results of Wassermann and his collaborators, of Neuberg and Caspari, make it very probable that by empirical means the cure of cancer can be accomplished. By means nearly as empirical several diagnostic measures, notably the meiostagmin reaction and the reaction of Freund and Kaminer, have been evolved.

At the time when the tumors of animals were first generally recognized as transmissible, it seemed that by their means the question of the cause of cancer would soon be solved, but a very baffling obstruction was soon met with. It was found that when a bit of living tumor tissue of a rat or mouse was transplanted to a number of other individuals, tumors could be obtained, yet if this same tissue were killed, even by a process which appeared to change it very little, the results of the inoculation were unsuccessful. Many of the agencies used, such as heating to 55 degrees centigrade and drying, injure most bacteria very little. It appeared, then, that the cause of cancer could scarcely be bacteria of the ordinary sort. Furthermore, it was discovered that when tumor tissue was implanted in new individuals, its behavior was much the same as that of animal tissue on transplantation, the most pronounced difference being merely that the tumor tissue when established continues to grow, whereas normal tissues, skin, for example, maintain themselves in the ordinary relationship to the individual. The attempts to determine specific immunity reactions against the transplanted tumor material were unsuccessful in that no reactions were found other than are

elicited by foreign tissues in general. As a result of all this, cancer has come to be looked upon by many people as a specific cell derangement, a change taking place in a few cells hitherto normal, by which they are enabled to proliferate beyond their normal limits, and thus in time to overcome the organism. Many attempts have recently been made to initiate such cell derangement, but as yet without success. Not from the ordinary mouse tumors from rat tumors or dog tumors, has a cause for the growth ever been separated.

This was the state of affairs when, two years ago, Rous discovered that a transplanted sarcoma of the chicken, with which he had been working, is caused by a filterable agent. Previous to this discovery the biology of the growth had been well studied and it had been found to be a typical neoplasm. The history of its transplantation is interesting because it illustrates a number of the very points from which it had seemed that cancer must necessarily be a disease dependent on no extraneous agent, but on a tissue anomaly as such. The original chicken tumor was spontaneous in the same sense as the rat and mouse tumors from which laboratory strains have been propagated, that is to say, it had arisen without apparent cause. It was successfully transplanted only by employing blood relatives of the original fowl. It would not grow in fowls of any other species or in mammals. On transplantation of the live tumor tissue to susceptible hosts, this was found to survive and by its own proliferation to give rise apparently to all the resulting tumor mass. The growth was at first local and in many hosts remained so, but in others it gave rise at length to metastases, and these were definitely shown to result from the casting off of cells into the circulation, and their survival and proliferation in the place where they were deposited. Within the growth there is no reaction, such as is associated with the granulomata and other chronic

infective processes, and the tumor tissue itself consisted of actively dividing spindle cells, often of very invasive tendency.

The cause of the growth was first separated by filtration. It was found that when an extract of the tumor tissue was passed through a Berkefeld filter, the limpid filtrate would under certain conditions cause the tumor in new hosts. More recently, the agent has been demonstrated to survive in dried tumor tissue and in tumor tissue killed by glycerinization. The characters of the agent are those of a micro-organism. It appears to be among the larger filterable causes of disease. Differential tests with filters show that it may perhaps be large enough to be visible with the microscope, but as yet it has not been demonstrated, nor has it been successfully cultivated. It is killed by bile and by saponin in high dilutions as are animal organisms in distinction from most bacteria.

Here then was a tumor of which the cause had been definitely ascertained. It has remained to determine the distribution of this growth in nature, its infectivity, and, above all, whether other tumors are similarly caused. Some of these questions have already been answered by Rous and his associates. It has been found that the chicken sarcoma is not infectious under ordinary circumstances, and that it is not epidemic in nature. Among a large number of chicken tumors, from the region in which it was obtained, it has not again been found. On the other hand, several of these tumors have proven transplantable, and Rous, Murphy and Tytler have recently shown that one of these, an osteo-chondro-sarcoma, is also caused by a filterable agent. This agent will produce in susceptible hosts tumors in which cartilage is laid down, followed often by bone.

For the action of the agents causing the chicken sarcoma and the osteo-chondro-sarcoma some tissue derangement is necessary. This fact is of great interest, both in its possible relationship to the influence of trauma as a pre-disposing cause of mammalian growth and as explaining to some extent the lack of epidemicity of the chicken tumors. The action of the agent is slow and slight, as compared with the proliferation of the cells, once these have become neoplastic. Once a growth has been engendered by the agent, the phenomena of the tumor appear to be dependent entirely on the behavior of the cells composing it, and not on the agent which is its real cause. The agent itself seems to induce no immunity reaction in the host.

We have gone at some length into these findings with the chicken tumors because they parallel so closely the behavior of certain mammalian neoplastic growths. There is no doubt that the findings with it furnish a possible explanation for the phenomena of cancer. Whether this explanation is the true one is not yet evident. The results of further experimentation will be awaited with interest.

THE NEW SECTION ON PEDIATRICS.

THE Rochester meeting of the State Medical Society will offer a new field of interest to all physicians of New York State whose practice includes children. Organizations for the special consideration of the diseases of childhood have been demanded and are flourishing in different parts of the country. Thus far, the entire State of New York has been represented by the Section on Diseases of Children of the Academy of Medicine in New York City. No better work has been done anywhere else than by the New York men, but the geographical location of the city is such that the advantages of the Academy Section have been largely limited to its own physicians and those in the immediately adjacent counties.

For this reason, more than a year ago, there arose a strong movement for some common meeting ground for men from all over the State. Two propositions were advanced, one for the formation of a State Pediatric Society, which would necessarily have been more or less limited in its membership; the other, for a new Section on Diseases of Children for the Medical Society of the State of New York. The latter plan, happily, prevailed, the Council having granted such a Section on Pediatrics for the coming meeting at Rochester, where the plan will be placed on trial to stand or fall, according to the support given it by every individual interested in the subject. There seems at present every reason to expect its success and permanency, for a programme of great value is published in this issue of the Journal. Over one hundred and fifty physicians have already signified their interest in the Section, but the officers feel that there must be a much larger number scattered throughout the state whom they have not been able to reach. It is earnestly requested that all those to whom this movement appeals will not only send in their own names, but the names of others who would be interested. Names may be sent for enrollment to the Chairman, Dr. Henry L. K. Shaw, 361 State Street, Albany, or to the Secretary, Dr. Thomas S. Southworth, 807 Madison Avenue, New York City.

With such a list, it will be possible to send out, not only printed matter pertaining to the annual meeting, but also, if plans under consideration mature, of clinical meetings or special meetings upon pediatric subjects which it is hoped may be held elsewhere during the year under the auspices of some of the county societies.

Original Articles.

THE USE OF FOETAL SERUM TO CAUSE THE ONSET OF LABOR.*

By A. J. RONGY, M.D.,
NEW YORK CITY.

THE study of obstetrics has not in any period of time received the attention as have the other special branches of medicine and surgery. Obstetrics today still does not occupy the position it should. Somehow it is treated as a medical condition. With all our attempts to place labor normal and abnormal on a purely surgical basis we failed entirely and completely. It is difficult to ascribe one single factor for the anomalous position the practice of obstetrics is at present occupying.

The surgical and mechanical aspects of labor have in recent years made great strides and obstetricians at present have formulated definite principles governing the various complications that present themselves during pregnancy or labor.

However, the same cannot be said of the physiology and pathology of pregnancy. In this respect very little progress has been made in recent years. We are still in the dark as to the cause of the toxemias of pregnancy and until recently we had no conception whatsoever as to the cause of the onset of labor.

The importance of investigating and establishing the true cause of labor pains or what causes pregnancy to terminate is apparent to all. If the true etiology is established it may solve the problems, both physiological and pathological, that present themselves in the pregnant woman and in this way change the entire scientific aspect of obstetrics.

The reason for the onset of labor was sought long before obstetrics was practiced along scientific principles. The explanation of Hippocrates is familiar, namely, the child being forced by hunger in the last days of pregnancy, braces itself with its feet against the fundus of the uterus and in this manner induces labor pains and is born by its own weight. This view was entertained during antiquity. Even up to more recent times the conception prevailed that the active foetal movements bring the onset of labor. Galen was the first to insist that the birth of the child was dependent upon the contraction of the uterus and the active dilation of the cervix, thus attaching considerable importance to abdominal pressure. Very many fanciful theories were at various times advanced, such as over-distension of the uterus with the consequent stimulation of the cervical ganglia, causing the onset of labor; the overcharge of placental blood with carbonic acid, and a deficiency of oxygen were for a long time thought to be the true causes of onset of labor.

For a great number of these theories it can

be said that neither of them gave a wholly satisfactory explanation, as all of them were not based on scientific investigation.

In recent years the studies of immunity and anaphylaxis have opened new channels for investigation of the various physiological and pathological phenomena, and it was but natural that the cause for the onset of labor should be sought and studied along these lines. Sauerbruch and Heyde (*Munchner Med. Wochenschr.*, 1910) were the first to make use of a "natural case" in this direction, which is the well known case described by Shauta (*Gynak, Hundschau.*, 1910, H. 12, No. 50, S. 2617) and Basch (*Munch. Med. Wochen.*, 1910, No. 21, S. 987) of the united twin sisters Blazek, one of whom gave birth. During pregnancy the other one developed a series of secondary phenomena characteristic of pregnancy, but she was not influenced by parturition itself.

Sauerbruch and Heyde tried this "natural experiment" on animals.

Series 1.—They sewed a pregnant rat to a normal male or female. They noticed that pregnancy was not influenced nor was the other normal partner in any way disturbed, but that a few hours before the onset of labor the other rat became very sick and fell into a state of complete apathy, which continued throughout the birth act. In a number of animals there appeared tetanic contraction or twitchings similar to those of uremia, either spontaneously or by the use of external stimulation. A number of these animals died of these manifestations; the survivors were those who had been united for a longer time to the pregnant ones. Both authors considered the symptoms as those of an intoxication brought about by substances formed during or shortly after birth and are harmless for the pregnant partner. They explained the absence of symptoms in those partners joined for a longer time by the development of immunity or habitude.

Series 2.—How far can the birth act at the end of normal pregnancy influence the beginning of pregnancy? Out of five cases three aborted, and in the other two no effect was produced. They explained the absence of abortion on the ground of lessened susceptibility of the uterus. They considered the substances which bring on contraction of the uterus as specific.

As a result of these experiments by Sauerbruch and Heyde, Professor Henkel asked Dr. A. von der Heide to try these experiments on human beings, with the difference that blood of active parturients was injected.

Heide injected four patients in the last weeks of pregnancy, eight to twenty cc. of defibrinated blood, obtained during the stage of dilation and expulsion. No change in pulse, temperature or other abnormal findings were noted. In one case, immediately after injection the patient became restless, dyspnoea, cyanosis and sweat followed, pulse rose from 80 to 140. Recovery from

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

collapse took place in ten minutes without further distress.

Although these injections of parturients' serum gave no result, it did not seem to Heide to be without promise to try foetal serum instead, inasmuch as Stockman and Thies (*Biochem. Zeitsch.*, 1910, bund. 25, haft 2-3, p. 120) had observed distinct changes after such injections into gravid animals. In their experiments they found that all pregnant animals reacted after the first injection of fresh foetal rabbit's serum, while of the non-pregnant rabbits 71 per cent. reacted after one or more injections, showing that pregnancy in itself may be considered anaphylactic to serum of their species.

If we suppose that analogous changes exist between mother and foetal serum, then the continual interchange between maternal and foetal circulation opens a perspective for the etiology of puerperal changes in the mother's organism, and the diseases thereof. Very likely that puerperal toxicity, especially eclampsia, is the result of an overcharging of the mother's organism with unchanged foetal protein. Von der Heide tried these experiments on 26 pregnant women.

It is my intention to incorporate his experiments and the conclusions derived thereof in this paper in order to enable the reader to form his own opinion and conclusion as to the value of these investigations. The experiments of Heide and that of my own will practically form all the literature on the subject up to the writing of this paper.

Experiments of Von der Heide:

GROUP I.—INDUCTION OF LABOR.

Experiment 1.—Ros., 20 years, para 1; due beginning of February. Distinct dermatography. 9. II. intravenous injection of 17½ cc. foetal serum. Three hours after injecting labor pains set in. Face reddened, slight apathy, sensorium clear. Pains in the beginning every 10 to 15 minutes; in the second hour every 4 to 5 minutes; in the third hour every 3 minutes; after four hours every 2 minutes. During the next hour pains subsided somewhat, every 5 minutes, varying in intensity at regular intervals. Patient slept at first; later became restless for a short time. Three-quarters of an hour after onset of pains vaginal examination revealed the same findings as four days previously, cervix 2 cc. long, os one finger dilated. Three hours after injection temperature rose from 35.8 to 39.4; soon afterwards pains followed. Foetal heart sounds during rise of temperature varied. Duration of labor 16 hours. Premature child, male, 2,700 gms., 47 cm. long. Fontanels wide open. Lanugo on whole body. Mother's urine negative.

Experiment 2.—Helm., 22 years, para 1; due 8. II. Distinct dermatography. 26. II intravenous injection of 17½ cc. f. s. Four hours after injection onset of labor pains. Breathing loud, difficult, chilly and burning feelings, cold sweat.

Rise of temperature to 37.6; pulse between 96 and 106. Duration of labor 10½ hours, male, full term child; 3,300 gms., 52 cm. long, mother's urine negative.

Experiment 3.—Ber., 21 years, para 1; due beginning of March 27, 1911, intravenous injection of 2 cc. f. s. 10 minutes later labor pains set in (previously no history of pains obtainable, even after closest questioning). The first contractions painless, occurring every 10 to 12 minutes. After three-quarters of an hour increase of contractions. Duration of labor 20½ hours (generally contracted pelvis). On account of low impaction forceps applied. Child, female, 3,580 gms., 51 cm. long. Temperature, pulse, urine of mother negative.

Experiment 4.—Steg., 19 years, para 1. Due 10. II. On 1. II intravenous injection of 2 cc. f. s. Previous internal examination; cervix ½ cm. long, os closed. Cyanosis. Temperature rose from 36.5 to 37.1. Onset of contractions and pains as in Case 3. Duration of labor 11¾ hours. Child 2,110 gms., 47 cm. long.

GROUP II.—TRANSIENT PAINS.

Experiment 5.—Mey., 20 years, para 1, 6th month. Transferred from psychopathic clinic for the interruption of pregnancy. 4-III injection of 3 cc. f. s. intravenously. 6-III injection of 30 cc. f. s. Three hours later slight pains, which soon passed. Cyanosis. Temperature and pulse negative. 7½ hours later 30 cc. f. s. was again injected intravenously; no reaction whatever.

Experiment 6.—Baum, 23 years. Para 1, in last month. 18, II, 2 cc. f. s. intravenously, no effect. Temperature rose from 36.8 to 37. Three and one-quarter hours after injection irregular pains set in, which gradually subsided. Essential change in vagina and os not demonstrable. (For other reasons it became necessary to induce labor.)

Experiment 7.—Bau., 20 years, para 1. Due beginning of April. On 13, II, first injection intravenously, 18 cc. f. s. Two hours later irregular pains between long intervals; four hours later pains increased. Temperature rose from 36.5 to 38.1, pulse to 132, pains and temperature subsided. Spontaneous birth on 21 III; female child, 48 cm., 2,350 gms.

GROUP III.—USE IN INERTIA.

Experiment 8.—Zim., 21 years, para 1. After four hours of labor complete inertia set in, lasting 31 hours. Os barely two fingers dilated, cervix almost obliterated, bag of waters intact; head well engaged. Injection of 8 cc. f. s. In 20 minutes onset of strong pains, which led to the expulsion of a strong child 9 hours after injection.

Experiment 9.—K., 20 years, para 1. Weak pains every 7 minutes; after intravenous injection of 10 cc. f. s. pains markedly increased in force and frequency. In 1½ hours temperature rose to 38.6; 4 hours later second injection of

20 cc. f. s. without affecting pains. Temperature falls in one-half hour from 38 to 37.3. Pulse drops from 112 to 92. Forceps applied because of low transverse position.

Experiment 10.—Kow., 30 years, para 1. Time of onset of pains cannot be determined. At the time of the injection of 10 cc. f. s. head movable above brim; bag intact. Pains weak and not frequent. After injection pains every 3 to 4 minutes, then every 2 minutes. Six and a half hours later she delivered. A second injection of 20 cc. f. s. 2½ hours a. p. had no appreciable effect. Pulse, temperature, urine of mother negative.

Experiment 11.—Arn., para 1. Tedious labor; membranes were ruptured but pains were still weak. Injection of 5 cc. f. s. intravenously. After two minutes pains came at intervals of two minutes. Two hours after injection spontaneous delivery of a very strong child.

Experiment 12.—Hei., 30 years, para 1. Dilation continued for days without the detection of real pains. Injection of 4 cc. f. s.; pains began after 2½ hours and lasted four hours; following day pains set in again and led to expulsion.

Experiment 13.—Ba., para 8. Very weak pains. Injection 16.5 cc. f. s. In one hour one pain; in 1½ hours stronger pains, which soon became rhythmic and without ceasing led to birth.

GROUP IV.—NEGATIVE RESULTS.

Experiment 14.—B., 25 1; 5 f. s. 31 1; 10 f. s. 4 11; 20 f. s.; full term child.

Experiment 15.—H., 17 1; 5 f. s. 24 1; 10 f. s. Birth 13 11, male, 49 cm., 2,350 gms.

Experiment 16.—M., 11 2; 20 f. s. 15 2; 30 f. s. Discharged a. p.

Experiment 17.—G., 10 3; 3 f. s. 12 3; 30 f. s., 3 hours after 2nd injection 20 cc. Birth 1.5 fem., 52 cm., 3,300 gms.

Experiment 18.—P., 5 4; 2 f. s. 7 4; 20 f. s. Birth 23 4; fem., 47 cm., 2,400 gms.

Experiment 19.—H., 8 4; 2 f. s. 18 4; 48 f. s. Birth 27, 4, full term.

Experiment 20.—S., 6 3; 3 f. s. 7 3; 30 f. s. Birth 25, 3, full term.

Experiment 21.—F., 8 4; 2 f. s. 12 4; 20 f. s. Birth 16 4; 54 cm., 3,250 gms.

GROUP V.

Experiment 22.—Thom., 33 years, para 3, 11 days a. p. Two injections 2 cc. to 30 cc. without reaction. During second stage injection of 5 cc. f. s., 20 minutes a. p. Three hours p. p. injection of 25 cc. f. s.; in 1½ hours rise of temperature from 32.5 to 37.8. Pulse unchanged.

Four hours after second injection another injection of 20 cc. ovarian extract; temperature, in 1½ hours. Patient complains of headache, is restless. Temperature slowly subsides.

Urine before injection negative. Amount for 24 to 30 hours p. p., 1,000 cc. bloody (catheterized specimen). Microp. r. b. c. numerous. Forty-eight hours post partum 1,500 cc., red blood cells disappeared.

GROUP VI.

Experiment 23.—Kon., 24 years. Para 1 in 10th month of pregnancy. First injected for two weeks (14-III to I-IV) with increasing doses of 2-11 cc. f. s. intra-muscularly. The separate injections were without results. On 4-IV pains (contractions) not felt by this otherwise sensitive woman set in. Duration of labor 16 hours; strong child, 51 cm., 3,500 gms.

Experiment 24.—Heil., 20 years. Para 1 in 10th month. During same time as above. Injected intra-muscularly with 6 increasing doses of 1 cc. f. s. Birth at term 5-IV. Duration of labor 14 hours. Strong child, 54 cm., 4,000 gms.

Experiment 25.—Bau., 32 years, para 1. Received intra-muscularly increasing doses of 1 to 12 cc. f. s. from 13-III to 8-IV. After 4th injection (6 cc.) flow of blood, weak pains (?). Temperature rises from 37 to 38.7, pulse from 104 to 120 in one hour; 5 hours after highest temperature intravenous injection of 5 cc. given. Slow falling of temperature.

Two days later increasing doses of f. s. were again injected. The last time, 8-IV, 12 cc. f. s. Soon after, pains every 4 to 5 minutes, which subsided three hours after the injection. Birth on 9-IV. Female, 53 cm. long, 3,360 gms.

Experiment 26.—Tr., 23 years, para 1, 5th to 6th month. Marked vomiting of pregnancy which is increased by a few intramuscular injections of f. s. Spontaneous premature birth in 7th month; child lives.

RESULTS OF EXPERIMENTS.

In four cases after injection of serum labor pains set in which led to expulsion. In three cases one injection sufficed. In two cases a slightly larger second injection was given after the first injection. The subjects of these experiments were women in the last weeks of pregnancy, or shortly before a. p. Careful questioning revealed that the women had no labor pains previous to injection. Cases 3 and 4 were very nearly at term; this may explain why the small amount of 2 cc. f. s. sufficed to cause labor to set in.

Case 1 illustrates particularly well our explanation that the pains produced by the injection signify the actual beginning of labor; even three-fourths hours after the commencement of pains the same vaginal findings were present as four days previous.

In the first two cases there was a rise of temperature soon after the injection. In Case 1 it rose to 39, which subsided during labor and left no visible effects upon mother or child. The pulse showed little change.

In the three following cases (Group II) the pains appeared transiently. In Case 5, in which abortion was indicated because of epilepsy, pains were observed for three hours after injection; they were only slightly felt, and subsided after three hours. Their action was demonstrable by the shortening of the cervix. We injected in this

case 3 cc. f. s. and followed this in three days with 30 cc. In the second case the temperature rose after the second injection to 37; the pulse was at a maximum after five hours (132, previously 104). One-quarter hour after maximum temperature irregular labor pains set in, which continued for six hours. This effective second dose having ten times the strength of the first, was given three days after the first injection.

Differing from this we have Case 111, in which pains set in after first injection of 18 cc. and 1½ hours before maximum temperature of 38 (36.5 previous to injection). The pulse rose from 96 to 132. The second injection of 25 cc., given four days later, gave no reaction as far as pains, temperature or pulse are concerned, but we must note here that the birth of a child 48 cm., 2,350 gms. occurred four days after the injection. A causative relation between injection and birth cannot in this case be positively proven because of the four days' interval; the only noteworthy feature is that the child was not a full term. Since in the other two cases it was necessary to induce premature labor, this factor cannot be considered further.

The third group of experiments confirmed our theoretical supposition that because of the previous positive results in the first group, f. s. could be favorably used in the treatment of primary and secondary inertia. In Case 8 pains had ceased completely after four hours' duration. In the five other cases the pains were weak in intensity and not frequent. In Case 12, 30 years para, the dilation of the cervix lasted a few days, without the sensation of labor pains. After injecting 4 cc. f. s. pains set in in 2½ hours, which gradually increased in intensity and lasted four hours; on the next day, after a period of inertia, they set in again and led to the birth of a full term baby.

In Case 11 secondary inertia (narrow pelvis) the pains ceased almost completely after the rupture of membranes. In all three cases strong contraction set in in 4 to 15 minutes after the injection at intervals of 3 to 4 minutes. The quantitative and qualitative change of the pains after the injections was self-evident.

Group IV contains those cases which showed no effect after the second or third injection of f. s. Case 18 deserves mention because 16 days after the second injection (10 gradually increasing doses were given two days afterwards) a child 47 cm., 2,400 gms., was born, evidently 14 days before term. In this case, also, the relation between injection and birth is not improbable, especially when we consider all the evidences of prematurity in the new-born. The reasons for the failure of the injection we will consider later.

In the fall of the past year an editorial appeared in the *Journal of the American Medical Association* commenting on the investigations of Heide and what these experiments may lead to if they prove to be positive.

We immediately familiarized ourselves with

the original work of Heide and began to make preparations for experiments along the same lines at the Jewish Maternity Hospital, following closely the methods and dosage of Heide, with some slight modifications to suit the individual case. The serum was prepared as suggested in Heide's original paper. The house surgeon was instructed to admit cases to the hospital which were not in labor, particularly patients in the last weeks of pregnancy who came for some general information pertaining to their pregnant state.

Realizing the gravity of such experiments in a public hospital in this city, we were very cautious in the beginning. We were fully aware that any untoward accident would interrupt all our work, and in addition we would have to face serious consequences. Fortunately, nothing of importance occurred to mar our investigation until the latter stage of the work. At that time we were quite familiar with the general routine and technique.

Dr. George Krupp was associated with me in this work and was in charge of all the clinical data of the patients after they had been injected. The intravenous method was used in all our experiments. At the earlier stage of our work a vein in the arm was exposed by a small skin incision, but later we found it unnecessary, and the vein was entered directly with a needle through the skin. A rubber bandage or a piece of rubber tubing was placed on the arm above the point of entrance in order to engorge the veins, and then the most prominent vein was selected for injection. As a rule we succeeded in entering the veins at the first attempt.

I shall enumerate the experiments as they occurred in the hospital. We could not group our cases because the hospital service does not permit a waiting list, but I shall attempt to classify them in the summary of these experiments.

Experiment 1.—R. E., 33, para 3, at term. Admitted November 20, 1911; no dilation, membranes intact, cervix thick, head not engaged, no pain. November 21, 1912, 12.35 P. M., 5½ cc. of foetal blood serum injected intravenously. Pulse, temperature and respiration before injection normal. Fifteen minutes after injection temperature 99, pulse 120, respiration 32. Uterine contraction noticed. At 6 P. M. patient began to complain of slight pain. At 10 P. M. the pains occurred every 5 to 6 minutes. At 12 P. M. every 3 minutes. At 1 A. M. patient felt nauseated and vomited. The pains continued during the night and at 7 A. M. she was fully dilated. Delivered at 10 A. M. November 22nd; child weighed 9 lbs. 3 oz.

Experiment 2.—C. G., 24, para 2. Admitted November 22, 1911. Last menstruation eight months ago; due towards the middle of December. Head not engaged, cervix not dilated. Temperature, pulse, respiration normal. Injected at 4.30 P. M. 7 cc. of f. b. s. One hour later temperature 99.2, pulse 88, respiration 24. Began to have

pains at 6 P. M. At 7 P. M. pains came on every 4 minutes. At 9 P. M. patient had a severe chill lasting 4 to 5 minutes. The pains continued, and at 2.15 A. M. patient delivered spontaneously child weighing 4 lbs. 11 oz. and premature.

Experiment 3.—E. O., 22, para 1. Admitted November 26, 1911; due December 15th. No pain, no dilation of the cervix, membranes intact, head presenting. November 27th injected 8 cc. f. b. s. No reaction. November 28th, 12 P. M., injected 20 cc. f. b. c.; slight pains in the abdomen during the afternoon. Patient left the hospital November 29th. Re-admitted December 21st. Patient had a slight bloody discharge, but no pain. December 2nd at 10.30 P. M. injection of 19 cc. f. b. s. Temperature 98.4, pulse 94, and respiration 20. Blood pressure 128 to 130. Patient began to have pains towards the morning of December 3rd. At 10 A. M. she felt nauseated and vomited a great deal. Delivered December 3rd, 12 M., premature child weighing 5 lbs.

Experiment 4.—R. B., 23 years, para 3. Admitted November 26th. Slight pain in the back cervix, two fingers dilated, membranes intact, head engaged L. O. A.; pains subsided shortly after admission. Injection of 10 cc. f. b. s. at 2.25 P. M. November 27th. Patient began to have pains towards the evening, which became stronger during the night, and she delivered at 8.35 A. M. November 28th child weighing 7 lbs. 12 oz.

Experiment 5.—I. G., 32 years, para 3. Admitted November 30th. Two fingers dilated, membranes ruptured, head not engaged. At term no pains. November 30th, 10.15 P. M., injection of 5 cc. f. b. s. At 1.30 A. M. slight pains in the back lasting 20 to 25 seconds. December 1st, 11.30 A. M., no pain, was injected with 19 cc. f. b. s. Pulse immediately rose from 100 to 142 and patient felt nauseated, began to have pain in the back, which subsided later. Patient delivered December 5th, 12.15 A. M., child weighing 6 lbs. 15 oz.

Experiment 6.—F. S., 30 years, para 1. Flat pelvis; first child living; the other two pregnancies resulted in stillborn children on account of difficult deliveries. Was due January 12th. Admitted to the hospital for induction of labor on account of flat pelvis. December 22nd at 4 P. M. injection 5 cc. f. b. s. Temperature 97.8, pulse 80, respiration 24, blood pressure 145; slight reaction. At 8.50 P. M. injection 20 cc. f. b. s.; commenced to have pain at 9.05, or 15 minutes after injection. At 9.15 patient had a severe chill, pain in the head, pulse became thready; she developed cardiac oppression and precordial pain, labored respiration; chill lasted 18 minutes. At 9.30 P. M., temperature 102, pulse 130, and respiration 32. At 10.25 she vomited. 10.35 P. M. temperature rose to 104.4, pulse 140, respiration 40. The pains came on more frequently and at 10 A. M. December 3rd the cervix was two-thirds dilated. At this stage

the membranes ruptured. Patient also developed a severe herpes labialis. She began to improve towards the morning, and at 1 P. M., after full dilation of the cervix, delivery was accomplished by breech extraction. The child was stillborn. Foetal heart sounds were present before patient became ill, but could not be elicited after she recovered from shock one hour before delivery.

Experiment 7.—J. W., 23 years, para 2. Admitted December 2nd, at term; slight pain in the back, cervix thick, not dilated; membranes intact. Patient kept under observation during the next twenty-four hours, but she had no pain. Injection at 9 P. M. 9 cc. f. b. s., and no effect whatsoever was noted. Patient left the hospital December 5th; re-admitted December 8th; cervix two fingers dilated and in active labor. She was delivered at 12.20 P. M., full term child, weighing 6 lbs.

Experiment 8.—R. B., para 5. Admitted to the hospital in the 5th month of pregnancy, suffering from chronic endocarditis, with signs of failure of compensation. December 16th injection 5 cc. f. b. s., no reaction and no pain. December 17th at 3 P. M. injection with 18 cc. f. b. s. Two hours later patient felt nauseated and vomited a great deal; was very restless. She left the hospital December 18th.

Experiment 9.—G. F., 26 years, para 3. Admitted November 27th, 9 P. M.; cervix one finger dilated, membranes intact, head not engaged, due December 15th. November 29th, 4.40 P. M., injection 28 cc. f. b. s., no effect. Refused to be injected again and left the hospital the same day. She was re-admitted December 18th and was delivered at 9 A. M., child weighing 8 lbs. 6 oz.

Experiment 10.—S. G., 33 years, para 3. Admitted December 4th; cervix three fingers dilated, membranes intact, head engaged; at term. Pains subsided shortly after admission. At 12.30 P. M. injection 5½ cc. f. b. s. Commenced to have pains during the afternoon and towards the evening patient was in active labor. Delivered December 5th at 3 A. M.

Experiment 11.—R. G., para 1. Admitted November 30th; head engaged, membranes intact, cervical canal closed, no pain. Due December 7th. 11.30 A. M. 32 cc. f. b. s. was injected; no effects were noticed. She left the hospital the following day and was re-admitted December 11th and delivered at 3.25 A. M., child weighing 5 lbs. 14 oz.

Experiment 12.—A. R., 22 years, para 1; in the eighth month of pregnancy. Admitted to the hospital December 7th for the induction of labor on account of endocarditis, which commenced to give signs of failure of compensation. Temperature, pulse, respiration, normal, blood pressure 118. December 7th injection of 8 c.c. f. b. s.; no reaction. Injected again at 7.15 P. M.; no effect. Patient refused further treatment and left the hospital.

Experiment 13.—I. U., 23 years, para 1. Admitted December 24th, 10.30 P. M.; membranes

intact, head not engaged, at term; slight pain in the back. December 26th, 10.55 A. M., injection 6 cc. f. b. s. Ten minutes later contraction of the uterus was noticed and patient commenced to have pains. At 12 M. pains ceased. At 1 A. M. December 27th pain began anew, occurring every 5 to 8 minutes. Patient vomited a great deal during the day. December 28th pains subsided again. She was injected 15 cc. at 10 P. M. and began to have strong labor pains two hours later, and was delivered at 6.40 A. M. December 29th.

Experiment 14.—E. C., 31 years, para 5. Admitted December 25th. Cervix thick, membranes intact, head presenting, no pain. Injected 9.05 P. M. 5 cc. f. b. s.; no reaction. At 1 A. M. December 6th injection 20 cc. f. b. s. Just after injection patient felt much distressed, cried out with much precordial pain; also severe pain in the back. Uterus became firmly contracted and she had a severe chill lasting 30 minutes. Temperature rose to 103, pulse 120, respiration 32. At 2 A. M., one hour after the second injection, no foetal heart sounds could be heard. Foetal heart sounds were present before second injection. Delivered spontaneously December 26th, 5 15 A. M.; child stillborn. Patient had a severe post-partum hemorrhage which required packing of the uterus in order to control it. She also developed a severe form of herpes labialis. At the end of 36 hours the patient's condition became normal and she was discharged from the hospital at the end of 14 days.

Experiment 15.—Patient admitted to the obstetric service of Lebanon Hospital in the ninth month of pregnancy, suffering from chronic endocarditis and failure of compensation. General treatment for the cardiac condition was instituted and she gradually began to improve. Patient was due December 29th. On the 18th of December her general condition was fairly good and interruption of pregnancy was decided upon. December 18th at 4 P. M. injection of 3½ cc. f. b. s. She began to have pain towards evening, which ceased during the night. The following morning the pains reappeared, but were very weak. Another injection was deemed inadvisable because of her cardiac condition. Towards the evening the pains became stronger and lasted during the entire night. She was delivered December 20th, 11 A. M., child weighing 5½ lbs.

Experiment 16.—E. B., 20 years old, para 1. Menstruated last April 7, 1911. Married April 15, 1911. Due, according to date of last menses, January 15th; according to date of marriage, January 22nd. She suffered from congenital hip dislocation and was kept under observation for induction of premature labor because of pelvic deformity. The pelvic measurements were: Inter-spinal 21 cm., inter-cristal 22.5 cm., external conjugate 18 cm., right oblique 20 cm., left oblique 19 cm., diagonal conjugate 10 cm. She was told to come in the 37th week of pregnancy

for induction of labor. She was admitted to the hospital December 28th, 12 M. On examination the head was found above the brim, cervix not obliterated. December 28th, 10 P. M., injection 9 cc. f. b. s. At 11 P. M. patient began to have pains in the abdomen. At 2 A. M. the pains increased. Temperature, pulse, respiration normal. December 29th patient had irregular pains during the entire day. December 30th pains subsided. December 31st injection of 15 cc. of pituitrin subcutaneously, but no effect whatsoever was noticed. January 1st, 4.50 P. M., injection 10 cc. f. b. s. At 9 P. M. patient began to complain of pain in the abdomen, which lasted during the entire night. January 2nd, injection of 15 cc. f. b. s. intramuscular. The pains increased for a short time but later subsided. January 3rd cervix was two fingers dilated, head engaged, membranes bulging, but patient had no pain. January 4th pains reappeared, becoming stronger during the afternoon, and she delivered at midnight January 4th.

Experiment 17.—B. S., 35 years, para 1. Last menses July 1, 1911. Admitted to the hospital March 15, 1912. On examination the head was found above the brim, cervix closed, membranes intact. T., P., R. normal. March 16th, 1 P. M., injection of 9 cc. f. b. s. This was followed by a chill lasting 3 to 4 minutes. No reaction in temperature, pulse, respiration. Ten minutes later a few uterine contractions were noticed. March 17th patient complained of slight pain in the back, also in the abdomen. At 12.40 P. M. she was injected again 20 cc. f. b. s.; no reaction followed. At 3.30 P. M. she was again injected 15 cc. This was followed by a severe chill, but no pain. She was discharged March 18th.

Experiment 18.—A. S., para 1. Menstruated July 1, 1911. Married July 11, 1911. Admitted March 22nd, 8.45 P. M. Vaginal examination showed no dilation of cervix, head floating above the brim, membranes intact and having no signs or symptoms of labor. Came to the hospital to inquire about pain in the back she had for the past three months. She was put to bed and slept undisturbed during the night. March 23rd, 1 P. M., injection of 10 cc. f. b. s. Ten minutes later patient had a chill lasting two minutes. One-half hour later she had a series of rapidly following pains. Two hours later the patient had pain in the back at regular intervals. The uterus contracted regularly, but these contractions were painless. The pain subsided and also the uterine contraction early in the morning. March 24th, 2 P. M., injection of 13 cc. f. b. s. This was followed by uterine contractions and no pain. Examination showed the cervix to be two fingers dilated. During the latter part of the afternoon she had irregular slight pains. March 25th patient had no pain. At 1.20 P. M. examination showed the cervix to be three fingers dilated, somewhat thinned out. At 1.45 A. M. she was again injected 15 cc. f. b. s. This was followed by uterine contractions and regular pains, which

became more severe and frequent. At 8 P. M. the cervix was fully dilated, membrane still intact. 8.30 P. M. the membranes were artificially ruptured. In the evening the pains became stronger and at more frequent intervals. She was delivered at 1.15 A. M. March 26th, male child weighing 6 lbs. 1 oz., apparently slightly premature.

Experiment 19.—D. M., 30 years, para 2. Menstruated last June 15, 1911. Admitted to the hospital March 4, 1912, complaining of severe frontal headache, dimness of vision and slight edema of the legs. Vaginal examination revealed the cervical canal closed and not obliterated, the head presenting. Urine was full of albumin and hyaline and granular casts. In view of the above symptoms interruption of pregnancy was decided upon. March 15th at 2 P. M. patient was injected with 11 cc. f. b. s. Ten minutes later she developed a severe chill lasting 7 minutes. This was followed by two strong pains beginning in the back and radiating to the front. During the night patient had uterine contractions but no pain. March 6th patient was again injected with 22 cc. f. b. s. This injection was followed by a few pains of a half a minute duration. On examination the cervix was found to be three fingers dilated. March 7th, 12 M., another injection of 22 cc. f. b. s. was given. This was followed by strong pains at regular intervals and she was delivered at 3.45 P. M., female child weighing 8 lbs. After the first injection the urine contained less albumin and fewer casts, and on the following day no albumin and no casts were found. Patient also developed a polyurea, having passed 80 ounces in the 24 hours after the first injection of the serum.

RESULTS OF EXPERIMENTS.

In summing up the results of our experiments there is one difficulty to overcome; that is the lack of positive knowledge of the signs and symptoms which would point 24 or 36 hours prior to the actual onset of labor, so that one could safely state whether a given patient will go into labor within the next 48 hours. If this were possible to foretell, then our experiments would assume the exactness most desirable in all scientific investigations. Furthermore, there is another aspect in these investigations, namely, that it is impossible to incorporate in a report all the observations noticed at the bedside of the patient, and the result is that no matter how minutely every detail is recorded, it appears incomplete.

In many of our experiments the pulse, temperature and respiration and any unusual sign or symptom observed about the patient objectively and subjectively were recorded every fifteen minutes, but this was soon changed to hourly records. The uterus was watched for contractions at regular intervals. A nurse and member of the house staff were in constant attendance upon the patient after each injection. We were

very fortunate in our series of cases, as we had a number of women who, without a doubt, were not in labor or at term. Even one most inexperienced in obstetrics would pronounce them as such. A number of our patients were admitted for the induction of labor. In six patients, experiments 2, 6, 14, 15, 16 and 18, one or more injections induced labor pains which led to the expulsion of the child. These patients were at least from 10 to 18 days before term. Cases 6 and 16 were admitted to the hospital for the purpose of inducing labor because of flat pelvis. They were at least two weeks before term. In Case 15 labor was induced because of a chronic endocarditis, and she was at least nine days before term. Case 14 was a private patient who called at the office to inquire regarding her shortness of breath. Had no signs of labor. She was sent to the hospital to have labor induced with foetal serum. She immediately went into labor after the second injection; in addition, she suffered from a severe reaction.

Case 2 was very typical. She was distinctly three weeks before term. She had no signs of labor. Was admitted to the hospital and after the first injection of a comparatively small dose of serum, she immediately went into labor and gave birth to a premature child weighing 4 lbs.

Case 18, although not as typical as the others, was undoubtedly not in labor. In order to eliminate the slightest suspicion as to whether labor would set in, she was let alone during the night and morning after her admission. She slept the entire night undisturbed, and had no pain the entire forenoon. After the first injection in the early part of the same afternoon she immediately commenced to have uterine contraction followed by pains.

Cases 6 and 14 must be studied from another aspect. As we reached this stage in our experiments we changed the method of procedure. We noticed that when the initial dose is large it was not effectual, so we commenced with small doses anywhere between 5 and 7 cc., to be followed by a larger dose of 20 to 25 cc. four or five hours later. Both patients received small doses for the first injection and large doses for the second, and both suffered from severe reactions. High temperature, rise in pulse, severe chills, restlessness, and severe prostration and cyanosis. In Case 14 no radial pulse could be felt for eight hours. (This patient was a heavy cigarette smoker for the past sixteen years.) In both patients foetal heart sounds were present before second injection, but no foetal heart sounds could be elicited when the temperature reached its maximum. They recovered very quickly after the child was born.

EXPERIMENTS 1 AND 2.

Two of our cases were admitted to the hospital at term, but there were no signs of labor. As a rule patients are not admitted to the hospital unless they show signs of labor. Both were injected after they were observed for a few

hours to ascertain if they had pain; in both uterine contractions, not painful, were observed after the first injection. We have learned during our investigations that uterine contractions, however strong they may be, do not cause pain. The patient begins to suffer pain when the presenting part or the water bag commences to press on the cervix or the neighboring structures in the pelvis. We observed strong uterine contractions taking place, and the patient is not aware of it. We really feel justified in concluding from our observations that uterine contractions by themselves are not painful, for we had ample opportunity to watch both the initial contraction and the initial pain. On close questioning of the patient during many uterine contractions, whether she suffered any discomfort, the answer was usually in the negative.

In inertia we found the serum to be effectual. As illustrated in Experiments 4 and 10, both patients were in labor. In Case 4 the cervix was two fingers dilated, in Case 10 three fingers dilated, membranes intact in both. The pains subsided in either case after admission; both commenced to have strong labor pains after they were injected. Small doses of the serum were used in these patients. These cases by themselves would not be convincing of the efficacy of the serum, because rightfully it could be supposed that they would probably go into active labor were they not injected, but in conjunction with other cases we think it of value, as both patients began to have active labor pains within a short time of the injection. Experiment 3 we classify as doubtful. The only question which arose is whether the repeated injections did not precipitate labor. She was due December 15th. November 27th 8 cc. was injected; no reaction. November 28th 20 cc. was injected; she had a few slight, transient pains following it. She left the hospital November 29th. Re-admitted December 1st; was injected again December 2nd 19 cc., but no reaction. She finally gave birth December 3rd. It may be possible that the addition of the extra serum helped to saturate the maternal organism with that particular substance which causes the onset of labor, and in this way brought about labor at an earlier date.

Experiment 19 must be classed by itself. She was referred to the hospital with symptoms of threatened eclampsia. She had severe headaches, disturbance of vision, slight edema of the lower extremities, with a history of having passed very little urine in the past 24 hours. Examination of urine showed it to be full of albumin and casts. Induction of labor was decided upon in view of the clinical findings. Patient was a relative of one of the nurses on the staff of the hospital. The various methods of induction of labor, including the use of foetal serum, were suggested. She was asked if she had any objection to the use of the serum. Her answer was "to use my own discretion in the case." We decided to bring on labor by the use

of serum, and not only did it cause the onset of labor, but all the urinary symptoms cleared up after the first injection. She passed 80 oz. in the next 24 hours and her general condition also improved.

NEGATIVE RESULTS.

Seven of the experiments proved negative. No reaction, as a rule, took place. We found that the most frequent symptoms after the first injection were chills lasting from 2 to 30 minutes, nausea and vomiting. Precordial pain or oppression was present in four cases. In nearly all of these cases very little reaction took place. Experiments 5 and 17 have had uterine contractions and pains, but were transient in character and subsided quickly. We are therefore not justified to assume that the pains were due to the injection of serum. The other five cases had no reaction whatsoever except for a slight nausea.

Now that we have demonstrated that foetal serum will cause the onset of labor, further investigations must be made to ascertain the actual origin of these substances. It will not be of any scientific value unless these "labor substances" are isolated from the maternal circulation or from the foetus or placenta. At present these questions will have to be held in abeyance as investigations along these lines are not sufficiently conclusive to formulate a definite theory.

In order to firmly establish that these labor substances are present either in the maternal or foetal circulations and that they act specifically on the muscular structure of the uterus, causing it to contract, experiments with other protein substances will have to be conducted to ascertain whether they may not act in the same manner when introduced in the circulation of the pregnant woman.

That foetal serum does not act the same way in every case can be explained by the lessened susceptibility of the uterus as proven by Sauerbruch and Heyde in their experiments on rabbits. Shultz (*Journal Pharm. and Exp. Therapeutics*, Baltimore, 1910-11, 221-229) has conclusively shown that smooth muscle contracts quite readily when exposed to small quantities of serum. This normal irritability may be greatly augmented by first sensitizing the animal, as has been done in the studies of anaphylaxis. The contraction curve is much greater in extent than in unsensitized muscle. It also seems possible that this hypernormal irritability may be reduced to normal or subnormal if the animal was first rendered immune to relatively large doses of serum.

In our experiments we had the most severe reaction in those cases that we injected with small doses first, and followed by large doses 4 or 5 hours later. We are really at a loss to explain it. The first dose could not possibly establish a hypersensitiveness in so short a period of time, neither could it produce an anaphylactic reaction, for it requires at least 8 to 10 days to produce anaphylaxis. However, V. C.

Vaughn and others have shown that protein fever may be produced in rabbits after the first intravenous injection of washed human blood cells. Our cases may belong to this category.

With our present hazy conception of anaphylaxis we are unable to explain definitely the many mooted questions that arise in the course of experimenting. In all probability the whole act of labor and the toxemias of pregnancy will in the future be viewed as a mere anaphylactic reaction. The experiments of Lockman and Theis show that serious changes which must be considered as anaphylactic manifestations are produced by injecting fresh foetal rabbits' serum into full-grown rabbits.

Von der Heide considers his results in reference to the onset of labor as an anaphylactic reaction. He thinks that normally the birth act is brought about by the slow transmission of foetal substances into the blood of the mother, which give rise to the formation of antibodies "labor substances," as he terms them. Towards the end of gestation these substances are transmitted to the blood of the mother in excessive amounts. That there is a deluge of these substances is proven by the contractions which arise in the last weeks of pregnancy and also by the uniform results obtained by the injection of foetal serum in inertia.

The whole range of the toxemias of pregnancy and especially eclampsia should be viewed from the standpoint of an overcharged maternal circulation with foreign protein substances. In eclampsia we have many clinical manifestations pointing to this. The sudden onset of symptoms and their sudden disappearance, the sudden changes found in the urine and their sudden disappearance, the more frequent occurrence of the various toxemias in primiparas and the fact that eclampsia is more frequent in twin pregnancies tend to prove that these manifestations have their origin in the foetus or placenta.

Wolff-Eisner have positively proven that during pregnancy foreign protein substances (from the syncytium) are continually thrown into the circulation of the mother, and these substances under certain conditions bring about a state of eclampsia. They contend that eclampsia must be considered as the rarest and most severe form of those symptoms dependent upon the absorption of foreign albuminoids. This single clinical manifestation of the absorption of foreign substances during pregnancy stands in the same relation clinically as the varied reactions to the absorption of the pollen proteid. Harmless conjunctivitis on the one hand and severe asthmatic attacks on the other, both caused by the absorption of the same pollen proteid.

Of great interest is Experiment 19 of our series. This patient was admitted to the hospital with symptoms of threatened eclampsia. She had albumin and casts in the urine. After the first injection of serum she began to improve, and the albumin and casts diminished in amount.

She developed a polyurea and in three days all the symptoms pointing to eclampsia disappeared. We can explain this phenomena by the theory advanced by R. Freund and L. Pincussohn that cases of puerperal toxemias may be cured by the injection of serum obtained from a healthy pregnant woman, as it will supply the necessary antibodies which the patient does not possess.

Finally, if it is proven conclusively that these labor substances are formed in the pregnant woman only, the entire aspect of the physiology of obstetrics will be changed. The importance of these investigations is not that it may lead to the discovery of a new therapeutic remedy to induce labor, but it will establish the pregnant stage and its many abnormal manifestations on a sound scientific basis.

Further investigations along these lines must be conducted. Their results of von der Heide and that of my own sufficiently warrant it. We believe that in the near future our entire conception of labor and its various clinical aspects will be changed, particularly so when further progress will be made in the study of anaphylaxis.

In conclusion we wish to state that our investigations fully affirm the results and findings of Von der Heide in almost every particular.

I wish to thank my associate, Dr. Joseph Bakst, who was in charge of these experiments during my absence. Also to Dr. Elsie Fox for reviewing the literature in connection with these investigations, to the members of the house staff and nurses who so willingly co-operated with me in recording all the details observed in the entire series of our experiments.

Discussion.

DR. ROSS MCPHERSON, New York City: I have been much interested in this paper, because when this subject came up I was quite impressed with the value of foetal serum, and I have treated some 28 cases and have been much disappointed in my results.

I am glad to hear what Dr. Rongy has to say, and I wish in closing he would go into more detail about the technic. In the 28 cases, I had but one case that simulated labor; this lasted only two hours and proved ineffectual.

I feel, in view of the reports that come to us from abroad, and particularly now, there must be something wrong with my technic.

DR. RONGY (closing the discussion): May I ask Dr. McPherson what technic was used?

DR. MCPHERSON: Simply injections of ten to fifteen cc. of the foetal serum. Several cases had three injections.

DR. RONGY: How did you prepare the serum?

DR. MCPHERSON: We separated it as we would human serum.

DR. RONGY: The serum should be prepared by collecting it in a vessel and allowing it to separate, and the difference is this: When we began

we used large doses, and it was not as effectual as when we began the small doses. We failed in two or three cases. Then we returned to small doses, four to five cc., to be followed by 20 or 30 cc. five or six hours later. There is no question in my mind but that some of our cases were not in labor. Two cases were admitted to the hospital for the induction of labor. One received a small dose of the serum when she got into labor, but we must not be discouraged by not seeing a result following the administration of one or two doses. We must use three or four or five or six doses. In three weeks I had to use six doses in her case, and as soon as I had injected the fourth dose she went into labor and gave birth in three days. The idea is not to give the serum if the patient does not react. If the patient does not react the blood is not saturated enough to get the patient to react.

FETAL OVERGROWTH AND ITS SIGNIFICANCE IN LABOR.*

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IN writing this paper, my purpose is to present certain conclusions drawn from personal experiences in the delivery of large fetuses, both at the Lying-In Hospital and in private practice.

Generally speaking, it may be said that overgrowth of the fetus depends on two causes. In one, we are dealing with a pathological condition, such as is found in true cases of chondrodystrophy. In the other, we have to do simply with an overgrowth, due in most instances to a continuance in the development of the fetus after the time for normal labor has elapsed. The first class of cases are monstrosities and do not concern us in this connection; this paper is devoted to the discussion of the latter class only.

By way of introduction to the discussion of our subject proper, it seems necessary to determine over just how much time a normal pregnancy ought to extend. A number of factors must be considered before we can assume that in any given instance the prolongation has or will have a pathological significance. Thus, in the case of a woman with a large pelvis, a fetus of more than ordinary size may be expelled without difficulty, although the normal length of pregnancy may have been exceeded. On the other hand, a fetus of normal size may be unable to pass through the mother's pelvis on account of its contracted diameters even before the full term has been reached. The latter aspect of the question will also interest us in connection with some of the other statements about to be made, and will, therefore be referred to again later on.

An exact diagnosis of the length of the pregnancy in any particular case is often surrounded with a great deal of doubt. The medico-legal aspect of the question has apparently received more attention than the purely obstetrical phases of the same, but the consensus of opinion seems to show that for all practical purposes, a full term pregnancy extends over a period of at least 280 days from the first day of last menstruation. This rule is probably subject to a number of exceptions, as it is often difficult to determine which menstrual period is the one from which the calculation must be made, but if there is any doubt, the progressive growth of the uterus as shown by the rise of the fundus will, in most instances, serve to confirm the estimate. As the expected date of confinement is often found to vary from the physician's prediction, it may be necessary to allow a leeway of a week or two in either direction. In those cases where conception takes place during a period of amenorrhœa, we can only depend on observations, based on the growth of the uterus for our estimate. The length of the fetus also affords us a means, though an uncertain one, of calculating the length of pregnancy, and Spiegelburg has proposed the following measurements of the fundus above the symphysis:

22nd to 28th week	.24 to 24.5 centimeters
28th week	.....26.7 centimeters
30th week	.....28.4 centimeters
32nd week	.....29.5 to 30 centimeters
34th week	.....31 centimeters
36th week	.....32 centimeters
38th week	.....33.1 centimeters
40th week	.....33.7 centimeters

These measurements, however, are subject to considerable variation, as they are dependent, not only upon the size of the fetus contained within the uterus, but also upon the degree of distention of the abdominal contents. Nevertheless, in cases in which we possess no other data, they occasionally afford us information of very considerable value.

The subject of fetal overgrowth is referred to more or less extensively by a number of writers in text-book literature, although some apparently disregard the possibility of its occurrence as a factor in labor.

The following were among the most noteworthy references found:

Gallabin and Blacker in their "Practice of Midwifery" (7th Edition, 1910) state that the excessive size of the fetus may, among other causes, be due to post-maturity, for very large children with unusually ossified bones have been born when labor has not occurred for several weeks or even a month beyond the expected date. They likewise claim that in fourteen to fifteen per cent. of all children weighing over 8¾ lbs. (4,000 grams) the pregnancy has lasted more than three hundred days, but that the ex-

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

cessive size of the fetus is rarely so extreme as to cause much difficulty in a perfectly normal or wide pelvis. Combined, however, with slight degrees of narrowness in the maternal passages, a large fetus is one of the commonest causes of difficulty in labor.

In discussing the treatment, Gallabin and Blacker believe that protracted labor from excessive size of the fetus is to be treated in the same way as that due to equable contraction of the pelvis. They consider that in general, extraction by forceps will be sufficient to meet the case.

In discussing overgrowth of the fetus, Hirst, (*Text-book of Obstetrics*, 6th Edition, 1909), considers that excessive growth is quite rare and states that in one thousand children delivered in the Maternity Hospital of Philadelphia, only one weighed more than twelve pounds. The largest child he had ever seen personally weighed fifteen pounds. He believes that the causes of overgrowth in the fetus include the prolongation of pregnancy, oversize and advanced age of one or both parents and multiparity. The author believes that prolongation of pregnancy is the most common cause, and states that in six per cent. of women pregnancy may be expected to be prolonged beyond the three hundred days, and for every day that the fetus is retained beyond the usual time, there is an increase in size and weight beyond the normal. He states further that so much difficulty and danger may be experienced from this cause that it is a good rule in practice to allow no woman to exceed the normal duration of pregnancy by more than two weeks. By inducing labor at that time, one occasionally interferes unnecessarily, but often avoids complications and difficulties of the most serious nature. He considers that overgrowth of the fetus is one of the most difficult conditions to diagnose with precision.

In a "Clinical and Forensic Study on the Prolongation of Pregnancy," by Dr. Maria Ciulla (*Zeitschrift für Geburtshilfe und Gynäkologie*, Bd. LXVII), the author's observations on a series of two hundred and fifty-two cases of prolonged pregnancy in Professor Bossi's clinic at Genoa are summarized as follows:

I. A prolongation of pregnancy was noted in 7.61 per cent. of the cases. These figures seem to be influenced by the race of the patient, by the individual, and also vary in different years, months, and seasons.

II. Certain factors in the production of this condition include the age of the patient; the appearance of the first menstruation; length of the latter, and of the intra-menstrual period; occupation of the patient; rest during pregnancy; stature; conformation of the pelvis and overdistention of the uterus. The most important etiological factor, however, undoubtedly resides in the uterus, and is believed by the writer to consist of an excessive and premature fatty degeneration of the uterine muscle during pregnancy.

For this reason, it is important to pay greater attention to the general health of the patient, the number of her pregnancies, her health during pregnancy, and to their repetition.

III. Prolonged pregnancies constitute a true complication for the following reasons: (a) Because labor, especially during the period of dilatation becomes prolonged, owing to the weaker character of the labor pains, which are almost always the rule in prolonged labor, and as the result of which atonic hemorrhages are very apt to follow the delivery of the placenta. (b) Because operative interference is often required and aside from this a large percentage of other injuries are apt to result. (c) Because even where the maternal prognosis is favorable, this does not apply to the children, in which the mortality in this series was found to be 7.48 per cent.

IV. Excessive development of weight of the late male fetuses is not a constant characteristic. A more important criterion is their excessive length. Therefore, it might be more proper in cases of prolonged pregnancy, to speak of true fetal macrosomia with early calcification and advanced development of the cranial bones.

V. The placenta likewise undergoes an increased development beyond the normal as regards its weight. This corresponds to the increase in the development of the fetus.

Ciulla's figures are based on a series of 3,331 cases observed during a period of sixteen years. Of this number, 2,332 only reached the end of their pregnancy, and among these 252 cases of prolonged gestation were noted. This writer considers that the normal pregnancy does not extend beyond 289 days.

Williams in his text-book on "Obstetrics" states that the average infant weighs about 3,250 grams (seven pounds). He also quotes T. F. Riggs, as having made a series of observations on seven hundred and seven full-term white children at Johns Hopkins Hospital, in which the average length was 49.64 cm. and the average weight 3,316.9 grams (7.54 pounds). The largest child in this series weighed 4,053 grams (nine pounds twelve ounces). A series of colored infants studied by Riggs showed a difference in weight of about 200 grams (7 ounces) in favor of the white race. Williams states that perfectly healthy full-term children may vary from 2,500 to 500 grams in weight, rarely exceeding the latter figure, but believes that in the majority of cases where weights of fifteen or more pounds are spoken of, a careful inquiry will usually show that the weight is not the actual one, but merely estimated.

Hecker (*Klinik der Geburtskunde*, 1861, No. 49) found in 1,096 cases that only two children weighed over 5,000 grams. Winkel ("Neue Untersuchungen über die Dauer der menschlichen Schwangerschaft." *Volkmann's Sammlung Klinischer Vorträge*, New Series, Nos. 292,

293, 1901) found five in three thousand five hundred deliveries and Starcke ("Ueber Geburten bezw. Spätgeburten bei Riesenkindern, etc." *Archiv. f. Gyn.*, 1905, LXXIV, 569-619) found sixteen in three thousand four hundred deliveries. Ludwig states that out of one thousand five hundred and sixty-six children, only one weighed 5,300 grams, and Vonyear found only six children that exceeded 5,000 grams at birth in a service of seven years at the Baudelocque Clinic in Paris. Williams himself, in a series of six thousand deliveries in his service reports the largest child as weighing 5,833 grams (twelve pounds eight ounces). He also quotes a number of other exceptional cases of large children and believes that the size of the fetus, increases with the age of the mother up to the twenty-eighth or thirtieth year, if the pregnancies have not followed in too rapid succession; also that the size is dependent to a considerable extent on that of the parents, especially the father. The social condition of the mother, and the comforts by which she is surrounded are also stated to have a marked influence on the child's weight.

In addition to the weight of the fetus, the diameters of the head also play an important part in the question of prolonged pregnancy. The normal diameters of the fetal head, according to Williams average as follows: Occipito-frontal, 11.75 cm.; Biparietal, 9.25 cm.; Mento-occipital, 13.5 cm.; Sub-occipito-bregmatic, 9.5 cm. The greatest circumference of the head averages 34.5 cm. The length of the fetus is usually believed to afford a more accurate criterion of the age of the child than its weight, and the average length is believed to be about 50 cm. (20 inches) at term.

While engaged in the preparation of this paper, a publication along similar lines by Professor A. H. Wright of Toronto came to my attention. Dr. Wright has advocated practically the same procedure to which I am personally committed and in a recent number of the *Canadian Medical Journal* (October, 1911), he replies to certain questions and criticisms as follows: "Observations have shown that the growth of the child in utero after viability is very rapid. At the end of the seventh month, the average weight is 1,400 grams, at eight months 2,200 grams, and at nine months 3,470 grams—the increase in the latter month being nearly 58 per cent. The probable increase in the tenth month is, therefore, about 2,000 grams. In other words, a seven pound baby at term will weigh almost eleven pounds at the end of another month and a nine pound baby thirteen to fourteen pounds. In addition to this, the child loses some of its flexibility, universal flexion is less marked, the head becomes harder and the difficulty of delivery is increased. As to the criticism that one cannot tell when a patient has reached term, it may be stated that careful examinations conducted at proper in-

tervals are usually satisfactory, and if there is any doubt one may wait at least a week. It seems safer, however, to induce labor one week before term than two weeks after."

Dr. Wright believes that protracted pregnancy occurs in about 15 per cent. of all cases and states that careful observation and increased experience have fully confirmed his opinions previously expressed. He thinks that it would be well for both mother and child to make it an ordinary matter of routine to induce labor in all cases within a few days after term.

In most instances, we are able to estimate the length of a given pregnancy quite fairly accurately from the menstrual history, and Naegele's rule affords us a simple means for calculating the date of expected labor. The result obtained ought always to be considered in connection with the observations on the rise of the fundus.

The latter at four months is usually a little above the symphysis, at the fifth month is about midway between the latter and the umbilicus, at the sixth month, it is at the level of the latter, at the seventh month, it reaches a hand's breadth higher, at eight months still another hand's breadth, and at eight and a half months, it is at the level of the ensiform cartilage. Subsequently, between this period and the end of the term, it sinks down until it reaches the same level as that occupied at the eighth month. If labor does not come on when this lowest point has been reached, the fundus again begins to rise as before. In this description, calendar months are referred to in preference to the lunar months, because most women are found to calculate their pregnancy in terms of the former than of the latter. The statement may be quite safely made that if labor does not come on within two or three weeks after the fundus has begun to descend, that the physiological time has been exceeded.

Many theories have been advanced to account for the onset of labor, none of which can be regarded as the sole one. It is very likely that several of these taken together have an influence in producing this phenomenon. In most women who are active, labor comes on within a few days of the expected time, but a reduction in bodily activity, which is often coincident with the end of pregnancy, may do much to cause a postponement of labor. This occurs not only in private practice, but also in the hospital service, where patients who had been admitted within a few days of labor, and with all the evidences of the beginning of this process, have ceased to continue, and go for a week or more without anything further happening. It is quite generally conceded that the prognosis in cases of labor, with very large children is most unfavorable for the child and also to a certain extent for the mother, for the passage of an abnormally large child always means a prolonged labor with its possible evil consequences.

The skull of an overtime fetus cannot be as readily molded, because in addition to its size, nature has also to contend with bones which are less elastic because of the increased degree of ossification present. Even if the mother does succeed in forcing such a large head through the brim and into the pelvis, the effort entailed usually results in an inertia of the uterus or a tonic contraction of its musculature, with the possibility of post-partum hemorrhage, and in addition to this complication, we also have to consider the possible pressure effects on the brain of the child. From a consideration of these facts, it would appear necessary to note carefully in every instance, the growth of the uterus in relation to the supposed length of the pregnancy, and if labor does not come on within a reasonable length of time after this limit has expired, that steps be taken to induce the process. I am quite convinced from personal observations, that large fetuses are almost invariably due to an extension of the time of pregnancy beyond the normal limits. This statement does not, however, refer to a dystocia due to the true pathological conditions already mentioned.

An examination of the records of the Lying-In Hospital shows that in 500 serial cases delivered in the wards, the average weight of the infants was 3,366.70 grams (6.01 pounds). This series does not include any babies weighing less than 2,700 grams. The average weight of the babies born in the hospital is less than that of the cases in the outdoor department, where the average weight in a series of over 9,000 cases (estimated in 1896) was found to be 7.7 pounds. This discrepancy may be accounted for by the fact that the hospital records included many women that were either sick with complicating diseases, homeless, poorly nourished and in whom labor was induced prematurely for various complicating conditions. The outdoor patients, on the other hand, were mostly multiparæ and provided with homes. Of the 500 cases delivered in the hospital, the greater number of the babies weighed between 3,000 and 4,000 grams, forty-five weighed between 4,000 and 5,000 grams and only five of the series 5,000 or over.

We are apt to meet with simple overgrowth in private practice more often perhaps than in a hospital service, because these women are less active before labor, and in many cases their musculature, including that of the uterus, is in a greatly relaxed condition. This makes it even more incumbent upon us to watch these cases carefully.

As instances of prolonged pregnancy, I desire to briefly relate the histories of the following characteristic cases which were personally observed. The first one being typical of a large class I will report somewhat in detail.

Case I. Mrs. B. G. married; age forty four; birth-place Ireland; para XIV; seven children living, four miscarriages, two forceps deliveries,

seven easy labors; was admitted to Dr. Davis' service at the Lying-In Hospital on February 26, 1911 (C. N. 19162). Date of last menstruation, May, 1910, date of expected labor, February 5, 1911. She gave a history of having been in labor for three days, during which time several attempts at forceps extraction had been made. The woman was stout and well nourished, and the pelvic measurements were normal. The membranes had ruptured on the day previous and the uterus was in a state of complete inertia. The abdomen was greatly distended and examination showed the presence of a large child in the R. M. A. position, the face being moderately engaged in the brim. An attempt was made to convert the face into a vertex by the Schatz method, but was found impossible of execution. The conditions for a version, however, were favorable, and this, in view of the large pelvis seemed to offer the best chance for saving the child. The cord pulsed very feebly and infrequently, although the fetal heart had not been heard for some hours previously. The cord, which had prolapsed alongside the face, was accordingly pushed back and the anterior leg seized and brought down. The other leg was likewise delivered and the body of the child readily extracted until the umbilicus presented. During these manipulations, the cord, which was very long, again came down and was found to be pulseless. The arms were extended and the anterior one was delivered first, but with some difficulty, resulting in a fracture of the humerus. In view of the fact that the child was dead, a craniotomy of the after-coming head was decided on in order to relieve the mother from the danger of any possible injury. Pressure on the head by an assistant through the lower segment of the uterus was first tried, however, and much to our surprise the head slipped through the pelvis without any difficulty. The placenta was delivered by Credé, thirty minutes later and the patient returned to bed in good condition. Examination of the fetus showed a medium degree of caput succedaneum over the right cheek and temporal region. The weight was 6,050 grams, the total length 65 cm. the vertex coccygeal, length 39 cm. The diameters of the head and trunk were as follows: Occipito-mental, 14.5 cm.; Occipito-frontal, 13.5 cm.; Sub-occipito, bregmatic, 10 cm.; Bi-parietal, 10.5 cm.; Fronto-mental, 8 cm.; Bi-zygomatic, 10 cm.; Bis-acromial, 15.5 cm.

The circumferences were as follows: Sub-occipito-bregmatic, 37.5 cm.; Occipito-frontal, 41 cm.; Bis-acromial, 53 cm.

The nails of the child were prolonged beyond the edges of the digits, the subcutaneous fat was abundant, the various folds deep, but aside from the large size nothing abnormal could be found. The cord was 111 cm. long, and inserted centrally into an oval shaped placenta which measured 16 x 25 cm. In the latter, there was consid-

erable degeneration of both the fibrous and calcareous variety. The cord was very much attenuated and apparently entirely free from Wharton's jelly. The venous trunk was very much distended and on histological examination, a partial obliteration of the arteries was found to have resulted from the presence of an endarteritis. In other words, there seemed to have been a marked interference in the fetal circulation, both from the parital obliteration of the umbilical arteries as well as a congestion of the umbilical vein. This probably accounted for the diminished heart action, as well as the condition of asphyxia in the infant before birth. The large amount of fibrous and calcareous degeneration in the placenta, no doubt, likewise contributed to this condition. It might be argued that this interference with the fetal circulation would retard rather than favor the growth of the fetus, but the overgrowth probably occurred before the obstruction had become sufficiently marked.

In this instance, we were probably dealing with a case of missed labor at term and the size of the fetus bears out the belief of the patient that she exceeded her time by at least four weeks, if not longer. In this case, the induction of labor at the proper time would undoubtedly have resulted in the delivery of a living child.

The following cases may be cited as additional instances of failure of labor to come on at term with resulting large child and are taken from personal records of private cases.

Case II. Mrs. I. M., para II, age thirty, pelvis roomy, with the internal conjugate undetermined. The previous labor somewhat prolonged necessitating a low forceps. The first child was large, well developed and weighed somewhat over ten pounds. The present pregnancy was normal, last period occurred April 28, 1910, and the labor was expected about February 2, 1911. Abdominal examination on December 16, 1910, showed a moderate degree of hydramnios with the fundus at seven and a half months. No signs of labor had appeared by February 14th. The cervix remained thick, one and a half fingers dilated. The uterus was very much distended and the head large and only slightly engaged. A Vorhees bag, size No. 2 was introduced, resulting in the production of a few pains. During the next day, the patient did not have any pains, but by evening the cervix was two and a half fingers dilated and very much softer. A gauze pack was introduced at this time and removed twenty-four hours later on the evening of February 16th. This had resulted in the production of only a few weak pains and the cervix was still fairly thick and three and a half fingers dilated. Manual dilatation was then easily carried up to four and a half fingers and the membranes ruptured. The head began to come down and the patient continued to have pains for about two hours, after which they ceased. On the

morning of the next day (February 17th), the cervix was completely dilated by the hands and pushed back over the head. The pains became stronger and more frequent and the child was born about an hour and a half later. The baby was well developed, with plenty of subcutaneous fat, projecting finger nails and weighed slightly in excess over ten pounds. The patient made an uninterrupted recovery.

In this case, even the various manipulations failed to bring on satisfactory labor pains, and it would appear that unless the pregnancy had been terminated by artificial means, labor would not have come on at this time.

Case III. Mrs. N. S., age 28, para III, with a very irregular menstrual history and an account of being generally nervous, irritable and in not very good general health. The first labor was very difficult, lasted three days and a baby weighing over nine pounds was finally delivered by forceps. The chief complaint during the puerperium referred to the bladder (pains and inability to void), continuing for a number of weeks. In taking the history of the present pregnancy, the date of last menstruation was stated to have been May 3rd, 1909, but owing to the irregular character and omission of several periods previous to this, this date could not with certainty be stated to have been the correct one from which to figure the length of the pregnancy. The patient was believed to be due on February 7, 1910, but even before that date everything pointed to the presence of a large child in the uterus with considerable liquor amnii. The pelvis was very roomy, but on account of the history of the prolonged labor with her first pregnancy, it was deemed wise to induce the process this time before the period for normal labor had gone by. The cervix was thoroughly softened and was about one finger dilated. There was no evidences whatever of labor pains, even after the usual administration of a large dose of castor oil. Labor was induced on February 9, by the insertion of a No. 2 Vorhees bag and after its expulsion the next morning, the cervix gradually dilated until complete dilatation was reached on the next evening. The membranes were then ruptured and the pains immediately became strong, resulting in the expulsion of the child about twenty minutes later. The baby weighed ten pounds six ounces, was well nourished and the head without caput or molding. Aside from a disturbance of the bladder similar to what had occurred in her first pregnancy, the patient passed through a perfectly normal puerperium, except that the involution of the uterus was somewhat delayed, probably on account of the over-distention to which it had been subjected. The baby, however, after the first few days became very sluggish and failed to cry at nursing time. It seemed to be developing a condition of toxemia from which it only recovered after vigorous eliminatory and stimu-

lating treatment extending over several days. The child gave one the impression of being considerably overdue and in a state of mental apathy and torpor. After it had lost some of its weight and became reduced to apparently more normal proportions, it was soon restored to the condition of an ordinary nursing infant.

It may be stated by way of comment that in this instance the irregular menstrual history did not afford a definite clue for determining the actual length of the pregnancy, but the excessive size of the child and the marked abdominal distention certainly pointed to a prolongation of this process, and if this child had been born somewhat earlier, it is very doubtful whether this condition of very nearly fatal toxemia would have developed.

Reviewing the facts noted in the foregoing paragraphs, the question remains as to the most rational procedure to follow in an ordinary and otherwise uncomplicated case of pregnancy, to avoid the possibility of dystocia from a prolongation of the process beyond the normal limits. Shall we induce labor at the time when the latter was expected, or shall we wait for the phenomenon to be initiated by natural means? Many will insist that the question is a difficult one to answer and it is undoubtedly true that unless the condition is carefully considered from every standpoint, we may sometimes be rewarded by the birth of a premature rather than an overdue child. It was noted in a study of the statistics at the Lying-in Hospital, referring to children weighing over 5,000 grams, that in a number of instances the labor, notwithstanding the size of the child, proceeded without great difficulty. In most of these cases, however, we are dealing with multiparæ with large pelvis and relaxed soft parts, but even in these cases and in others of a similar kind seen in private practice, the babies of large size did not apparently get along as well during the first few weeks as those of a smaller stature. The initial loss of weight in these cases is often considerable, the babies are sluggish, do not nurse well, and sometimes their elimination appears to be interfered with to such an extent that toxic symptoms of a serious character may result (*e. g.*, Case No. 4, III). On the other hand, the fact was also noted that a large proportion of children weighing between 4,000 and 5,000 grams, were also the cause of dystocia to an extent more noteworthy perhaps than in those of a greater weight.

It would appear from what has been said that the only way in which the best interests of both mother and child can be safeguarded against the possibility of complications from an overtime pregnancy, is for the attendant to keep a careful watch, whenever this is possible, on the growth of the fundus and the signs of impending labor, confirming this by a careful inquiry as to the date of the last menstruation and a calculation of the expected time of labor from the same. The growth of the fundus offers only presumptive

information during the middle months of a pregnancy, but between the sixth and eighth months, two or three observations will usually permit a fairly accurate diagnosis of the time of impending labor. As shown by Brodhead's statistics, the date of expected labor may be calculated in a very large proportion of cases from the last regular menstrual period.

Another sign which may be employed to determine the approach of term is the descent of the presenting part into the brim of the pelvis, coincident with the dropping of the fundus uteri. When elicited, this is almost diagnostic of the second week before impending labor, and may usually be confirmed by a bimanual examination to determine the position of the presenting part and the size of the fetus. Where, in the case of a vertex presentation and a normal pelvis, the head fails to remain engaged in the absence of other complicating features, we can be absolutely certain that its growth has progressed beyond the normal. In such instances, particularly if palpation of the body of the fetus bears out the original observation, it is not well to rely for too long a period on the probable or possible spontaneous passage of the head through the birth canal.

Coming now to the practical treatment of such cases, we may inquire as to the most rational procedure to adopt in order to prevent these complications attendant upon the birth of a large child. The fact has already been referred to, that women coming into the hospital apparently in active labor often cease to have any further pains and may go for a considerable period before delivering themselves. As this is probably due to cessation of the active exercise to which they are accustomed, we may draw from this a lesson, not to permit patients to relax their activities before labor, but to urge them to be up and about as usual, even if this is productive of some discomfort.

Impressed by the risks to both mother and child which have already been referred to, the writer in his own practice has adhered to the following procedure with good results in those where the evidence points to a pregnancy at term. On the evening of the expected date of labor or a few days later, a dose of castor oil, varying from one to two ounces, is given to the patient, which, in addition to producing a thorough evacuation of the bowels, also stirs up labor pains in many instances. Quinine has also been recommended as a suitable drug to be given with the castor oil, but it has been observed that the uterine contractions in such women are not regular and often inefficient. If the castor oil fails to bring on pains, the dose may be repeated on the following evening. After the lapse of two or three days, and in the absence of any other indications for previously terminating the process, steps may then be taken to initiate labor pains by more radical means. These means are directed primarily to the dilatation of the cervix

by hydrostatic bags or gauze packings. The preparations for the same should be as carefully conducted as for any other operative delivery. The patient's genitals are shaved and cleansed with soap and water, followed by irrigation with 1 per cent. lysol solution. Vaginal douches are not necessary. A small sized Vorhees bag (No. 1 or No. 2), is introduced through the cervix, if necessary, exposing the latter by the aid of a speculum, where this can be done. Otherwise the bag may be introduced through the medium of touch alone. If the cervix is not sufficiently dilated, this may be satisfactorily accomplished with the finger. The Vorhees bag should be inserted well within the cervix and care should be taken not to rupture the membranes. After the bag is in position, it is slowly distended with warm sterile water and in addition a gauze strip may be packed into the cervix and around the same, filling up the entire vault of the vagina. After tying the tube of the bag with tape, the same may be pushed within the vagina, and I have not found it necessary in any of my cases to attach a weight or to direct a nurse to pull on the bag at intervals. In place of the dilating bag, a plain gauze strip, one inch wide, may be packed into the cervix and vagina, the results from this procedure being quite as good, although somewhat slower than those from the bag, in dilating and softening the cervix and inducing labor pains. In most cases, the pains will come on some time during the next twenty-four hours, after which the bag or gauze is removed and the effects of the same observed for several hours. If the pains cease, or remain weak and irregular, a second bag or gauze packing may be introduced. This is usually sufficient to induce pains and to initiate dilatation of the cervix, and I have avoided the use of the largest size Vorhees bag on finding that it may displace the presenting part, so that a normal vertex presentation is converted into a face or even a shoulder as occurred once in the writer's experience. As a rule, the labor continues from this time without any further trouble, but in exceptional instances the pains are not satisfactory even after these measures, and in several cases, the writer found it necessary to resort to manual dilatation of the cervix and rupture of the membranes before satisfactory labor pains were produced. If carefully and conscientiously done, no fear need be felt of any possible infection in these cases from the necessary manipulations.

The employment of a bougie or a soft rubber tube provided with a stilette has also been suggested for the purpose of inducing uterine contractions and Dr. Lyttle of Montreal, has reported excellent results with this procedure. It is necessary, however, to introduce such devices between the membranes and the uterine wall up to the fundus, and as this may be attended with considerable uncertainty and risk in the hands of those not particularly expert in its execution, it does not seem advisable to recommend it for gen-

eral adoption. It is stated by those advocating this measure that from twenty-four to forty-eight hours usually elapse before the pains come on, and comparing it with the method advocated in this paper, it is seen that no greater interval elapses with the use of the gauze packing or the elastic bag, and the latter procedures are easier to carry out. A rupture of the membranes, moreover, is more likely to occur during the introduction of a bougie than either of the other measures referred to.

After labor has been initiated by the means referred to, it ordinarily proceeds in the usual manner, and if, as already stated, the procedure is carried out with the proper care and caution, no harm will result to the mother or child.

In a certain limited class of cases where pregnancy has proceeded beyond the normal limit, the routine procedure advocated may merely result in the loss of valuable time. This includes instances where labor has failed to come on, particularly in primiparæ, and the head and more often the shoulders are too large for proper passage, either through the bony canal or the soft parts at the outlet. In such cases, one should not hesitate too long before advocating an abdominal Cæsarean section, as the most certain and effective means of solving the problem, with the least chance of damage to the mother and child. In such instances, the prolonged molding which a large head must undergo in passing through the birth canal, with the possible subsequent employment of the forceps, and the dangers attending both of these conditions, often gives wish to the thought that a more radical or more rapid and satisfactory procedure had been resorted to such as the abdominal Cæsarean section.

While this paper contains certain definite recommendations for the induction of labor at term, in cases where this may be necessary, the writer at the same time wishes to urge very strongly the exercise of great care and precaution before resorting to such interference. The patient should have been carefully watched during the latter months of her pregnancy and the growth of the uterus observed. The attending physician should never be led into the false position of inducing labor, in order to meet his own convenience, and this phase of the question obviously needs no further discussion. On the other hand, if any uncertainty exists in the mind of the attendant, the opinion of a second physician should be sought for. In presenting these recommendations, the writer is well aware of the prejudices which exist in the mind of the majority of the members of the medical profession against unnecessary interference in labor, and there is no intention whatever to divert from this stand. It may be justly claimed, however, that such preventative measures as are here advocated, cannot be classed as unnecessary, and the observations of those who have seen the evil consequences of waiting too long for labor to

come on by natural means, have already led to the publication of a number of papers advocating a more radical treatment of the matter. It is quite generally believed that sepsis, in many instances, is brought about by the introduction of pyogenic organisms during the vaginal examinations in labor and for this reason, it is advised that such examinations be reduced in number as much as possible. In a labor, however, prolonged beyond the normal limits, as would naturally happen in a case of a large overtime baby, the number of necessary examinations would probably be very much in excess of what would occur in a case where the decision was made to induce labor and then carried out. Moreover the tissues at this time are more resistant to the entrance of a possible infection, because the trauma which accompanies a prolonged labor is absent. Dilatation of the cervix, and the introduction of elastic bags and gauze packing can be readily enough carried out under aseptic conditions without endangering the mother, and if the question were carefully studied, it would be found that septic infection is much more prevalent in those cases that have gone through a prolonged labor than in any in whom labor may have been induced for the reasons mentioned. In my own experience with the class of cases, in which labor was deliberately induced, no ill-effects resulted and in each instance it was felt that the patient's recovery was hastened by the step.

SUMMARY.

1. It is an accepted fact that in a certain number of women, the period of gestation is prolonged beyond the normal limits. This results in the production of large fetuses which rapidly increase in size and offer a possible obstruction to safe and satisfactory labor.
2. The progress of gestation in each patient should, therefore, be carefully watched, and if the date of expected confinement obtained from the menstrual history is confirmed by the growth of the fundus, labor should be induced within a reasonable period by appropriate measures, if it does not come on spontaneously at the proper time.
3. The induction of labor under these circumstances if properly conducted, is not attended with any risks to mother and child.

THE INDICATIONS FOR ABDOMINAL CESAREAN SECTION, WITH THE TECHNIC OF THE OPERATION AND ANALYSIS OF 352 CASES.*

By ROSS McPHERSON, M.D.,
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CESAREAN section has labored under the disadvantages of both a traditional and a sentimental prejudice due to its early history. As long ago as 1752 Mauriceau of Paris

wrote: "It is a damnable policy martyring and killing the mother to save the child; it is better that a living child be killed by embryotomy rather than to resolve upon the cruelty and barbarousness of the Cesarean section in which it is utterly impossible that a woman should escape."

In Great Britain this prejudice was as great as it was in France and for 70 years following these words of Mauriceau there were very few Cesarean operations in that country, and of the few undertaken all proved fatal except one.

Scarcely more than a decade ago Cesarean section was still considered an operation of doubtful expediency, to be advocated only in cases where the birth of a living child was believed to be impossible and after all other forms of delivery had been tried. As a consequence, it was performed upon women exhausted with other attempts at delivery, often after infection from manipulation, and with incomplete asepsis. The result is that Cesarean section has been put upon the defensive in order to prove itself under certain conditions an operation of choice, and it has even been forced to show a return of favorable cases with an average success higher than that demanded for other operative measures.

Fortunately such a resultant success has been achieved as to enable us to state at the onset of this discussion that if "certain cardinal principles" are carried out, the prognosis for life and after health for both mother and child is absolutely favorable in Cesarean section. What those cardinal principles are and what are the indications demanding the operation will be the endeavor of this paper to show. At the present stage of technic it may be fairly said that where the mortality is high, conditions exist which are inimical to the "cardinal principles" demanded for it.

Hitherto we have been wont to ask ourselves whether the patient could reasonably be delivered by any other method; now, however, we are asking: "Is not Cesarean section the safest method of delivery for certain cases?"

Many authorities have scarcely any doubt at present of the ultimate substitution of other methods of delivery for that of high forceps. Dr. Reuben Peterson goes so far as to say that the "time is coming when the operation of high forceps will not be taught in our medical schools as an obstetrical operation." He is convinced that Cesarean section gives far better results.

If physicians undertook Cesarean section with the careless technic and lack of asepsis often used in high forceps operations the "mortality would be appalling." Many forget that the use of high forceps in delivery needs greater technical facility on the part of the operator than is demanded for most other operative procedures. The serious sacrifices of life, the relaxations and displacements of pelvic organs, and the tears of the birth canal from forceps are in most instances inexcusable.

Two factors of vital importance for the in-

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creasing success of abdominal Cesarean operations which have been well brought out by Davis of New York, are sufficiently early ante-partum examinations and freedom from previous attempts at delivery. This, it should be repeated, is no new appeal, since Cazeaux, writing long before asepsis was known and 35 years before even an early effective antiseptics, deplored the ill effects of prolonged labor, rupture of the membranes, and attempts at vaginal delivery before undertaking Cesarean section.

There is still a proneness to adopt Cesarean section only after examination by several physicians and when all other methods have been tried and failed.

And it is not too much to say that this reluctant attitude of physicians ought to disappear, so that a timorous and belated acquiescence in an operative procedure which should have been one of election shall not negative its best results. It takes no argument to prove that such an attitude merely opens the door to the two most dangerous deterrents to success, exhaustion and infection of the mother. Both of these inimical conditions may reasonably be avoided if there is an adequate ante-partum examination at a sufficiently early stage to insure the performance of the operation under the conditions and at the period most favorable for recovery.

There are a number of cases of ruptured uteri in this series of 352 cases which might have been avoided if examination at a proper time had been made. As it was, the lack of intelligent co-operation on the part of the outside attendants permitted the patient to go into active labor many hours before seeking hospital assistance. One of these was a case of 30 hours of labor before operation and another a case of contracted inlet, an exostosis and a previous Cesarean history—the only case of repeated section where the old wound was ruptured. It may be said emphatically, then, that the eleventh hour is not the best time in which to decide upon the treatment to be chosen for delivery, and that many craniotomies, unfortunate complications, even serious injuries and deaths, may be avoided if the accoucheur has a certain and well-defined knowledge of the conditions to be expected.

While this statement is of general importance to the entire subject of accouchement, it is of very grave importance for the success of the Cesarean operation. It is conceded by many operators at the present time that if an ante-partum examination has determined upon the operation at the onset or before labor a two per cent. mortality may be expected, and if after two hours of labor in the second stage, four per cent.

Having given considerable space to the consideration of the preliminary precautions governing the operation of abdominal Cesarean section, it will be well to concern ourselves with the indications which upon examination will appeal to the wise surgeon as those which point to its choice.

Indications.—The author's own list of the indications for Cesarean section is condensed into the following category of six. It differs very little from certain other lists which are more expanded and contain no data essentially different. For the sake of the simplicity of the briefer classification it is here repeated. The indications are:

1. Deformed pelvis.
2. Disproportionately large child.
3. Placenta previa.
4. Eclampsia with partially dilated cervix, complicated or not with other causes.
5. Neoplasms of the uterus, such as fibroids, carcinomata, etc.
6. Vaginal deformities, such as marked contractions from scars, etc.

1. *Deformed pelvis.*—Taking these up in the order as given, we find that of the 352 cases in this series, exactly 20 were recorded as having a normal, large or roomy pelvis, and 48 were "not noted," indicating probably no marked lapse from normal; therefore, in 284, or nearly 78 per cent., some form of deformed pelvis was present. By deformed pelvis we mean any kind of pelvis which is so misshapen or contracted as to hinder the passage through it of a living child.

It has been stated that about 60 per cent. of all cases of this kind are liable to delivery by the spontaneous method; but slow dilatation and prolonged labor expose the patient to serious danger of infection on account of the lessened resistance due to exhaustion. As many as 26 per cent. will have premature rupture of the membranes, a condition bad for the child, as asphyxiation may be caused by placental circulatory interference, and the pressure of the presenting part upon a prolapsed cord is a frequent cause of death in spontaneous delivery with a deformed pelvis. "The repeated delivery of dead children in cases of contracted pelvis is unjustifiable and indicates a neglect of human life which should not be tolerated."

In the 128 cases recorded in the series now under consideration the true conjugate was under 8.50 cm., in eight cases, 7 cm., and in three cases 6 cm. or less. Where the true conjugate is 8 cm. or less after careful ante-partum measurements, the patient should be sent to the hospital for Cesarean section.

The general shape and contour of the pelvis is as important an indication of the necessity for Cesarean section as the measurements of the conjugata vera; for we now know that such irregularities as those of the Roberts type on account of the lateral contraction of the sides, also render delivery by the vaginal route impossible, although the true conjugate may be longer than normal.

The varieties of deformity considered in this series are in the following order, according to the frequency of their occurrence:

Justo minor	91
Contracted	41
Simple flat	37
Rachitic, with or without some of the other forms of contraction	31
Funnel shaped	13
Nagele	8
Deformed from hip disease	2
Kyphotic	1
Osteomalacic	1
Spondylolisthetic	1
Deformed and contracted in several ways at once	57

This does not bear out the statement of Whitridge Williams that funnel-shaped deformity is the most common abnormality among white women and constitutes 44 per cent. of all deformed pelvis.

2. *Disproportionate Child*.—Even in cases where there is no malformation and the true conjugate is greater than that demanded by certain authorities, there will still remain the factor of disproportion of the size of the child to be born. In this series there are seven cases where the indication for the operation was a child too large for delivery per vias naturales, and four of these cases were among the few normal or not noticeably abnormal pelvises.

3. *Placenta Previa*.—Twelve cases of placenta previa out of 350 is a disproportionate amount for any but an operative and emergency series, as the largest estimate given for general hospital practice is one case of placenta previa to every 207 births.

In Novak's 2,081 cases reported by different authors as treated by methods other than Cesarean section, the average maternal mortality was 8.65 per cent., and the fetal mortality 56.72 per cent.

Edgar's analysis of forty consecutive cases treated by version and breech extraction, simple breech extraction, forceps, and spontaneous delivery show a slightly lower maternal mortality, 7.5 per cent., and an infant mortality of 32.35 per cent. This was considered satisfactory, as half of these were ambulance and emergency cases.

In a previous series of placenta previa cases analyzed by the present speaker as treated in various ways, but showing less than one per cent. of Cesarean section operations, the percentage of deaths for the children was about the same as that quoted from other authorities. Here, as elsewhere, the situation was complicated by the fact that moribund mothers were brought in by the ambulance having had no examination of their condition early enough to prevent hemorrhage and shock from destroying "all but the most robust of infants."

A series of twelve is too small for a valid percentage, but the maternal mortality in this series, treated by Cesarean section alone, was

one out of twelve, or 8.33 per cent. This mother died of general sepsis on the 17th day. The fetal mortality was three,—two stillbirths. This is a 25 per cent. better showing than usual. Davis of Philadelphia thinks that in the present state of our knowledge there is no treatment to be compared with Cesarean section for central placenta previa *if the life of both mother and child* are to be considered. The high fetal mortality by vaginal treatment and the considerable maternal mortality seem to the speaker that Cesarean section will become to a greater extent the operation of choice.

Certain authorities believe that the indications for abdominal section in placenta previa should be an undilated cervical canal and tissue hard and unprepared for artificial dilatation. This condition exists in about five per cent. of cases, almost never in multiparæ. Further indications for multiparæ are to be found in those with cicatricial stenosis of the cervix or marked degree of contracted pelvis.

It is simpler to state that the ideal conditions for delivery by Cesarean section are to be found in a rigid cervix, a viable child, and a mother who is a good surgical risk, with diagnosis made early. Treatment without Cesarean section shows a frequent fetal mortality as high as 50 to 60 per cent. In the series now under consideration deformed pelvis was present in four instances, complicated in one instance with persistent bleeding.

4. *Eclampsia*.—New proof derived from Peterson's exhaustive study of the treatment for eclampsia emphasizes our former belief and statement that immediate emptying of the uterus is the treatment demanded. "Putting an end to pregnancy stops the intoxication, since it depends upon pregnancy" is a dogma which we all wish were true. In any event it seems to be a creed defensible from a pragmatic standpoint. The inactive policy which is somewhat natural to the obstetrician, who is perhaps justly conservative in his methods may be the worst possible treatment for eclampsia.

Peterson's 500 cases were gathered from 100 different operators and from 12 countries, and his general results are of primary importance. The average in eclampsia is 28.9 per cent. When there are no post-partum convulsions the mortality is 10 per cent. below this, and the general mortality decreases in any series and by any treatment according to the lessening number of ante-partum convulsions. After 10 ante-partum eclampsias the mortality takes a great leap upward.

"No physician can save life where the intoxication has extended to the kidney, liver and brain of the mother, and such serious degenerative changes often occur before the first convulsion." In operations immediately after the first eclampsia the mortality is as low as 18.51 per cent., the fetal mortality, of course, also depending upon the amount of intoxication which has

extended to the fœtus. A higher mortality for the children may therefore be expected after many ante-partum convulsions. While spontaneous delivery gives low death rate to the child, the general conclusions from this long list of cases is that the necessity to empty the uterus promptly is indicated as a necessity in eclampsia.

In our series there were 20 eclampsia cases and the maternal mortality was five—or 25 per cent.—only a little higher than Dr. Peterson's taken from 25 times as many cases, necessarily a much fairer method of calculation. The fœtal mortality in this series of 20 was three, one still birth and one child dying on the fourth and one on the eighth day after birth. But according to fair testimony, a fœtus showing no signs of life at time of operation cannot be included, therefore we have found only two deaths of children, or 10 per cent., a better showing than can be found in any other regular series by whatever treatment. Probably a cause for the lessened fœtal mortality lies in the decreased traumas due to a difficult operative delivery.

Dr. Peterson's figures show that the eclamptic conditions are present more frequently in primiparæ, but that the mortality is higher among multiparæ. The ratio in these 20 cases was about the same for both, as there were 12 primiparæ, with a mortality of three, and eight multiparæ, with a mortality of two. Twenty-five per cent. each time.

Fourteen cases were complicated with deformed pelvis or with ruptured membranes, or with both. These are facts of some significance, as a widely accepted indication for the abdominal Cesarean section is the complication of a deformed pelvis.

5. *Neoplasms.*—Neoplasms were of various kinds, fibroids, carcinoma, sarcoma and pelvic tumors. There were 18 cases in all with a maternal mortality of five and a fœtal mortality of seven. One of these cases of carcinoma died from shock after hysterectomy following the Cesarean section, and one from obstruction of the intestines by a large fibroid tumor. In two cases of large fibroid, the mother died in one instance from shock, and the child in the other from hæmophilia. In the two other deaths from neoplasms, one was from suppression of urine and the other from general peritonitis with a history of outside manipulation before admission.

6. *Vaginal deformities* made no large part of this series; but atresia of the vagina was the indication in several cases.

Membranes Ruptured Prematurely.—There were ruptured membranes in 165 cases. Of these an accompanying feature was frequently a deformed pelvis and sometimes a deformed pelvis with other complications. In one case there was an exostosis; in two, fibroids of the uterus. There was also one case of double monster, one of twins with prolapsed cord, one adherent cervix, one of Pott's disease. Impacted shoulder and transverse presentation at one time with eclamp-

tic complications, and two placenta previa cases, were accompanied by ruptured membranes. The entire mortality where there were prematurely ruptured membranes was: Maternal, 19, 11.5 per cent.; and fœtal, 31, 15 per cent., 14 stillborn.

Out of the 165 cases where the history was merely one of prolonged labor, deformed pelvis and ruptured membranes, the mortality was 12, 7.2 per cent. In all of the other cases, neoplasms, eclamptic complications, or other morbid concomitants were obviously present as a cause of death.

The entire mortality for the 352 cases is: Mothers, 38; children, 53. Of the latter, 20 were stillbirths.

There were 12 cases of maternal deaths where there had been outside manipulation and infection, causes of death being general sepsis, streptococæmia, staphylococæmia, in one case combined with spinal meningitis. One mother was brought in from the ambulance in shock with a ruptured uterus; the stillborn child was taken from the abdominal cavity. In one case the mother died on the table before the abdomen was opened. One case where lobar pneumonia was the reason for undertaking the operation, both mother and child died, the mother on the first day and the child on the fifth. Five deaths were due to eclampsia, five to neoplasms, one to Pott's disease, where the mother was moribund and the operation was undertaken solely in behalf of the child, who lived; four died of pneumonia, and one of pulmonary embolism. There were eight cases of shock, three from hysterectomy following Cesarean section, two from neoplasms and one from peritonitis. Eliminating only the moribund cases, where the mother's case was hopeless at time of operation, and including general sepsis from outside previous attempts at delivery, pneumonia, eclampsia and neoplasms in our series, we have a mortality of 33, or 9.6 per cent. maternal mortality.

The fœtal mortality of 53 included one double monster stillborn, one child of a hump-backed dwarf which died of inanition, one case of asphyxiation due to protracted labor. There was a case of atalectasis and one of nephritis, and the case where the stillborn child was taken from the abdominal cavity of the mother brought in in shock from ruptured uterus. The fœtal mortality with the four obvious cases removed amounts to 14 per cent.

Multiple Cesarean section.—There is always an interesting question attached to the repeated operation. In an estimated table given by McGibbon of Edinburgh we find that out of 150 cases taken from a New York list where multiple section had occurred as many as five times in two cases, four times in one case, three times in thirty-two cases, the mortality was five per cent.

The earlier table of 39 cases given by the writer himself showed three deaths, one of which, however, dying of anesthesia before the uterus was opened, gave about a five per cent.

mortality. In that series the two other maternal deaths were from complications of general sepsis and pneumonia. There was practically no foetal mortality in that series.

Out of the forty-four cases in our present series there were two deaths; one of periplegia from Pott's disease and one from peritonitis, making at most a little more than two per cent. McGibbon does not agree with Kerr of Glasgow, who sterilizes all women after the second Cesarean section. Olshausen has found only one case out of 120 where rupture occurred from repeated section. Covelaire thinks it occurs in about two per cent. of cases. In our series there were eight cases of Cesarean for the third time, two for the fourth, one for the fifth, and there was but one case of rupture from the old wound.

Harrar of our staff has recently published an article stating that the place where tissue may break down is between the scars, should successive scars be made. The uterine scar may be perfectly healed itself making strong tissue but at every new section it should be cut out and a new line of cleavage made with no possibility for weakening tissue to give way between scars. In the previously mentioned thirty-nine cases the uterine scar had disappeared from sight in nine cases and was normal (no thinner than the rest of the uterus) in twenty-five cases.

Technic of Operation.—The various analyses which have been undertaken in this paper hitherto have emphasized the desirability of examination before labor. In emergency and ambulance cases, we are, however, face to face with conditions instead of theories.

Where we have been able we have waited for the mother to go into labor before commencing the operation in order that some dilatation of the os might occur, thereby facilitating drainage in the puerperium and determining whether or not the head would engage.

The technic consists after the usual preparations as for any laparotomy, in opening the abdomen by an incision about 12 cm. in length slightly to the right of the median line and extending *downwards to the umbilicus from above*. One or two gauze pads wet in warm salt solution are placed above the fundus which will be found directly under the wound, in order to hold back the omentum and intestines. The frequent twisting of the uterus upon its long axis, especially to the right makes it desirable to rotate to the left so that its anterior wall looks directly forward thus bringing the uterine incision in the middle of the organ. The assistant so regulates his pressure on the sides of the abdominal wall that the uterus is held well up to the abdominal opening until it is emptied of its contents—child, placenta and membranes; and until several of the deep sutures are in place and tied. No effort to control hemorrhage has been made as it has been found to be unneces-

sary. The uterus is carefully opened with a scalpel in order to keep the membranes intact, and the hand should be swiftly swept around between them and the uterine wall so that later when the uterus has contracted there will be no delay in removing the adherent membranes. Neglect of this precaution may mean that the membranes must be removed piecemeal. The anterior thigh of the child is grasped and a breech extraction is done whenever possible turning the child after delivery of the shoulders so that it faces towards the mother's face. An assistant stands ready to clamp and cut the cord and the child is taken away to another room to have respiration established. The placenta and membranes are next extracted and we then hook two fingers of the left hand into the uterus at the angle of the wound and with the right hand pass the deep interrupted sutures of No. 2 chromic catgut through the cut edges of the uterine wall down to the endometrium and well out on the opposite side in reversed order.

These sutures are readily buried by a continuous suture of No. 2 plain gut placed so as to pass through the peritoneum, well into the muscle and fold it over the first layer of stitches much in the manner of a Lembert suture, bringing the peritoneum into apposition.

The abdominal pads are removed: the wound is closed in layers as in an ordinary celiotomy. The after care in uncomplicated cases is that of any laparotomy together with that of any post-partum case.

In all of this it is understood that the uterus is not delivered from the abdominal cavity. The lessened mortality from the operation in its new technic owes much to the fact that shock is decreased under these circumstances and that there is less danger of infection.

Summary.—To sum up rapidly the results of this analysis, it seems to be evident that:

1. Cesarean section is the preferred method of delivery under conditions where a viable child may not be delivered by normal ways and provided the mother can take the surgical risk.
2. The mortality statistics show that early examination, freedom from previous manipulation and from other efforts to deliver are important points for the best results.
3. However the fact that the patient has been some time in labor need not preclude the efficiency of the operation.
4. Conditions should be satisfactory for this operation as it requires a particular technic with skilled assistants for the best results.
5. The most important points of the technic are:
 - a—High incision.
 - b—Non-delivery of the uterus from the abdominal cavity.
 - c—The absence of any method of constriction to prevent bleeding. This is not necessary.

d—The method of suture as described above.

6. Given such conditions as are demanded for the technic of the operation, and with the elimination of those patients who would die under any method of treatment, we may hope for a mortality not to exceed two per cent.

Discussion.

DR. GEORGE W. KOSMAK, New York City: I think the mortality for both the mother and child appears rather large. We must remember, however, that these statistics are taken from a hospital service that is compelled to receive cases in all stages of neglected labor. I think these statistics should teach the profession at large that Cesarean section is not an operation of final resort, but that it should be the operation of election. This brings us to the point that the profession ought to be made thoroughly acquainted with the dangers that are attached to labor when the pelvis is contracted, where the contraction does not only involve the brim but also the outlet. It means that all patients who are pregnant should come under the care of a physician, not a week or two before term, but two or three months before term, and this should apply particularly to primiparæ who have not had the advantage of a test of labor. If the laity could be made to realize that most of the dangers attending childbirth can be prevented, it is possible and it is probable that we would show a much better percentage as regard morbidity and mortality in Cesarean section than Dr. McPherson was compelled to acknowledge in his paper.

Ordinarily a patient goes to a physician and she is probably not examined. He is satisfied to look at the urine, to test it for albumin and casts, and pass her along until the end of term, because, in the first place, a patient may object to an examination, and, in the second place, the physician realizes that 90 per cent. or even a greater percentage of women go through labor without any complications. A few of these women, particularly the primiparæ, can be examined at the seventh month, and the pelvic diameters carefully mapped out, and if the pelvis is found to be normal, subsequent examination limited to determining the size of the child, we would have fewer complications at the end of term. These pelvic contractions are not limited to the antero-posterior diameter. Dr. McPherson has called our attention to the left lateral contractions. We also have contractions of the outlet, and many of these women succeed in pushing the foetal head down into the pelvis. The head stops at the outlet and it cannot be borne unless severe laceration results. Lacerations are serious matters. They affect the future health of the mother. If we could determine that trouble is going to ensue, and if we realized the importance of an elective Cesarean section done at the proper time, the future health of the woman would be conserved and future generations of children more properly cared for.

DR. ABRAHAM J. RONGY, New York City: I fully agree with Mr. McPherson that when we can do an elective Cesarean section, it is the only operation we ought to perform. Nearly forty per cent. of the women in Greater New York are confined by midwives, and we have to face conditions as we meet them. We cannot examine these women beforehand. When a woman has been in labor for forty-eight hours under the care of a midwife or the ordinary practitioner, who has no relation with regard to the head and pelvis, who has attempted delivery by forceps without any results, he should not go any further, but should stop and send the woman to a hospital. What should be done with the woman? Cesarean section done in these cases endangers the life of the woman. I think the operation is one of choice in cases that have been neglected and mistreated either by the midwife or attending physician. But Cesarean section ought not to be performed because of the danger of sepsis. The danger of the woman surviving an abdominal operation is against her. In these cases, when neglected, pubic section ought to be done. The danger of the operation is not great to the woman. Recovery from a pubic section is fairly good, and in the five cases I have performed this operation in the last three or four months, there has been no trouble. Those women can walk along as though nothing had been done to them. I am fully aware that pubiotomy has been said to endanger the woman's gait, but so far as my experience goes, I have not seen it.

DR. MCPHERSON (closing the discussion): In regard to what Dr. Kosmak says about the mortality statistics, he is correct. I reported certain statistics of 9.5 per cent., which is too high. There is no doubt about that, but there is a slight explanation due. In the first place, in the computation is included all Cesarean sections done in the hospital service. It is not a selected list in any way, but comprises all the Cesarean sections we have done. The first Cesarean sections that were performed twenty years ago were not made with the technic we use today. We did not know what we know now, and did not have as good a choice of patients. If I had taken the last one hundred cases, I think you would find the mortality would be much lower, so that it is a fair presentation of the subject in a large number of cases. My personal mortality statistics, I am glad to say, in the series of thirty-five cases is *nil*. I have not lost a mother, and only one child, and there is no reason why with a certain amount of luck and reasonable choice as to operation, others may not have the same results.

With reference to what Dr. Rongy has said regarding Cesarean section in delayed cases in comparison with pubiotomy, I believe there is no question in the mind of any thinking man who is doing much of this work that Cesarean section in delayed cases is not a favorable opera-

tion. I think there is undoubtedly a class of cases where pubiotomy is a justifiable operation, but it is an operation which I do not like, and the only thing I will say in this connection is this: what are you going to do where you have a pelvis which is so small that it has only a seven and a half true conjugate, the low limit for a pubiotomy? You have to choose between doing a Cesarean section and a craniotomy on the living child. I prefer in these cases craniotomy on the living child, unless the parents prefer to take the chance, and then it is a simple matter to decide. A fatal result to the mother in these cases where they have been in labor so long is almost an absolutely certain thing. Some may be saved by Cesarean section, but the majority will surely die.

THE DELIVERY OF THE PLACENTA AND MEMBRANES.*

By LOUIS FAUST, M.D.,
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THE writer almost feels that he should apologize to this Society for presenting a subject which is so common, and generally so well understood; but as we all work out our difficult problems along different lines, it is his hope that the interchange of experiences, in the discussion that should follow, will be profitable to us all.

The scope of this paper will not be confined to the third stage of labor, but will cover the period from the moment when the ovum is received by the uterus to the end of gestation, which, though it may seem arbitrary, and based on no authority, yet will be divided into three periods.

First: From conception to the third month.

Second: From the third month to the fifth month.

Third: From the fifth month to the end of gestation.

Let us refresh our memories by reviewing briefly the development of the ovum. The presence of the impregnated ovum in the fallopian tubes acts as a powerful stimulant to the uterine mucosa, causing it to thicken and form the decidua, which ultimately becomes the decidua vera. The purpose of this thickening is to form a nidus for the ovum which is about to enter the uterus. When it is received it becomes implanted, usually, in the fundal zone, and the point at which it attaches itself is called the decidua serotina or basilaris. Soon after its reception and attachment the decidual membrane proliferates and envelops the whole ovum, forming the decidua reflexa, or capsularis. As the ovum develops, this latter membrane is gradually crowded into all portions of the uterine cavity, finally coalescing with the decidua vera, forming one membrane. During the development of the ovum, small sprouts are projected from its outer wall form-

ing the primitive chorion, but this soon disappears and is replaced by the true chorion. The whole surface of the chorion now becomes covered with sprouting prominences which subdivide, forming the villi. These enter into direct connection with the maternal tissue; cells are produced in large quantities on the tips of the villi and form columns which perforate the epithelium of the uterus, where they swell at the ends, developing little buttons in the tissue of the decidua. At first the villi penetrate both the decidua serotina and the decidua reflexa, but those penetrating the latter disappear, leaving only those in contact with the decidua serotina, which is called the shaggy chorion, or chorion frondosum, which is the beginning of the placenta. The attachments, which, as we have seen, have up to this time been very intimate between the villi and the uterus, become softened as pregnancy advances; and at the same time small lakes of blood are formed, into which the maternal pure blood flows. In these sinuses the tufts of villi float. Their function is familiar to us. These attachments become so friable, that at the birth they are, as a rule, easily detached by the uterine contractions, after delivery of the fetus has taken place.

The amnion, though one of the membranes which comes into play at delivery, has no special interest for us, as it has no attachment to the uterus. We will, therefore, not touch upon its development.

FIRST PERIOD.

Let us now consider this first period; that from the reception of the ovum until the third month, when the placenta first appears as a distinct organ.

There are three methods of treating these cases, which Edgar calls "Early Abortions."

First: The expectant plan, consisting of tamponade, vaginal irrigation and ergot.

Second: Active treatment, or the immediate emptying of the uterus with the curette.

Third: A combination of the first and second methods.

In the early years of the writer's practice, the first method was the only one followed. Emptying the uterus with the finger was not even done. In treating a case of this character, pledgets of cotton were tied in the form of a "kite-tail," with any old cord found in the house of the patient; the vagina was packed with this, and the tampon allowed to remain for twenty-four hours. True, in many cases, the product of conception would be cast off sufficiently to stop hemorrhage and active sepsis, but recovery was slow, as the decidua was left behind to slough off, and the patient would lose a slight amount of blood continuously for several weeks. In some cases, the patient became septic, and a death now and then was the result.

After a few years, the importance of emptying

* Read before the Medical Society of the County of Schenectady, October 10, 1911.

the uterus, when possible, was recognized, as a safe procedure, and accordingly the uterus was emptied with the finger, and the physician, in order to reach the inner surface of the fundus did not hesitate to introduce the whole hand into the vagina. Occasionally the curette was used, but without asepsis, the result was disastrous. With the advent of antiseptics and asepsis came the active treatment of early abortions, so that many advocate the use of the curette in all cases immediately. The expectant plan of treatment still has some followers, but they are growing fewer.

The choice between the other two methods depends entirely upon the conditions we have to meet. If we have active hemorrhage, without dilation of the cervix, the vaginal tampon, properly placed, as nearly clean as it is possible for it to be, everything having been sterilized, is indicated. This will stop the hemorrhage and will allow time for the uterus to dilate, and many times when the tampon is removed the bulk of the ovum and secundines will be found in the vagina: but the decidua vera is still there, or at least part of it, and here is where writers of to-day differ in treatment. Some advise curettage; others are content to let the case alone.

In cases in which hemorrhage is active, and the os dilated, an immediate emptying of the uterus with the finger or as much as can be reached, will stop the hemorrhage and will give time for preparation for curettage, if it is to be done.

A patient who gives a history of occasional flowing spells; who develops a chill, with or without uterine pains, but with a foul-smelling discharge from the vagina, should have the uterus emptied as soon as possible.

The treatment, if properly carried out, in the first two classes of cases, is decidedly active; that is, every woman who has an early abortion should be curetted, because the decidua vera cannot be cast off by the uterus at this stage of pregnancy, and to leave it leaves a possibility of mischief.

In the septic cases greater delicacy and caution are necessary when using the curette, as the uterus is more friable and liable to be perforated.

CURETTAGE.

This operation, as we are called upon to perform it, in a majority of cases, at the homes of the patient, is a different proposition from its performance in a hospital operating-room. With no assistant but the anesthetist, the whole responsibility of guarding against sepsis devolves upon the operator. Gowns, towels, gauze-sponges, gauze, fountain-syringe and instruments should be at hand, all properly sterilized. Cold sterile water is best obtained by instructing the family to boil a tea-kettle of water and set it aside with strict orders that it is not to be touched by anyone. With all these requirements at hand, the

operation is a simple affair and need not be described here. The indications for it, and when to operate, however, do concern us.

When the os is dilated and parts of the ovum have or have not escaped, the uterus can be emptied without an anæsthetic, unless the patient be hypersensitive. Should the patient be flowing very freely and should the examination reveal no dilatation, one of two courses can be pursued, namely, tampon and wait until the uterine contractions, pressing on the tampon, dilate the uterus; or, if bleeding has been very profuse, and it is deemed necessary to hasten matters, dilate with steel dilator and empty with curette.

As already stated, septic cases, or those in which the discharge is foul-smelling, with or without chills or temperature, should be treated actively without delay.

SECOND PERIOD.

The shading from the first into the second period is so indefinite, that it becomes largely a matter of judgment with the physician as to how to treat the case; that is, if near the third month the size of the ovum and secundines should be unusually large, from the fact that at this period the placenta becomes a distinct organ, it is wise, before using the curette, to use some form of placental forceps to empty the uterus of the bulk of its contents, finishing with the curette. As we leave the third month and approach the fifth, the attachments of the placenta and decidua become less intimate with the uterine walls: *i. e.*, they become softer, and are more readily peeled off entire; so that while these cases earlier in the period may, and often do, need curettage, later, the uterus can be completely emptied with placental forceps, and of these there is none better than the old sponge-holder, which is a long slender, yet strong instrument with fenestra at the uterine end.

Again the shading between this period and the next becomes a matter of judgment with the physician, because the nearer we approach the fifth month the oftener we have cases in which we can be sure that the uterus is entirely empty. It is, however, equally true, that there are cases even far into the fifth month and close to the sixth, where it is necessary to use the placental forceps to empty the uterus.

This brings us to the last period, from the fifth month to term, and this properly is to be considered under the heading of the "Third Stage of Labor."

As early as 1789, Baudelaque had described two ways in which the placenta could be extruded from the uterus: "This separation from the uterine wall could begin either at the center of the placenta or at a point in its circumference. In the first case, the middle of the placenta being pushed forward by an effusion of blood beneath it, the organ becomes inverted upon itself in such a manner that it presents only its foetal sur-

face, which is covered by membranes and vessels: but when the placenta becomes detached below, particularly if near the internal os, the mechanism is entirely different, for the afterbirth becomes rolled upon itself in the form of a cylinder, whose long axis corresponds to that of the uterus, in such a manner that it presents its detached maternal surface to the examining finger, and its exit is always preceded by a small amount of fluid blood."

These two views seemed to have aroused no interest in the profession until Schultze, in 1865, advanced the opinion that the placenta was generally expelled by the first-method mentioned by Baudelaque. However, in 1871, Matthew Duncan declared that the second was the more frequent mechanism, and so opinions have swayed from one to the other, until now it is accepted that in varying frequency, according to the views of the observer, the placenta is expelled now by one method, now by the other.

Two facts are common knowledge of us all: these are, that when the placenta is expelled without any hemorrhage between the time of birth of the child and its expulsion, followed by a more or less abundant gush of blood, we know that the separation began at the center, forming a haematoma between it and the uterus, which hastened the separation: and if hemorrhage from a slight oozing to quite a sharp flow begins soon after the birth of the child, we know that separation began at the margin, and presumably near the os.

CLINICALLY.

After the child is born and the cord tied, the most important time of the birth has arrived. The tension on the family is relieved, but the physician knows that upon the safe delivery of the placenta and membranes depends much of the future progress of the case to full recovery. The hand of the operator should be placed on the abdomen of the patient and through its walls he should observe the condition of the uterus. For a relatively short period it may be fairly firm or flaccid, if firm there is no need of manipulation as there is then no danger of occult hemorrhage, but if flabby, gentle friction, in a circular direction, should be maintained. And right here let it be said, that in this class of cases a full dose of F. E. ergot should be given immediately. If the uterus remains firm and contractions follow, it will soon be observed that retraction has taken place, which means that the placenta has become detached from the uterine walls and can safely be delivered.

Until 1853, the method of delivery was by traction on the cord, or by introducing the hand into the uterine cavity to extract the placenta. In that year Credé, in *Klinische Vortrage uber Geburtshilfe*, described his method of expressing the placenta. I quote his own words:

"The simplest and most natural method of artificially removing the placenta consists in incit-

ing and invigorating the sluggish activity of uterine contraction. A single energetic contraction of the uterus brings the entire process to a rapid end. I have succeeded in innumerable cases and without exception, in producing an artificial and powerful contraction of the uterus in from fifteen to thirty minutes after the birth of the child, and when uterine action is ever so sluggish by rubbing the fundus and corpus uteri through the abdominal wall, gently at first, but gradually with the expenditure of more force. As soon as the contraction has reached its maximum, I grasp the uterus entire in such a way that the fundus lies in my hand, while the fingers and thumb make gentle pressure upon the body of the organ. I invariably feel the placenta slipping from beneath my fingers, as a rule with such violence that it appears at the external genitals, or at least reaches the lowest part of the vagina. The patient experiences no discomfort from the manipulation beyond an increased sensation of pain, during the uterine contractions, and it becomes unnecessary to introduce the hand into the birth canal, which has already become extremely sensitive as a result of the expulsion of the child. The uterus remains permanently contracted, hemorrhage is less to be feared, and an inversion of the uterus can never occur as a result of a regular contraction, although this accident is always possible with the usually adopted method of removing the placenta."

Credé's method was a great step in advance, and saved the lives of many who had previously succumbed to hemorrhage and sepsis.

To return to the delivery. In fairly firm uteri, the delivery can generally be accomplished with a slight modification, that is, the pressure after the placenta has left the uterus should be upward and backward so as to bring it into the axis of the pelvic curve and to overcome the tendency of the uterus to antifix.

As the placenta is expelled from the vagina care should be taken not to let it drop out, or if quickly expelled to allow it to fall on the pad; it should be received by the hand of the accoucheur in such a manner as not to bring sudden traction on the membranes. It should be carefully lifted from the vagina in the axis of the inferior strait, making gentle traction, and if there be a tendency of the membranes to tear, the hand which has been on the fundus should be called into play to slowly coax them to detach themselves from the uterine walls. If they have not been torn the last portion will roll out of the vagina in a fairly good mass at the last. If it remains stringy, or the operator can feel a tearing sensation, it is quite certain that there is a portion still in the uterus; and concerning the treatment at this point there is a large diversity of opinion. Many writers advise removing only the shreds which can be seen from the outside of the vulva, while others advise a rescrubbing of the hands and introducing them into the uter-

ine cavity to remove all shreds. The writer has always adopted the latter method, as it does not seem proper to allow these shreds to remain, there to decay and become a source of infection: and, too, should an infection occur with a subsequent expulsion of a mass of membranes, he would be subjected to severe criticism by the family.

The placenta should now be examined to see if any portion of it remains in the uterus. If any should remain its immediate removal is important.

A flabby uterus may be looked for in cases of protracted labor, or when the pains have been weak or at long intervals, and also we will find this same condition in very precipitate labors. If there is much hemorrhage and it threatens to become alarming, a hasty delivery of the placenta is imperative, as some of the sinuses are broken, the uterus cannot contract sufficiently to close the vessels while the placenta is still undelivered. After delivery many times the uterus will contract immediately: if not, the usual methods for controlling *post partum* hemorrhage should be resorted to.

If there is no hemorrhage and no evidence of a large haematoma forming, there is no haste. With the hand at the fundus, the physician should wait until the uterus reacts, which usually takes place in at least thirty minutes. Here is where ergot, mentioned previously, saves a great deal of valuable time and anxiety to the physician, as well as guarding the safety of the patient from *post partum* hemorrhage. The possibility of ergot's doing harm, in producing hour-glass contraction, is a myth. One observer in this country gathered 30,000 cases in which ergot was given as a routine immediately after the birth of the child without any of the bad results which have been handed down from one obstetric writer to another.

There are two more conditions that claim our attention now, a retained placenta and an adherent placenta.

If the placenta has become detached from the uterus, which can be determined by the size of the latter and from the fact that it has risen in the abdominal cavity, and it is firmly contracted, the placenta should be immediately removed.

Here the writer has retained the old method, which is spoken against by all modern authorities, of traction on the cord. If the placenta can be delivered by any method without introducing the fingers or the hand into the vagina or uterus, it should be done, so as to guard against the possibility of sepsis.

With the placenta detached, there can be no possibility of harm in making traction on the cord, as it will facilitate the delivery, stimulate uterine contractions, and accomplish what we are trying to do without introducing the hand into the genitalia. This method will succeed in a majority of cases of retained placenta. At

the same time that traction is being made on the cord, Credé's method should be employed. If these do not succeed in obtaining the desired result, it may be possible to deliver by introducing the two fore fingers into the vagina and reaching the presenting portion of the placenta by hooking the fingers into it, and gradually coaxing it down. If this does not succeed, then it becomes necessary to introduce the whole hand, grasping the placenta, and holding it there for a short time to allow the uterus to contract upon it, and then gently removing it. Before the operator removes his hand, he should sweep all over the inner surface of the uterine wall, and make sure that he has the placenta and membranes entire.

ADHERENT PLACENTA.

An adherent placenta is caused either by syphilis or by endometritis. It may also be produced by villi dipping too deep into the uterine wall.

If, after a persistent effort by Crede's method, to deliver the placenta it still remains undetached, and by a "persistent effort" I mean one lasting at least thirty minutes, we may be well sure that we have an adherent placenta, and should prepare ourselves and the patient for its delivery. This can only be accomplished by the introduction of the whole hand into the uterine cavity. After the hand is introduced we should seek the edge of the placenta and follow it to the fundus, peeling it off from above downward, sweeping the hand over all portions of the uterine wall to make sure that we have the placenta entire. It should then be removed in the same way that a retained placenta is removed.

Placental forceps are of no use in conditions of this sort, nor does the writer think it wise to use the curette, as he can make more certain that the uterus is entirely empty by touch than by any instrument.

RENAL HEMATURIA.*

By HENRY L. ELSNER, M.D.,
SYRACUSE.

IN no field of medicine have the newer methods made the localization of lesions more positive than in the genito-urinary tract. I refer more particularly to cystoscopy and the catheterization of the ureters. For many years, the majority of hematurias will, however, be diagnosed by the average clinician without the aid of these refinements of diagnosis, and while these methods do make possible the localization of the lesion to one or both kidneys in renal hematuria, they still fail in many cases to make positive the true pathologic condition.

It is fortunate that visible blood in the urine—the symptom hematuria—rarely fails to alarm the patient and brings him to the physician with-

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out delay. The interpretation of its cause, however, is often exceedingly difficult because the bleeding is often without subjective symptoms and without physical signs.

It is well to allow the dictum to remain in our text-books that the blood in renal hematuria is intimately mixed with the urine. This is true in the majority of cases, but there are bleedings from other portions of the genito-urinary tract and very often from the bladder, in which the blood is as thoroughly mixed with the urine and its color and general features are not unlike the bloody urine of renal origin.

The varying appearance of the urine from time to time often becomes misleading, while convincing microscopic elements may be absent during long periods. The condition of the patient may show but slight change and symptoms may be referred to organs distant from the seat of the disease.

Posner in his classic work makes the statement that the positive microscopic picture of pyuria often fails to establish with certainty the source of the pus. This statement is certainly justified with equal positiveness of the microscopic revelations in cases of renal hematuria.

The presence of blood in the urine of patients suffering from kidney lesions is more frequent than has ever before been surmised. It may be a continuous symptom or may recur at irregular periods. In some cases the intervals have been so long that patient and physician have been led to believe that the suspected serious or organic disturbance had been overcome; indeed the incident had almost faded from memory.

This sense of security after kidney bleeding, even without associated symptoms sufficient to make its cause positive is never justified, for it may be assumed that it must always be considered an important symptom, making it necessary for the physician to watch during months and years for the final appearance of continuous symptoms and positive evidence of organic change which follows in the majority of cases.

Renal hematuria is not likely to be profuse, save as it occasionally follows trauma or is associated with calculous disease, tumors of the kidneys or tuberculosis. With the latter complication, it is exceedingly rare to find large hemorrhages. In the majority of tuberculous nephritides, there is an acid urine which presents positive features; there is constant pyuria, blood with abundant debris, a telltale clinical history, the presence of tubercle bacilli which soon clinch the diagnosis. Renal hematuria per se does not as a rule reduce the quantity of urine secreted.

When the symptoms of the various nephritides are systematically studied, we are surprised by the frequency with which, in these, blood is found in the urine. Modern surgical methods of treatment which lay bare the kidney *intra vitam* have made it possible to gain information concerning

these organs; this, with our pathologic studies have established the fact that many bloody urines which were formerly misinterpreted and which for want of exact knowledge were known to the early writers as "essential hematuria," we now know are due to organic change of inflammatory or vascular origin, and the term "essential" or "idiopathic hematuria" is no more justified than is "idiopathic peritonitis."

I believe this subject is exceedingly important and feel justified in bringing it to your attention with all possible emphasis.

The majority of bloody urines associated with nephritis are not deep-colored. The quantity of blood is small and does not always justify the more dignified term hematuria.

Limited or insignificant renal change, often unrecognized by careful search, may give rise to profuse and almost continuous hematuria, while in other cases, equal or even more extensive, positive lesions; indeed disorganization of kidney substance may progress without visible blood. Under the microscope, there may be only an occasional blood corpuscle.

In some of these cases with marked change, there may be but a single profuse hemorrhage, and no recurrence during the subsequent course of the disease.

Our studies have demonstrated the unexpected frequency of chronic tubal nephritis as a cause of blood in the urine. For the purpose of furnishing accurate data for this paper, the writer has tabulated the clinical histories of 4,832 consecutively examined cases of internal disease. The conclusions are as accurate as they can be made by a thorough system of cross-indexing and conscientious examination of the patients including urine analysis. He found 229 cases of chronic tubal nephritis, 14 cases of acute tubal nephritis; 77 cases of chronic interstitial nephritis; 8 cases of secondary congested kidney and 7 cases of tuberculous nephritis, in which no tuberculosis was demonstrable in other organs. Of the 229 cases of tubal nephritis blood was found in the urine of 33 per cent. The 14 cases of acute nephritis were no exception to the rule, for in all the urine contained blood. Of the 77 cases of chronic interstitial nephritis 14 per cent. were found with blood in the urine. The urine of the 8 cases of secondary congested kidney all contained blood. Of the total, 328 cases, there were only 12 in which the hematuria became profuse or alarming. In four, there was chronic tubal nephritis, with marked hypertension, arteriosclerosis and aortic disease, with, in one case, a final malignant complication to which I shall again refer. We also found among these cases with profuse bleeding four cases of gouty kidney with unquestioned interstitial change. The remaining four cases showed microscopic elements which justify the diagnosis of chronic tubal nephritis.

Rayer, in 1844, called attention to the fre-

quency of nephritis as a cause of this symptom, Askanazy presents the result of his observations from 1888 to 1903 at his clinic, during which period, he accurately observed 562 cases of chronic nephritis, 35 per cent. of which showed blood in the urine. Of these, 126 showed moderate, 64 abundant red corpuscles. In considering the quantity of blood, it must be remembered that the color of the urine is promptly changed by the addition of a very small quantity.

I shall consider the clinical material which serves as the basis of this paper under the following divisions:

First.—Chronic Tubal Nephritis. Hematuria: a. painful; b. painless.

Second.—Chronic Interstitial Nephritis. Hematuria due to arterio-sclerosis, change in blood pressure and localized degeneration.

Third.—Cases of either chronic tubal nephritis or interstitial nephritis or punctiform change in the substance of the organ or its pelvis, undiscoverable by macroscopic, often by microscopic examination, giving rise to profuse bleeding—cases which were formerly considered "essential hematuria"—These may also be painful or painless.

Fourth.—Cases of renal hematuria with gouty diathesis, in which there may be latent kidney disease without calculosis.

Fifth.—Rare cases of paroxysmal hematuria, in which chilling of the surface provokes bleeding.

Sixth.—Renal infarct causing hematuria, associated septic fever with malignant endocarditis.

Seventh.—Cases of acute or chronic primary infectious pyelitis, non-calculous, with moderate hematuria.

The acute forms of nephritis with hematuria are excluded from this consideration, because they are easily recognized, are rich in cellular elements and casts, and present positive clinical histories. I shall not consider hematuria due to the constitutional disturbances, including leukemia, pseudo-leukemia, pernicious anemia, scorbutus, purpura, and hæmophilia, infectious diseases, calculosis, tuberculoësis or renal growths.

First.—Chronic Tubal Nephritis. Hematuria: a. painless; b. painful.

For many reasons, a clear conception of chronic tubal nephritis demands more definite conclusions than were formulated before our recent association of clinical manifestations with pathologic study. Confusion among writers had clouded the horizon.

For the purpose of understanding this form of renal hematuria, it may be assumed that there is a long continued toxemia, with final diffuse inflammatory changes in the parenchyma of the kidney which do not by any means limit themselves to one kidney, but involve both,

though the process may be more advanced in one than in the other kidney. Secondary changes may also be more manifest, in one organ than in the other, but both are positively invaded. *Chronic tubal nephritis must, therefore, be considered a progressive and disseminated process, of constitutional origin invading both kidneys and associated with changes in distant organs, more particularly the cardio-vascular system.* Frequent irrational surgical interference has proved the urgent need of keeping this definition before our mental vision.

Nephritides have been frequently overlooked because the dictum that casts or albuminuria may be absent during long periods was disregarded; a condition to which Bright himself subscribed and later Senator, Israel and many others who have had large experiences in this field.

It is true that but one kidney may bleed though both organs may be equally invaded or the two organs may alternate in supplying blood to the urine.

(a) *Painless Hematuria.*—The majority of hematuria due to tubal nephritis are painless. However, it must not be forgotten that diseased kidneys may provoke painless hematuria at one time and painful bleeding at another. These forms of painless hematuria may continue, as such during weeks or months and may be finally associated with painful symptoms referable to the bladder with or without rectal tenesmus. In these cases, there has either been an associated cystitis due to long continued irritation or clotting of blood in the bladder, stone or added malignancy.

We had a patient 63 years of age under observation who commenced with profuse hematuria in August, 1906. Blood pressure when first seen was 285 mm. HG. There was chronic arterio-sclerosis, aortic roughening and a mixed form of nephritis. Hematuria was profuse. During many months, there was painless hematuria. On April 22, 1907, a perfect cast of the renal pelvis was passed per urethram *without pain*. The mass was well organized. The presence of the clot in the vessel as it unfolded itself was at once recognized as coming from the kidney by the patient from its resemblance to the kidney pelvis. The impress of the calices was distinct. The mold in which the clot was formed could not be mistaken. Almost a year after the beginning of hematuria, dysuria became severe; the bladder became continually tense, in May, 1907, vesical and rectal tenesmus were unbearable. Cancer of the bladder was finally associated with the conditions originally mentioned.

The association of cancer of the bladder in a subject with chronic hypertension, arterio-sclerosis, chronic mixed nephritis (probably secondary contraction) with positive evidence of renal hemorrhage and cast formation though rare ought not to be overlooked.

The diagnosis of all forms of hematuria due to chronic tubal nephritis, particularly with latency during long periods, may remain unsuspected during many weeks. Even the segregation of urine from the bleeding kidney may prove misleading and may divert the physician's attention from the presence of grave constitutional disorder and may lead to surgical interference which finally proves futile, because the opposite kidney is ultimately found to be diseased. Associated cardio-vascular changes have often been overlooked. In many of these cases, however, repeated thorough urine analysis, which should always include precipitation by the centrifuge, will lead to conclusions that are safe and dependable. It must be remembered that albuminuria and cast formation are much more extensive when caused by organic disease of the kidney than by transitory abnormalities. Further we agree with Meltzer who makes the statement that, in making the diagnosis of nephritis, reliance upon the presence of albumin and casts may, indeed, be fallacious, but only when employing too fine methods and relying upon single examination. In the cases which we have under consideration the continued presence of albumin with casts, with transitory or continued hematuria, particularly after the patient has rested and during the early morning hours points to Bright's disease. It is the entire chain which we need, not the separate links.

When subjective symptoms and the microscope fail, and the bladder is suspected to be the source of bleeding, a condition which often presents itself in practice, if cystoscopy is impossible, the manœuvre of Sir Henry Thompson of washing out the bladder, retaining the catheter and irrigating cautiously to note the result, will often lead to a positive conclusion. The water will be promptly tinged by vesical, later and more slowly by renal hemorrhage.

The presence of blood casts and blood corpuscles, the latter markedly changed in color and general appearance, with or without granular or hyaline casts must lead to the suspicion of renal hematuria. While the bleeding is as a rule from one kidney, there are cases in which both organs bleed at the same time. A number of years ago, I saw a case in a very old man: both ureters were blocked by dense blood-clots, finally there was anuria and death followed from uremia.

It is surprising to note how the urine in some of these cases of chronic nephritis, with bleeding may mislead us by the complete disappearance of albumin, casts and blood during long periods, and hematuria may never recur, while continuous symptoms of nephritis may be slow to follow.

In old subjects, it is not at all uncommon to find repeated hemorrhages from other organs associated or alternating with hematuria. This is particularly true of cases associated with arteriosclerosis. One of our leading jurists had with these conditions repeated hemorrhages; at one

time from the urethra, another from the kidney; death was finally due to cerebral hemorrhage.

Occasionally with diabetics, we have found hematuria where nephritis had been unsuspected. Askanazy reports such a case in which the post mortem showed hypertrophy and dilatation of the left ventricle, overlooked during life, with parenchymatous nephritis—the latter ran its course without a single clinical manifestation.

(b) *Painful Hematuria.*—These cases are often difficult to differentiate, but are not infrequent. They are characterized by symptoms of renal colic—often leading to the suspicion of stone in the kidney. The pain usually locates the seat of the hemorrhage. The pains may be intermittent; there may be long periods during which the patient returns to apparent health, while the recurrences strengthen the wrong conclusion that there is a foreign body either in the pelvis or in the substance of the kidney. Unless great caution is used surgical interference, futile and irrational, leads to death.

We have had some disagreeable experiences in the treatment and diagnosis of these cases. In one case, depending upon the clinical history of the patient, who was quite sure that he had passed masses of stone or gravel, the shadow in the skiagram, furnished by one who was an expert in the use of the X-ray seemed convincing. He was positive that we were dealing with multiple stones in the kidney. Surgical interference was recommended and accepted. The hemorrhage in this case was the most persistent and depleting of renal origin that I had ever seen. Under the microscope, there were no renal elements to guide us; no casts, but uneven masses of crystals with characteristic prolongations seemed to strengthen the X-rayist's suspicions. The attacks of pain showed the usual radiation, there was retraction of the testicle and pain at the end of the penis. We entertained no thought of failure in this case. Our disappointment was keen when opening the pelvis of the kidney it was found to be empty. The surgeon stripped the capsule, cut into the substance of the kidney and found all of the macroscopic and microscopic changes of advanced nephritis; the cortical substance was atrophied. The removal of the organ at the second operation, because of persistent hematuria did not save the life of the patient.

There are several further interesting facts in connection with these cases. Occasionally we find colic present without hematuria. The colic may not always limit itself to the same kidney; with the same pathologic changes in both kidneys it is strange that there are cases in which the colic persists in but one kidney. We have met cases in which years have passed after profuse hematuria and renal colic without marked symptoms (one case over 5 years) in which there were at first no ear marks of nephritis, but in which the end was finally preceded by a long period of positive and continuous symptoms. Occa-

sionally after exposure to cold with chronic nephritis, there is renal colic, profuse hematuria, dysuria and tenesmus. These conditions are not to be confounded with paroxysmal hematuria or hematuria, to which I refer in the fifth division of this subject. With these conditions, the previous history, cardiac hypertrophy, the microscopic and chemical appearance of the urine, in spite of the one-sided pain, make the diagnosis easy.

Second.—Chronic Interstitial Nephritis. Hematuria due to arterio-sclerosis, change in blood pressure and localized degeneration.

It has been the writer's experience that hematuria associated with interstitial nephritis is not so profuse as with tubal nephritis. There is, however, a class of cases in which with chronic arterio-sclerosis and marked interstitial change in the kidney substance, profuse hemorrhages occur. Some of these have been aggravated by active exercise and increase of intrarenal blood pressure. Occasionally this has followed straining at stool, long continued constipation and the various forms of intestinal indigestion associated with nephritis or with angina of abdominal origin.

In chronic interstitial nephritis with brittle and diseased arteries, there may be bleeding from various sources, including the mucous membranes of the body. There may be hemorrhages either from the urethra or bladder, or from other distant organs. Hemorrhages from the kidney in these subjects are not infrequent.

In one of my cases, the patient was observed during many years; the original hemorrhage was from the urethra requiring crutch pressure for several days; the second from the nasal mucosa; the third from the kidney. Death followed from cerebral hemorrhage after a fishing trip on a hot summer day.

The first hematuria may occur in conjunction with transitory hemiplegia. Such a case has been reported by Kunsumato. I recall among my older histories of chronic interstitial nephritis some in which the fatal apoplectic attack was long postponed though there were repeated interval hemorrhages from the kidney.

I believe that profuse hemorrhage with chronic interstitial nephritis is more frequently due to changes in the pelvis of the kidney from which the blood proceeds than to any other single cause; that the blood vessels may either rupture here or that there may be a sudden arterial hyperæmia, such as Israel has found during surgical operations upon the kidney, and that as in the brain increased arterial tension and changed blood pressure are important factors in causing the rupture of diseased veins or arteries.

Third.—Cases of either chronic tubal or interstitial nephritis with punctiform and limited change in the substance of the organ or its pelvis, undiscoverable by macroscopic, often by mi-

croscopic examination, giving rise to profuse bleeding—cases which were formerly considered "essential hematuria." These may also be painful or painless.

This class of cases has engaged the attention of clinicians and pathologists during many years. The fact that hematuria, due to slight or undiscoverable causes, may be long continued, painful or painless, is positive but puzzling. An enormous literature has sprung up dealing with these cases. In looking over the literature within my reach, in spite of all that has been written to justify the term "essential hematuria," I find but five cases which are well authenticated, in which there were no pathologic changes at all or these were so scant as to have been considered insufficient to explain the cause or source of the bleeding. These cases are reported by Klemperer, Schede, Caspar, and Schenck.

Klemperer's case was that of a male 22 years of age, who had always been healthy and had no hereditary tendencies. The year before coming under Klemperer's observation, he suffered for three months with bloody urine. This disappeared; after nine months, there was recurrence. The cystoscope revealed blood coming from the left ureter. The urine was normal save for the addition of blood. After hematuria had continued for four months nephrectomy was done; the whole kidney was carefully examined by the best authorities and pronounced absolutely normal. Five years later, the bleeding had not recurred.

Schede's patient was 50 years of age. He suffered from hematuria for several months, with marked anemia. The underlying conditions were unexplainable. After a suprapubic cystotomy, the ureters were catheterized, the source of the hemorrhage discovered and the kidney removed. It proved to be perfectly normal.

Caspar rehearses the history of seven interesting cases of so-called "essential renal hemorrhage," or as he says, "bleeding from healthy kidneys." The consideration of his material strengthens him in the conclusion that the majority of these mysterious cases are due to nephritis though clinical manifestations may be entirely absent. He emphasizes the fact in connection with the study of these cases that nephritides may persist during many months without casts or albumin during periods when there is no hemorrhage. He reports two cases, however, in which the microscope failed to show evidence of nephritis and he is unable to explain the cause or source of the hemorrhage. He makes the statement that, in spite of the closest investigation, the condition of the kidney fails to explain the bleeding.

In the two unexplained cases of Caspar, there were small circumscribed herds of round cells, occasional contraction and thickening of single glomeruli in otherwise healthy kidneys. There were no diffuse changes.

Schenck has reported a case in which he says that the cause of the hemorrhage after the removal of the kidney remained a complete mystery. Microscopic examination of the tissue removed showed it to be perfectly normal; there was no bacteriologic infection. In spite of this fact, it would seem that his conclusions are rational, for he says that it would seem far better to put these cases aside as yet unexplained than to assert that an anatomically sound kidney could cause profuse hematuria.

It seems to the writer that it is not safe to conclude, with positive evidence of bleeding from one or both kidneys, and even limited or apparent insignificant pathologic change, that such organs may not in some way undergo transitory vascular changes or that there may not be intravital limited arterio-sclerosis in young or old subjects or other hidden changes which lead to hematuria.

A number of cases of chronic interstitial nephritis, in which there has been continued hematuria and pain limited to one kidney, have been associated with occasional plaques in which the kidney substance was replaced by eosinophilic cells. Sultan has reported such a case and this unusual find has been thoroughly considered by the author, who has tried to explain the origin of the unusual cell deposit without satisfactory results. These cases emphasize the multitude of anomalous conditions which may lead to renal hematuria.

The hematuria of pregnancy heretofore unexplained has been occasionally found to be due to varices of the kidney, the pelvis mainly, or there may be the same condition of bladder veins (Vogel).

The mere fact that after opening a kidney during life in these reported cases nothing abnormal was found does not prove that the organ in some of its tissues may not be diseased; it would be difficult for the pathologist to assert beyond peradventure that he had gained a full knowledge of the condition of all included elements. When we consider these cases clinically, we forget that the ravages of time are not limited to one organ, we are not to conclude in spite of a feeling of well being that as the hair is tinged with gray and our crystalline lens grows flatter internal and vital organs are not involved *pari passu* in this retrograde process. "All mortal things are subject to decay." We react differently according to our inherent or acquired tendencies. Few, it is certain, live beyond the 50-year period, with absolutely normal kidneys. For all of these reasons let us oppose the use of such terms in medicine as "essential hematuria" for they lead to conclusions in too many cases which work hardship to patients and make medicine less scientific.

Fourth.—Cases of renal hematuria with gouty diathesis in which there may be latent kidney disease without calculosis.

In a number of these cases, the hematuria is the expression of an acute exacerbation of gout. It is in these cases that there have been no preceding evidences of nephritis and the history following the hematuria immediately would hardly lead one to suspect latent disease. Occasionally such hematuria has been either associated with gouty arthritis or an acute gouty indigestion; usually associated with obstinate constipation. If the urine be carefully examined it will be found to contain besides the blood an occasional hyaline cast; its specific gravity is between 1015 and 1020; it is excessively acid and under the microscope shows a number of uric acid crystals with uneven prolongations.

Profuse hematuria associated with the gouty diathesis may be the first of a long train of symptoms which characterize chronic interstitial nephritis. My experience with renal hemorrhage associated with gout has led me to the conclusion that in the majority of cases, if the patient does not die of intercurrent disease, he will show positive evidences of chronic nephritis, during many months before the end.

Fifth.—Rare cases of paroxysmal hematuria, in which chilling of the surface provokes bleeding.

The history of these cases is intensely interesting. I shall never forget the impression which was made by my first of these cases, and shall present an abstract of its history:

A man 43 years of age, who had considered himself perfectly well, marched in a funeral procession through the snow on a very cold day and stood in the cold at the cemetery during the burial. A slight chill was followed by a desire to urinate. The urine was bloody; was voided without pain. It continued bloody during the following 12 to 24 hours. There was no examination of the urine at the time of this hemorrhage. Following this occasion whenever this man was chilled or his feet became cold, he had a slight rigor followed by hematuria. During the summer months for from 10 to 12 years, there was no hematuria. The urine examined at the time of the second hemorrhage gave no clew to the source of bleeding. The urine between attacks was normal until these symptoms had recurred during 12 years. At the end of this time hemorrhage recurred on slight cause. Slight chilling of the surface during cold autumn days was sufficient to provoke the bleeding. After this period, the symptoms of chronic tubal nephritis were continued and the patient died between 16 and 17 years after the first hematuria of uremia, preceded by a long period of renal dropsy.

Sixth.—Renal infarct causing hematuria, associated septic fever, with malignant endocarditis.

In all cases of paroxysmal hematuria, particularly those associated with septic or intermittent fever, in which there is no clear cause for

the bleeding we must remain suspicious of associated malignant endocarditis and renal infarct. During the past 12 years, I have seen three cases of hematuria, in which the bleeding was due to renal infarct and in which there had been no previous suspicion of malignant endocarditis. In one of these cases, hematuria recurred at varying intervals during six months preceding death. The patient, a boy, finally died of cerebral infarct. The post mortem proved the presence of renal infarct which was found sterile, while in the splenic and cerebral infarcts pneumococcus infection was demonstrated. The endocardial vegetations were also found to hold the Fraenkel cocci.

Seventh.—Cases of acute or chronic primary infectious pyelitis, non-calculous, with moderate hematuria.

I refer particularly to the acute cases of primary pelvic infection, in contradistinction to calculous pyelitis and ascending pyelitis often due to gonococcus infection. These cases have a characteristic history, including temperature curve; are most frequently found in women, often during pregnancy and at the menstrual period, in which the renal pelvis is directly infected, usually by the bacillus coli commune, occasionally by other pathogenic bacteria, including the Friedlander and Fraenkel pneumococci. Even para-typhoid bacilli have been found by Lenhartz to cause this form of pyelitis. These cases are usually associated with obstinate constipation. Bladder symptoms are, as a rule, absent. There are, early in the course of the disease all of the symptoms of an acute infection. The infection seems to be direct and not of the ascending type. The temperature is almost pathognomonic; this is high during from 3 to 4 days, then a period of remission with an almost normal temperature for two or four days and final exacerbation. These cycles of fever with periods of remission may continue during a considerable period or in a few cases the course is run in from 8 to 14 days. Some of the cases become chronic; the majority are never diagnosticated. The disease is usually right-sided; the kidney in thin subjects is palpable, found to be slightly enlarged and exquisitely tender. In occasional cases, there are sharp pains which radiate upward and downward, usually along the course of the ureter, which may be associated with increase in the quantity of blood. The bacteriologic and microscopic examinations of the urine give positive data. Blood is found in the majority of cases—moderate hemorrhage tinging the urine light red. Frequent, profuse hematuria is rare. Lenhartz has recently given a classic résumé of our knowledge of this infection.

Finally a few words on the causes of renal colic or painful hematuria, in cases such as have been considered, a subject which has been a

source of fruitful study and frequent controversy. The Germans have been particularly interested in this subject and it seems to me that in determining the cause of the pain, they have often been guilty of one-sided reasoning, for each individual observer has insisted upon a single view to explain the recurring paroxysmal pain in all cases. It appears to the writer that the pain in some cases may be attributed to nature's effort to overcome an obstruction in the ureter or pelvis of the kidney, due to clotted blood, hence a foreign body, or organic narrowing, just as pain is caused in renal calculosis.

Senator believes that in some cases, there are perinephric adhesions which are a source of pain, particularly when associated with acute paroxysmal congestion; such as Israel has recently described.

Angioneurotic œdema with clotting of blood in the kidney, pyelitis associated with chronic nephritis and acute exacerbation, increasing intrarenal pressure, may also serve to explain the pain in occasional cases. Diseased kidneys, however slight the change, show predisposition to acute engorgement. If the clinician will, during the acute period of hemorrhage palpate the kidney, pushing it forward from the loin toward the hand placed on the anterior abdominal wall, he will often find the organ exquisitely tender and in some cases cause radiation of pain down the ureter much like the pain of renal colic.

With regard to the source of the blood, recent experiences corroborate Askanazy, who has established the fact that in one quarter of the cases of hemorrhage in the various forms of nephritis, the pelvis of the kidney furnishes the blood. This not only explains the reason for the pain in some cases, but localizes the source of hemorrhage. Unquestionably increased arterial tension has much to do with causing renal hemorrhage in nephritis.

It remains problematic whether hemorrhage from the kidney alone is ever due to hæmophilia. Our experiences corroborate the conclusions of those who deny the possibility of this occurrence without bleeding from other organs, deep or superficial.

Many cases of renal hemorrhage, whether associated with pain or not, will remain unexplained. However, in reaching conclusions, it will be wise to extend our search beyond the kidneys themselves; to take the urine, heart, blood vessels, blood pressure and the background of the eye into consideration, and wherever possible couple the knowledge which we gain from a thorough consideration of these organs with that which is revealed by the cystoscope, though we are not to be disappointed if occasionally cystoscopy and segregation of the urine fail to supply convincing data.

AN OPTIMISTIC VIEW OF MIGRAINE.*

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IF we can judge from many contributions in current medical literature, the physician generally looks on sick headache, or migraine, as one of the ills that must be endured whether he suffers from it himself or treats it in the persons of his patients. This attitude is partly the result of his under-graduate training, and partly the result of his later experience.

The standard text books all agree that migraine is a neurosis, a sort of sensory epilepsy, a hereditary taint, affecting certain individuals with an unstable nervous equilibrium, in whom certain excitants may from time to time precipitate an attack.

Among these predisposing causes they include almost every abnormality, mental or physical, which can be found in a human being. Among the mental causes are enumerated joy, grief, over-work, worry, bad temper, in fact, any departure from absolute mental placidity. Among the physical causes are said to be lowered conditions of the general health, indigestion, constipation, autotoxemia, lead poisoning, alcoholism, arterio-sclerosis, rheumatism, and gout, especially of the suppressed type. The advised treatment is just about as diverse and possible for the average patient. He is enjoined to lead a quiet life and avoid extremes of all sorts both mental and physical, to pay the closest attention to his diet and digestion, and to take laxatives, digestants and intestinal antiseptics. If he is gouty the treatment of his migraine is along the lines of the latest treatment of gout, while if his tension is high a long course of the iodides or nitroglycerin is suggested. For the underlying nervous instability he is advised to rely on the bromides, while a long course of *Cannabis Indica* is said to be especially effective. The attacks themselves are said to be occasionally aborted by a brisk cathartic, an emetic, gastric lavage, or a hypodermic of morphine. When well established they must be endured with such help as acetanilid or phenacetin afford, while if severe the patient must often take to his bed for several days and patiently wait the subsidence of the attack.

From the very nature of things any systemic treatment must cover months and possibly years of the most careful attention to health and the steady use of various drugs, but if the final result were commensurate it would in many cases be well worth the while. The conservative Osler voices the common opinion when he naively concludes, "it must be confessed that in the majority of cases the headaches recur in spite of all we can do." It is small wonder then that the physician who is himself a sufferer, and

it is curious how many writers on the subject have been, finally becomes a hopeless sceptic, while his patients learn to endure the attacks as best they may, often without professional advice at all.

These same text books always record that occasional patients have had their attacks cease spontaneously after the removal of some source of peripheral irritation such as adenoids, a nasal growth, or the correction of some refractive error, and they therefore advise that all possible sources of such irritation be investigated as matters of routine. The neurologists, however, are almost a unit in the opinion that they have seen very few patients who were benefitted in any such way.

The ophthalmologists seem to disagree among themselves, a few, like Gould, taking the radical ground that, practically, all cases of migraine are due to astigmatism, while many others equally well known, take the extremely conservative view that there is no connection between the two. Gould even goes so far as to say by implication that he has yet to see the case he could not cure with glasses.

The writer must confess that he has seen a great many cases that he has failed to "cure," but, on the other hand, he is sure that the great majority of his migraine patients have been materially benefitted by the attention paid to their eyes. Many of them have no attacks at all, while others have them at very infrequent intervals and with greatly diminished severity.

One is perhaps seldom entitled to speak of the absolute "cure" of migraine. Every migraine patient has an underlying nerve instability without which no amount of excitation could produce an attack, and a "cure" could only be claimed in case this underlying condition was removed. This instability may be so great that even over-use of perfectly normal eyes is disastrous, or on the other hand, the irritability may be slight, while the exciting eye strain is relatively large. In the first case, we should not expect to obtain any benefit without almost stopping the use of the eyes entirely, while in the other the patient would cease to have trouble as soon as we enable him to use his eyes economically. The majority of cases, perhaps, fall between these extremes. We often remove the exciting cause and the attacks cease, but the underlying instability is still present, perhaps modified to some extent but still capable of reacting to a sufficient irritation. There are doubtless many cases, in which the explosion results regularly from some other source of irritation, for instance the nasopharynx, and naturally such are not benefitted by any conceivable treatment of the eyes.

The typical attack begins with an aura of some sort, followed by sensory eye disturbances, headache, nausea, and vomiting, and finally sleep, which precedes recovery. But not one of these is pathognomonic and there are many cases which are extremely atypical. The aura, for instance,

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is often wanting. It may consist of a feeling of dulness or perhaps one of unusual exhilaration, which leads this particular individual to expect an attack, but it is not in any sense diagnostic, and it often happens that the attack does not materialize. The sensory phenomena are pretty constant and characteristic, and generally take the form of the so-called scotoma scintillans, or sometimes of a temporary hemianopsia.

These sensory disturbances may last a half an hour or more and, on account of their evanescent character and their affecting both eyes have been interpreted as indicating disturbances in the circulation of the optical areas of the occipital lobe. But even this symptom is not characteristic of migraine since some patients have attacks of this sort several times in a single day without any sequelæ, and many ordinary attacks of fainting are preceded by similar phenomena. Occasionally these angioneurotic disturbances are confined to one eye, in which case they must be due to retinal disturbances, instead of cerebral, while the uncertainty of the line separating the functional from the organic is shown by the rare cases in which more or less permanent paralysis of ocular muscles follows an attack of ordinary migraine. Neither is the headache of itself pathognomonic for it is not always one sided nor severe, and its duration may be an hour or two, or several days. In most cases, there occurs with or after the headache an intense nausea with vomiting which sometimes relieves the headache, but more often intensifies it.

While the symptoms of migraine must be ascribed to angioneurotic cerebral disturbances, there are many reasons for thinking that these in turn are often dependent on eye-strain. Every one of the individual symptoms is often so caused. Many persons can produce at will some form of scintillating scotoma or headache by over-use of the eyes, while nausea and vomiting, while not so common are undisputed results. Neurological text books state that the disease begins in thirty per cent. of the cases between the ages of five and ten, or just the time when school begins to put the first serious strain on the eyes, while most of the rest begin in the second decade. It is said to gradually subside after the menopause, which might be considered significant if it did not also begin to abate in men at the same age. But this same period in both sexes marks the onset of presbyopia after which even straining the eyes no longer produces satisfactory near vision. In perhaps the majority of people this period determines the date of the first real examination of the eye with its consequent relief of strain. But among those who, for one reason or another, put off as long as possible the wearing of presbyopic glasses, the attacks of migraine are notably increased both in frequency and severity between forty and fifty. In old age when the accommodative power has practically disappeared and eyestrain is no longer possible attacks of migraine are almost unknown. Patients

often testify that their attacks are much more frequent when they are doing work that involves unusual strain of the eyes, while conversely when leading an outdoor life, they are practically well.

The connection between migraine and eye-strain, however, must be based not upon theory, but upon practical results of treatment. It does not follow that because a patient has a refractive or a muscular error that we have necessarily discovered the cause of his attacks, but when they cease entirely or for long periods of time after attention to the eyes, it is reasonable to assume that at least one exciting cause has been discovered.

But many neurologists testify that they regularly send their migraine patients to "competent" oculists without the slightest benefit. Why should results of treatment vary so that a neurologist can truthfully say that he has never seen a case benefitted by eye treatment, while at least one oculist goes so far as to say he has never seen a case he failed to cure? It may be that the neurologist sees more patients in whom the underlying nerve instability is the chief factor, while the oculist gets more in whom the over-strain predominates and where the prognosis is naturally much better.

Another very possible explanation may be found in the methods of treatment practised and taught by some of our leading ophthalmologists. For instance, one author (Roosa, *Jour. A. M. A.*, Feb. 13, 1909, p. 543) summarizes his own position as follows:

"I present what I conceive to be safe and sane views on this subject, which I also believe to be the views of the majority of ophthalmologists.

"The field of abnormal refraction is not entered in hyperopia of less than two dioptries unless corneal astigmatism be added to it.

"I deny the existence of muscular asthenopia except as dependent on errors of refraction. I do not find any value in prisms or decentered glasses except in cases of paralysis.

"I have no fear of having glasses too strong in either myopia or hyperopia so long as those chosen give the best vision. If the patient complains of pain, it may be assumed that the pain is not from the wrong glasses, but from the eye itself.

"I do not believe that a quarter of a dioptry will make any essential difference in the vision of a patient, and especially not in his ability to use his eyes without headache or other asthenopic symptoms.

"Almost infallible evidence against the existence of eye strain in a given case is the absence of ocular symptoms.

"I abandoned retinoscopy as the most difficult and the least satisfactory method of determining the refraction of an eye, which contributed nothing that cannot be more easily and expeditiously performed with the upright image.

"Fortunately the use of the ophthalmometer is easily learned. With a good teacher, a man skilled in other manipulations will be able to go by himself in two weeks' time."

The man who expressed these views was one of the most impressive and influential teachers of ophthalmology in America for many years, and it may be, as he thought, that they are the views of the great body of his confrères. Perhaps the discussion of this paper will shed some light on that point. But if they are, we have all the explanation necessary for the common failure to relieve all sorts of conditions which depend on eye strain.

There are several ocular conditions which apparently cause attacks of migraine in susceptible individuals. First and most important comes use of the ciliary muscles beyond the individual's physiological capacity, which exceptionally may occur in overworked normal eyes, but is much more probable in hyperopia and especially in astigmatism. Cerebral fatigue from the close and constant study of retinal images distorted by optical imperfections may also play an important part. Many men lay great stress on the imbalances of the extrinsic ocular muscles which may interfere with easy binocular vision, but in my experience these have been of decidedly secondary importance.

It has been widely taught that refraction is perhaps the most scientific branch of medicine in the sense that all well trained men, by following certain well defined rules, should reach identical results. I believe this is very far from being true. It is rather an art based on a science; one in which good judgement plays fully as important a part as skill. Most people have as real a capacity to compensate for ocular insufficiencies as for cardiac, and when compensation breaks down a little rest or a little help will restore it again. If a patient has half his error of refraction corrected he can often compensate for the other half without much trouble. To this we can ascribe the success of the optician and of not a few oculists. Such work is not accurate, but if deliberately intended it is good work in the sense that it is all the patient needs or wants.

But in this class of patients whose entire difficulty springs from lack of the normal compensatory ability, examination of the eyes must be as different as possible from the usual routine. To attempt it without cycloplegia is to fail in most cases, while not infrequently prolonged cycloplegia is necessary. It is advisable to correct astigmatic errors of a small fraction of a dioptré, and for this purpose the usual objective tests are entirely inadequate.* One must not only discover the static refraction and the muscular balance, but estimate the patient's muscular power, his age, and the kind of work he has to do. The correction given will vary according to the conditions present, and is a matter of individual judgement rather than rule. Many patients re-

quire full corrections, other over-corrections; one may have a subnormal accommodation and require a presbyopic correction long before the usual age, while another may need prisms or an operation for some muscular imbalance. Furthermore, patients of this type must be kept under observation for some time and the greatest care given to seeing that their glasses are properly adjusted by the optician, as errors in the centering and axis of glasses, their distance from the eyes, the type of frame employed, and similar minutiae which would be of small account to the ordinary patient may make all the difference between success and failure with these hyper-sensitive individuals.

The patient, too, must do his part. He must be made to realize from the beginning that his glasses are intended primarily to relieve strain and only secondarily for visual purposes, and that one great object of the examination is to determine whether his attacks originate from his eyes or not. He must therefore often be content to wear patiently for some time glasses which for optical purposes are far from ideal and perhaps seem to him worse than none at all. Furthermore, the original glasses are not to be considered as a perpetual guarantee against attacks, no matter how successful they may be for the time. As the eyes change with age and their ability to compensate varies from time to time in the same patient, it is necessary to make repeated changes for one, while another goes on for years without trouble.

THE ROLE OF THE DISPENSARY AND THE DAY CAMP IN THE ANTI-TUBERCULOSIS MOVEMENT.*

By GEORGE J. ECKEL, M.D.,

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THE usual conception of a tuberculosis dispensary is a clearing house through which applicants for its advice or assistance are directed into the proper channels for filling their needs. This may lead one to the sanatorium for incipients, where health and wage-earning capacity are to be partially or completely restored; another to the hospital for advanced to protect his family and the community from contagion; another whose disease is too far advanced for the sanatorium and not far enough for the hospital, it will lead to the relief society or "class organization," whence funds and facilities will be forthcoming for a period of home treatment. To accomplish these results is not always easy or simple. Sometimes it means invoking the aid of the probation or truant officer, juvenile court, children's aid society, the applicant's

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 16, 1912.

church organization, and sometimes it is necessary for the health department to use "strong arm" methods. Thus it will seem that the special dispensary is a medico-sociological organization, whose efficiency will be in direct proportion to the skill and judgment of the medical attendants, and the broad sympathy, experience, tact and perseverance of the social workers; usually, nurses with special training for the work. Good work, too, will necessitate that the co-operation between the two departments be thorough and cordial.

The rôle of the dispensary in relation to the community is almost entire prophylactic and in passing, no institution gives so much real prophylaxis for the monetary investment. The clientele of the average dispensary is, with few exceptions, poor or ignorant or both, and not in a few instances depraved. It is the class that most needs and can least afford competent medical advice, and even if it had the means, it would not know where to look, as is evidenced by the large number of flourishing quacks who fatten off this class almost exclusively.

The finding of the incipient case and his restoration to health and industrial efficiency in the sanatorium is a direct saving in terms of money to the taxpayer of the community, for it obviates a later period of invalidism in this patient's life with consequent indigence and dependence of his family, who in most instances at some time or another must be supported in whole or in part by private or public charity. Neglect of this patient, in addition to causing invalidism and indigence, may cause infection of one or more members of his family, as actually happens in at least one-third of the families of the neglected or vicious cases, and thus the public burden is doubled, trebled, and even quadrupled. Finding and curing this patient, from the public health standpoint, has stamped out another focus of infection, a matter of the utmost importance to the community. The patient himself has been given an opportunity to fight for his life against a disease for whose existence the community is more responsible than he—an opportunity to which he is certainly entitled.

In dealing with the advanced case, the dispensary, in common with all other agencies, is seriously handicapped by the lack of hospital provision for this class of sufferers. This situation is happily to be relieved in Buffalo, as an excellent site has just been purchased on which a hospital for the advanced will be erected. What can be done here, however, is to examine those who have been exposed to infection, which has been dealt with exhaustively in Dr. Pryor's paper. What we wish to emphasize here is that this can be,

and in our experience, is done best and most consistently in the dispensary. The records at Ray Brook show that where dispensary work and examination of the exposed is carried on most actively, the largest number and best type of incipient cases are found.

Another feature of dispensary work of which the community ultimately reaps the advantage, is the opportunity it gives for training an ever increasing number of physicians to recognize this disease at the earliest moment. There has been much complaint in the past, and justly so we think, of the ignorance or apathy of the average physician regarding tuberculosis. Medical schools have certainly been remiss in the past in regard to teaching this branch of medicine, many men having been graduated without ever seeing a case of incipient tuberculosis. However defective a physician's training may have been, there is every opportunity for him, especially in the larger communities, to learn something about tuberculosis if he will only take the time to work in the dispensary for an hour or two a week for a short time.

Ideally, the tuberculosis dispensary with its staff of physicians and trained nurses will reach its highest efficiency as a part of and under the direct control of the health department. One reason is that the burden of supporting work so distinctly of a public health character should not fall on private enterprise but on the community which derives the benefit therefrom. Another and stronger reason is that the help of the health department must often be invoked to bring recalcitrants to time; hence, much valuable time and energy could be saved and not a little unpleasantness avoided if all those in the work knew and were clothed with authority given by the various public health statutes and ordinances. Still another reason is that the dispensary by the nature of its work is on the skirmish line in the very forefront of the fight and consequently has opportunities for gathering and computing data not only on the individual patient but on the tuberculosis problem as a whole, and as a corollary to this, is in a position to judge of the efficiency of various methods for dealing with the disease. It is best that such knowledge be in the hands of the health department, as it is always available and can be used more advantageously to influence legislation or other methods for control of the disease than when in the hands of a private organization.

Passing to the subject of day camp, a day camp is a day sanatorium, where the régime, during the day at least, corresponds as closely as possible to that of a well equipped and well conducted sanatorium. At night most of the patients are sent home, using the street cars as a means of conveyance. At first thought it might be imagined that the trip to and from such a camp each

day might entirely neutralize any good effect produced by treatment during the day. As a matter of practical experience extending over four seasons, during which 400 patients were treated, we did not find this true, and we think this is in accord with the experience of others.

The equipment of such a camp is usually simple. Indispensable is a good cook with a shack for a kitchen and a well filled larder; one or more nurses who have some knowledge of the work, are interested and sympathetic, and able to enforce discipline; one or more physicians who, in addition to a thorough understanding of the diagnosis and treatment of tuberculosis, have a capacity for sympathizing with and understanding the mental "kinks" of the average sufferer from tuberculosis. The location by preference should be on the outskirts of the city, yet readily accessible by street car. Trees and undergrowth are not absolutely necessary, but desirable. More important is sufficient distance from neighboring residences, as not to annoy their occupants, and the absence of smoke and dirt from railroads and factories. These can usually be obtained in any city, and with a shack or two, or two or three large tents for a dining room and to shelter patients in inclement weather, the work can be begun.

The day camp is a makeshift, called into existence to meet a most pressing need, the care of those sufferers for whom there were either no hospital facilities at all or where these existed they were either inadequate or poorly and inhumanely managed. It is as an educational factor, however, not so much of the patients as of the general public, that the day camp has filled its greatest function, and the reason therefore is not far to seek. The very nature of the work places it more or less in the public eye. There are so many points at which this work articulates with public interest not possible in other tuberculosis work. A visitor strays in casually out of curiosity. He finds, perhaps, amongst the patients a poor woman palpably worried, and on inquiry finds she is to be evicted for non-payment of rent. He canvasses his friends and the rent is raised. Another becomes interested in an immigrant boy who has hardship enough with tuberculosis, and finds he has no home and is in need of clothing. This insures the interest of another group of people. Such incidents might be multiplied indefinitely, but they serve to show how interest is aroused. As the season advances and health and spirit begin to return to those in the earlier stages, interest is aroused in another phase of the problem; he sees with his own eyes that patients can be cured of the disease in his own town without change of climate, something he has probably never believed before. The work is also susceptible of newspaper notice, and by this and other means it is surprising how many people can be educated in a single season to an appreciation of the needs of the consumptive in the

way of humane treatment and hospital facilities that will give him a chance to fight for his life, if that can be saved, or at least protect the community from further infection. Such education means generous response to appeals for aid to carry on the work; it means that when demands are made on the proper authorities to construct sanatoria for incipients and hospitals for the advanced, there is an enlightened public opinion to back such a demand and public authorities can not, in fact, do not wish to, stand out long against a proposition for which there is an insistent, concerted demand on a large part of their constituency. No city illustrates this better than Buffalo. Two hundred and fifty thousand dollars has been spent in building and equipping a sanatorium for incipients outside the city. A site has been purchased within the city and an equal amount will be expended in building a hospital for advanced cases, and all this has been accomplished in four years.

So far as the results for the patient are concerned, we believe they are about the same as can be gotten in a sanatorium in the same length of time, with the possible advantage of being more permanent, as the patient does not have to change his environment materially when the treatment period is concluded. We have as a routine, however, always advised patients to go to a sanatorium at the end of the season to clinch the results.

Hospitals and sanatoria will go a long way in reducing the mortality and morbidity from tuberculosis, but in the last analysis tuberculosis is due largely to social conditions over which medicine has little control, and the total eradication of the disease can only come about by the abolition of those factors so fruitful in its cause, *viz.*, overwork, poor housing, bad shop, house and factory hygiene, underfeeding, too early employment, ignorance and vice; in short, by a complete readjustment of our present industrial and social conditions.

Discussion.

DR. S. ADOLPHUS KNOPF, of New York: I wish to congratulate Dr. Eckel and the people of Buffalo on the very efficient tuberculosis work done in that city. There is no question that the dispensary and the day camp are very important factors in our anti-tuberculosis crusade. The dispensary, which serves not only as a means of teaching the ambulant cases, but also as a clearing house from which sanatorium and hospital cases are to be selected, is of particular importance.

The day camp is, of course, also of great utility for cases which for one reason or another cannot be admitted to a sanatorium or a hospital. The good work of the day camp is, however, partially, and perhaps in some instances entirely undone by the unhygienic environments and overcrowded bedrooms to which the patient is obliged to return for his night's rest. These

environments should be investigated and a good hygienic home with well-ventilated bedrooms should be made the adjuvant of the day camp. Looking after the patient after he has left the institution is not only essential for the camp, but also essential for tuberculous sanatorium and hospital patients in general.

In the early afternoon of today it was my privilege to mention, in my paper read before the Section on Mental and Nervous Diseases and Eugenics, the cost of tuberculosis in New York City. Let me summarize here what I said then regarding this subject. We are spending approximately \$2,000,000 a year for the care of the tuberculous alone in sanatoria, hospitals and dispensaries. A goodly number are discharged from the sanatoria as cured or arrested cases, but a very large percentage of these turn up again in some of our dispensaries after a few months with new typical lesions. I do not question for a moment the accuracy of the examinations and the conclusions arrived at when these patients were discharged as cured or arrested cases. Hence I said advisedly that new lesions were found in these relapsing cases. What causes these relapses? The return of the patients to the former environments or occupations in which they had contracted or developed the disease.

Unless we investigate the environments and occupations, improve the former and advise against taking up again dangerous occupations, we will spend a goodly part of the two million dollars annually in vain.

I was much gratified by the author's views on climate. They coincide in the main with those which I have held, taught to my students, and advocated before medical and lay bodies for years. Only I go a little further in saying that, while not by any means deprecating the value of certain factors, such as high altitude, plenty of sunlight, dry, mild and even climate, we cannot, unfortunately, avail ourselves of these gifts of nature for the vast majority of our patients. In other words, the greatest number of our patients come from the laboring classes, and these we must treat and cure in nearly the same climate as that in which they will have to live and labor after their restoration to health, that is to say, in our home climate.

Now, I will concede that it may take a little longer to cure our patients in our home climates, some of which are pretty rigorous, but I am firmly convinced that the cures thus obtained compare very favorably with those obtained in milder climates, and in the end are more lasting and the relapses are fewer.

One more word. Tuberculosis has as large a social as it has a medical aspect, and unless we take cognizance of this fact and improve the social conditions of the masses we will never, never become masters of the Great White Plague.

EXHIBITIONS OF SECTIONS OF THE TEMPORAL BONE—DRY SPECIMENS SHOWING THE NASAL ACCESSORY SINUSES.*

By WILLIAM MEDDAUGH DUNNING, M.D.,
NEW YORK CITY.

THIS paper will, for the sake of convenience, be divided into three parts:

1. That dealing with the parts of the skull in relation to their normal changes of growth from the fœtus to the adult.
2. The individual variations which may occur in the different parts of the bone.
3. An inquiry into the alleged inconstancy of the course of the facial nerve.

While this last division of the subject is of surgical importance, because of its relation to the mastoid operation, whether simple or radical, yet displacements of the nerve are so rare that almost no literature can be found touching upon the question. The entire index medicus for the past seven years catalogues less material upon anomalies of the facial nerve than would fill one ordinary octavo volume.

THE TEMPORAL BONE.

Phillips has wisely called the temporal bone the most complicated of all the bones in the human body. It consists of three parts—the squamous, the petromastoid, and the tympanic portions, which in fœtal life are entirely separated and accomplish their union in the developing child by a long process which does not end until after puberty.

At birth there is practically no external bony canal as yet developed and the facial nerve makes its appearance very high. As time goes on, the tympanic and the squamous portions of the bone extend outward and the bony canal develops as illustrated by various specimens.

Just before the close of fœtal life the temporal bone consists of four dissociated parts. In the squamo-zygomatic portion ossification begins in membrane from a single nucleus appearing at its lower part at about the second month of fœtal life. The tympanic plate is an imperfect ring containing in its concavity a sulcus for the attachment of the tympanic membrane. The tympanic plate is also ossified at about the third month from a single center, and the petromastoid part is developed from six centers, appearing at about the fifth or sixth month; shortly before birth the tympanic plate joins itself to the squamous; the petrous and mastoid also unite with the squamous during the first year of extra-uterine life, and the tympanohyal portion of the styloid process at about the same time. The stylohyal does not join the rest of the bone until after puberty, and in some skulls these portions never become united.

The drum-head and ossicles are virtually full-

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

formed at birth and are very little changed thereafter, which is quite unlike the constant variation of the surrounding parts. Randall says that the separation of the labyrinth from its fellow on the opposite side may double as the cranial base develops between them; although the labyrinth varies very little if at all, maintaining an antero-posterior length of 16-17 mm. "The lower margin of the annulus is some 30 mm. from its fellow at birth. It develops only outward to form the floor of the meatus and grows little in diameter." This doubling of the distance from the median plane is produced by forcing outward the annulus tympanicus and the middle ear, which does not, however, change in form and direction like the mastoid and squamous portions.

Neither do the changes in the tympanic plate take place evenly all around the circumference of the ring. They occur more rapidly in one portion than in another, notably in the anterior and posterior portions, and these outgrowths meet and blend, making in some instances a foramen in the floor of the meatus, called the foramen of Huschke, which sometimes persists for life.

In the adult the floor of the tympanum is fully 20-22 mm. above the floor of the nose, while in the newly born it is on a level or below that of the nasal floor and the direction of the tube is nearly horizontal.

Some authorities say that:

1. The eustachian tube of the infant is shorter than that of the adult; but
2. The tympanic orifice is quite as large; and
3. The membranous and bony portions of the tube have no demonstrable angle at the point of juncture.

In adults the drum-head is at an angle of 55 degrees with the floor of the meatus.

In musicians it is usually more perpendicular; in deaf mutes more oblique.

THE MASTOID PORTION.

In the new-born there are few or no mastoid cells, although the antrum may be found nearly as large at birth as in the adult. The mastoid portion is at first quite flat and the stylo-mastoid foramen and beginnings of the styloid process are immediately behind the auditory meatus.

With the beginning of the cells in the second year the outer portion of the mastoid portion grows downward and forward to form the mastoid process. It is this downward and forward growth of the mastoid which accomplishes that pushing forward of the tympanic plate we have before noticed. Necessarily the descent of the foramen lengthens the aqueductus Fallopii.

In the new-born child the tympanic membrane is almost horizontal and the course of the nerve is that which Schwartze calls *flachverlauf* or horizontal course. The facial nerve in infants emerges usually opposite the middle of the an-

nulus and is in danger of being cut off if incision is made as far downwards as is usual in adults. Indeed, the opening of the canal is practically exposed on the lateral aspect of the skull at birth and is liable to injury during delivery, whereas in the adult the trunk of the nerve is in a protected position as it emerges from the stylo-mastoid foramen. Gray is emphatic in saying that the mastoid process is not completed until after puberty, but we find cells of good size in a child of six years; probably, then, the period in which they develop is mainly from one to six years of age.

According to Gray also, the cells are "large and irregular and contain air at the upper and front part of the bone. They diminish in size toward the lower part and those situated in the apex of the mastoid process are quite small, representing spaces of cancellous bone and usually containing marrow." This is not, however, a universal belief. A number of observers have found that there are large cells to the tip, and I find large cells to be the rule.

II. VARIATIONS.

Aside from the development of the skull by the natural process of growth, there are numerous variations to be recorded.

The tegmen may lie very high or very low. The lateral sinus may lie very far forward or it may lie backward.

In illustration of anomalies of the lateral sinus, I have found cases where the sinus projected forward, occupying all the apophysis and uniting itself with the posterior wall of the internal auditory canal, and cases have been reported where the antrum was behind the sinus, a situation grave for the operator.

One of my specimens shows the sinus deeply hollowed on the internal face of the bone, the external cortical—very thin—plate forming the external wall of the sulcus. If one should trepan at the level of the spine of Henle, he would fall upon the sinus in this case, while in another somewhat similar one he would go into the middle fossa. Frequently we find the sinus far forward close to the posterior meatal wall.

The lateral sinus is often the most superficial and is also the most variable of the structures we seek to avoid. It may lie anywhere in the mastoid. We have seen how far forward may be its anomalous position, and it may be so superficial as to be covered only by a thin layer of cortex or it may lie very deep. At times it divides the mastoid cells into two groups, an anterior and a posterior.

These are not only the variations for age as we have described them but for individuals also. One individual has a great many large cells, another only a few small ones, and another none except the antrum, which is almost always present. This is the most constant of all the mastoid cells.

It is a difficult thing to tell whether it is pneumatic or not before operation, except by the radiogram. On the whole, long, narrow skulls have pneumatic processes oftener than have the round skulls. In round skulls the external canal is usually longer and the middle ear lies deeper. Often there are no cells, with the sinus and dura very close to the external meatus and the middle ear. The antrum may extend outward to one-half of the length of the meatus; when very small it is found only in the neighborhood of the annulus tympanicus.

It has been found also that intracranial dehiscences frequently occur. Out of a collection of 577 skulls examined in France, 21.8 per cent. were found upon examination to have dehiscences. These were mainly located in the posterior half of the tegmen, in the tympanum, and in the aditus. Dehiscences may also occur in the bony covering of the Aqueductus Fallopii, and injury to the facial nerve may occur because of dehiscences in its bony covering. In an extensive necrosis along the floor of the inner wall extending below the aditus and antrum, the nerve trunk may be severely injured.

Often a mastoid operation is nothing but draining a superficial abscess; there is no possibility of deciding in advance what anatomical differences will present themselves in the course of the operation, except by radiogram.

In relation to that which we call the radical mastoid—and the Germans the *totalaufmei-schung*—or complete opening into the middle ear (for Schwartz says the radical is never *actually* radical), the most interesting features are the position of the tegmen tympani and the lateral sinus, and finally the position of the facial nerve.

III. THE FACIAL NERVE.

Possible anomalies of the facial nerve have been accounted of surgical importance by such men as Wendell C. Phillips, Passmore T. Berens, Selden Spencer, in America; Schwartz and Politzer, in Germany, and Mouret and Houlie, in France.

For myself, I find the facial nerve the most constant of all the parts included in the temporal bone, and I have never found it anterior to the external horizontal canal, nor posterior, nor external to it.

As, however, there are statements to the contrary, recorded abnormalities are here investigated and recounted.

Medical libraries yield at present few cases of authentic facial nerve displacement. Most of the discussion as to the exact of anomalies belonged to the years 1903-1904 and was focussed upon a paper written by Schwartz, of Germany. Dr. Houlie, of Paris, in an article upon "Wounding the facial nerve in the course of extracting the anvil," speaks of the danger to the seventh nerve, especially in using Ludwig's hook, if the "anvil should chance to wedge up into the aditus

—an occurrence verified by autopsy—and if the nerve is very superficial."

Ossiculectomy is not a common operation now, yet without being very frequent it sometimes is performed. Houlie's statement of the superficiality of the facial nerve may be akin to the remark of Schwartz that the "facial nerve may come so near the surface of the mastoid process that even by the first chisel stroke an injury to it is possible." I find this statement incomprehensible except possibly in the case of children. The greatest danger to the facial nerve occurs at a point a short distance below the horizontal semi-circular canal, and in some instances a little above the stylo-mastoid foramen.

The facial nerve from its relation to the bridge of bone separating the antral from the tympano-meatal cavity is at times injured by chiselling. The only real danger of injuring it is in removing the bridge, but if one keeps in mind the rule that the nerve's course downward to the stylo-mastoid foramen is never anterior to the external semi-circular, nor posterior, nor external, and the plane is as deep as the aditus above and the digastric groove below, he need have no fear in removing sufficient bone and lowering the canal enough to allow placing the skin flap.

The most emphatic utterances on the variable course of the nerve come from Schwartz of Germany and are to be found in an article in the *Archives fur Ohrenheilkunde* upon the "variations in the course of the facialis in their significance for the mastoid operation." In that article he calls attention to the specimens shown in the convention of German naturalists and physicians in Carlsbad to illustrate the several types of its course.

The part of the nerve displayed was that from the second angle over the fenestra ovalis to the foramen stylo-mastoid or its mastoid track.

Five preparations were demonstrated:

(1) A dry preparation exhibiting the radical operation, the facial nerve lying close to the posterior partition of the auditory meatus.

(2) Four preparations preserved in alcohol as examples of *Steilverlauf* (steep course), *Flachverlauf* (level course), and *Schraegerverlauf* (oblique course) of the facialis.

In preparation (5) the nerve is distant 1 cm. from the posterior wall of the auditory meatus.

Schwartz thinks that the more nearly the facial canal approximates the steep, the safer is the operation, and, on the other hand, the flatter the course—that is, the farther the lateral canal runs towards the auditory meatus—the greater is the possibility of coming into collision with it.

Spencer of Washington shows what he calls the steep and the flat courses and also accounts the flat the more dangerous course. In his "Surgical Anatomy of the Temporal Bone" he says: "The facial nerve lies more externally below than it does above, so that if a probe were placed on the aditus of the antrum, the part of the nerve

above it would lie median to its point, while that below would be external to it."

The danger lies next if the disease is as deep down in the mastoid process as the horizontal plane through the floor of the aditus to the antrum. "While the facial lies far internal to the upper part of the margo tympanicus," says Schwartze, "it passes in its downward course so far outward that it can come not only in the plane of the lower part of the tympanic margin (*steilverlauf*), but even far outside of the lower part of the margo tympanicus (*flachverlauf*). The possibility of wounding the facial nerve is enhanced or diminished by its position nearer to or farther from the surface of the posterior wall of the auditory meatus." How great these differences can be is shown in the preparations exhibited by Schwartze in the German convention.

Randall of Philadelphia states emphatically that the course of the nerve descends vertically from a point a few millimeters from behind the posterior pole of the ear drum so that it comes into relation only with the posterior inferior wall of the meatus. In 500 skulls examined by him belonging to the Hyrtl collection of the Mutter Museum of the Philadelphia College of Physicians and in the Wistar and Horner Museum of the University of Pennsylvania, and in some of the skulls of his own private collection, besides all the skulls of the anthropoid apes which are available, he inserted straight probes into the stylo-mastoid foramen of the inverted skulls. In the saggital plane, deviations from the exact perpendicular were absent; in the transverse plane they were more frequent than he had expected.

In all of these cases only a single one in an otherwise mesocephalic juvenile skull of the Hyrtl collection could be considered to show any notable outward deviation of the descending portion of the facial canal to the amount of 10 degrees.

Twenty-two per cent. showed measurable *inward* deviation at all from the vertical. In one specimen there was outward deviation of some 15 degrees on the right side while the left was vertical. The development of the para-mastoid process was evidently responsible for this displacement of the exit of the facial canal; the true course was as vertical as that of the other side. With this one exception noted, the juvenile or infant skull was found to show outward deviation, nor was such found in chimpanzees, but an outward deviation of from 3 degrees to 30 degrees, and averaging 20 degrees, was invariably found in gorilla and orang outang skulls, whether mature or otherwise.

Sixty-five of the 500 skulls he examined, or 13 per cent. of them, showed a measurable outward deviation in an unimportant degree. Of these, 25 were of more than 3 degrees and only 9 of more than 5 degrees. A close study of those with marked outward deviation showed that slight over-development of the para-mastoid

process had in each case encroached somewhat upon the exit of the canal and that the probe did not fairly indicate the really vertical direction of the canal within. The external auditory canal is the natural structure with which to compare the direction of the facial nerve, since it is in the removal of its back wall that there is the greatest surgical importance in locating the nerve.

Dr. Alexander Randall's conclusions led him to differ from the statement made by Schwartze that the distance of the facial canal posterior to the back wall of the meatus might vary from "directly upon it to 1 cm. away from it." His own large number of measurements had located it never less than 2 mm. and never more than 4 mm. from this wall. The descending course of the facial nerve to its exit is in all cases exactly vertical. I believe that the apparent inconstancy in the direction of the nerve in most cases it is the other elements that vary. The vertical position of the nerve is to be found in all types of skulls, ranging from the extreme dolichocephalic to the brachycephalic.

It remains to be mentioned that Passmore T. Berens has a specimen found in the Manhattan Eye and Ear Hospital by Dr. E. S. Thomson (this bone is described in Dr. Wendell C. Phillips' text book) which shows the nerve 1 cm. external to its usual course. "In this specimen the nerve is exposed from the point of its entrance into the cavity of the tympanum. It takes the usual course between the foramen ovale and the external semi circular canals, where it bends downward and slightly backward at its proper level for 2 mm., when it turns outward and pursues a straight course, traversing in an oblique direction the posterior wall close to the mastoid cells to its point of exit, which is 1 cm. external to its rudimentary canal indicated by the mastoid process for a space of 3 mm., the nerve is a centimeter external to its usual course. The nerve from where it leaves the tympanum to its point of exit marks almost perfectly the line of the bone wound from the Schwartze-Stacke mastoid operation at its point of exit, the nerve bends sharply inward and probably reaches in its external course nearly to its normal position in the neck.

"Another point of interest in this bone is that of a sulcus extending from the attic posteriorly from just behind the foramen ovale and reaching 3 mm. beneath the nerve ending in a blind pouch. This might readily be taken for the aditus, or in diseased conditions would complicate surgical procedure in this locality, for the nerve could scarcely escape injury."

CONCLUSIONS.

In summing up this paper, it is perhaps enough to say that I have found and examined specimens showing most of the changes mentioned in the development of the bone from the foetus to the adult. I have found also specimens of all the variations from type mentioned in this paper, except inconstancy of the facial nerve. Such I have not yet seen.

The recorded instances of misplacement of the nerve in its course through the Temporal bone are:

1. About five cases in an old French book, only one of which, and that the eighteenth century, is an example of any of the specimens I am now discussing in this collection of anomalies.
2. Five cases mentioned by Schwartz as exhibited at the German Convention in Carlsbad.
3. The interesting specimen in the possession of Dr. Passmore T. Berens, a description of which we have quoted at length because of its rarity.

Many observers have made general statements of belief in the frequency of the nerve displacement, but actual specimens of this anomaly are certainly not forthcoming at the present moment.

THE WORK AND AIMS OF THE COUNTY MEDICAL SOCIETY.*

By BROOKS H. WELLS, M.D.,
NEW YORK CITY.

FOR more than one hundred years, it has been the pleasure of this society that the one chosen by its suffrage to be its presiding officer should, before taking his seat, address the members and express to them—as I do now—his most grateful acknowledgement of the honor conferred upon him and his appreciation of the responsibilities of his office.

Neither the honor nor the responsibilities are to be minimized, for this great society, the representative of the medical profession of the greatest city of the western world, has traditions to remember and present duties to perform of vital interest to the profession and to the state.

At the time when the men of New York pulled down the leaden statue of King George to make bullets to shoot at his soldiers, and when the famous tea-party was held at Boston, there were in the Colonies some thirty-five hundred practitioners of medicine, of whom only four hundred were educated physicians. There were no medical societies, other than small coteries of no importance, no medical journals, and no restriction of medical practice. There was a medical practitioner to each two hundred and fifty of the population. Conditions finally became so scandalous that, in the year 1806, the Legislature, awakening to the necessity of protecting the people from the abuses of unscrupulous and ignorant men, recognized the claims of medicine as a science and by a special act, provided for the establishment of county medical societies and of a delegated central body to be known as the State Medical Society.

Under this Act, this society, which had existed under the name of the Medical Society of the State of New York from November

4th, 1794, was incorporated on July 1st, 1806, for the purpose of "regulating the practise of physic and surgery in this state." That is, it was to protect the people of the state from charlatans and to watch over the interests of the profession. To make these regulations effective, only members of the society were allowed to practise, membership being conditioned on passing the requirements of the Board of Censors of the society and taking its prescribed oath. This relation continued to exist with slight changes for thirty-eight years—until 1844. At first its effects were wholly good, but abuse of its great privilege led to evils, to serious and discreditable dissensions, and the proud orthodoxy of its members to intolerance, so that the host of imposters and quacks were finally armed with successful argument for the repeal of the laws that had so long held them in check. These Statutes were those that had denied legal standing to the fees and collections of quacks and had named criminal penalties for unlicensed practitioners. The profession was dismayed by the repeal of these laws and apparently only then began to realize the favor it had for so long enjoyed at the hands of the state.

The most bitter of the contentions of those times was that which led the general public to think of the medical profession as being divided into two sects—the regulars and the homeopaths—and this feud was most largely instrumental in leading the public, through its law-makers, to strip us of the exclusive right which we had held for thirty-eight years of determining who should practise medicine and how he should be qualified.

The fight went on through the years, with the conditions surrounding the practise of medicine growing more lax. In 1882, the county society, through its delegates, persuaded the state society to repudiate its allegiance to the Code of Ethics and so to allow consultations with homeopaths. The state then appointed three sets of examiners, a regular, a homeopathic, and an eclectic. The working of this plan was not satisfactory, as it tended to perpetuate the differences of the schools and to separate their graduates.

The present medical law, enacted in 1907, forces every person who wishes to practise medicine within the state to pass one and the same examination and thus gives to all a common qualification. All practising physicians in good standing in New York County should therefore be entitled to membership in this society.

From 338 members in 1806, we have grown to have in 1912, 2,469. Of the remaining 2,500 practitioners, there are some 2,000 eligible physicians in the county who do not appreciate the duty, the value, and the privilege of membership.

The duty of membership lies largely in the fact that the power of the society, both in up-

* Inaugural address, delivered before the Medical Society of the County of New York, January 31, 1913.

lifting and in protecting the material interests of the profession must be in direct proportion to the number, the personal endeavor, and the loyalty of each one of its members, and in the fact that the state in granting privilege imposes obligation which we should not shirk.

The direct value and benefit of membership includes besides the very real value of a better standing in the profession and in the community, the Medical Directory, the *State Journal of Medicine*, defence against malpractice suits, indorsement upon removal to other states, or counties, membership in the state society, eligibility to the American Medical Association, participation in the scientific work of the society, and in the social hour after the meeting.

Let each one of us determine to influence and bring into our ranks some one of the two thousand who is now neglecting this civic and professional obligation.

One of the reproaches that has been brought against the medical profession is that, in general, it is indifferent to the welfare of its fellow practitioners. If this be even partly true, it is another reason for membership, for one of the important duties of our society is to work for the betterment of the economics of medicine. No other association, whatever may be its claims, can do as much to advance our professional interests here in New York City as our own county society, which we should most loyally support. In this respect, the county society differs from private medical organizations whose sole object is the promotion of science and good fellowship. Economic problems are easy to discuss, criticism of existing conditions is very common, but real constructive work to remedy conditions can only be gained by careful study and the co-operation of all the members.

The meeting next month to discuss the dispensary question shows clearly the interest the society takes in the solution of economic problems and demands a full attendance, and careful study. Resolutions will not remedy evils, unless backed by sound public opinion.

Every physician should realize his duty in these matters and in maintaining the efficiency of his county society, for upon its strength, and character, and fidelity rest the purity and good name of his profession and also such measures as make for his own material advancement.

I would urge upon you—upon every member of our society—that you take this matter of increasing our membership seriously to heart, that you consult the little green book to find what desirable practitioners in your neighborhood may not be members and discuss with them their civic, moral, and individual obligations to become members. If they have grievances, real or imaginary, the best way to wipe them out is for them to come into the fold. If neglect is due to ignorance, you can enlighten. If due to selfishness you can point out the material benefits. You are the ones that can do most in bringing in

these men and you will reap with them the many benefits of a full membership.

The coming year should find us with full ranks, marching shoulder to shoulder and presenting an unbroken front to any evil that may threaten us.

It is for us to maintain and to strenuously fight for the honor, the high ideals, and the personal integrity of all members of our profession and especially for these qualities in the fellows of our own county society.

In so far as we fail in any way in this, we lessen respect, both in our own eyes and in the eyes of the public. There is no alternative. There is no excuse in pointing to the temptations placed in our path by the exigencies of economic stress, neither can we sit at home neglectful of our obligation, content to let those who will fight the battles in which we should be foremost.

You have not finished your duty when you have joined the society, or when you have elected your Comitia. To them you have largely committed the good name of the society, a sacred trust. You must endeavor to hold up their hands and to assist them by your loyal support. Honest, or well meaning criticism is always desirable in any organization. There may be matters that it is desirable to bring to the attention of the president; if so he will be glad to carefully consider them.

Each and every member of the society must feel that he is personally responsible for the good name and the efficiency of his organization.

For one hundred and eighteen years this society has stood for all that is best in our profession. See to it, gentlemen, that this high standard is maintained. The profession and the public expect it of you. The steady growth of years has made the organization of our society strong. Its power for good is unlimited, but it remains with you to make this power effectual.

In the consideration of the questions of which I have spoken, which properly come within the limits of our executive session, we must not forget the importance of our scientific work. It is equally as essential to the society's existence.

Here there is much for each one of us to do. None should lack for inspiration and each should have the confidence to present his own best work, yet he who may speak from this rostrum should have something of new interest to say to his audience, and, as there are many waiting to follow, should say it briefly. His choice of subject covers everything that can in any way be done for the hygienic welfare of the community or for the scientific advancement of his profession.

Though it would seem that much has been said on every subject, what large fields still lie fallow!

Of the many unsolved problems, take that of cancer. The primal cause and nature of cancer we do not yet understand. Its prophylaxis is but

vague and shadowy. Its unchecked course and ending is, alas, only too well known. Modern investigation is building up a huge pile of more or less unrelated facts, like the bits of a most complicated puzzle, and we are waiting for the genius who will arrange them, fit in the missing pieces, and show us the completed picture, beautiful in its simplicity.

But however fragmentary our knowledge may be we do know positively some things. We know that in the beginning cancer is a local condition and that if it be then completely removed, it does not return. We know that only a little later, it will have crept out through the lymph-vessels and the blood to an undeterminate extent and that then we can only hope—with our present knowledge—for a palliation, not a cure.

One of the important matters worthy the attention of this society is the acquirement and the dissemination of knowledge among the people of the necessity for the early recognition of the signs leading toward the early diagnosis of cancer of the uterus. This disease kills many thousand women each year and kills many who might be saved, were more done to combat the wide spread feeling among women, and I am sorry to say that an occasional physician also feels so, that an irregular bleeding from the uterus as one approaches the menopause is only an incident in the change of life, to be borne without complaint as a disagreeable episode in an uncomfortable period.

It is true that irregular hemorrhage or other discharge from the uterus at this time of life is often the result of less serious or temporary causes, but the gravity of the alternate possibility is so great and the consequences of delay so fatal that we cannot afford to let the woman take the risk by neglecting her.

We know that in Germany where the profession and the people have been trained to look for the earliest indication of uterine cancer the operative results obtained are far ahead of anything seen here. This is not entirely because of better surgery, but because of earlier recognition. We know the signs, we know the means for reaching an earlier diagnosis, we know the dangers of delay. What excuse have we then for letting these women go until the time for successful intervention has passed? Much can be done if each one of the members of this great society will make it his duty to spread among his women patients knowledge of the early symptoms and knowledge that cancer in its very early stages is curable.

The known fields of medicine, however, apparently well mapped out, have many spots where the patient explorer will yet uncover unexpected values. From the pinnacles of present achievement, we look out over the future and through the rifts in the clouds of the unknown catch glimpses of fertile valleys and giant peaks that inspire with the invincible determination to win their untrodden heights. We know that

even where the way seems blocked by unscalable cliffs of difficulty paths to the summit may yet be found. Even where, stretching almost to infinity, there seems to be only vacant mist covered sea, the fogs may yet lift and reveal lands of unimagined wonders.

THE MINERAL SPRINGS OF SARATOGA.*

By GEORGE H. FISH, M.D.,
SARATOGA SPRINGS.

THE wonder and interest of the mineral springs at Saratoga and the reputation they have enjoyed for so many decades as health restoring fountains has been greatly stimulated in the past three years by reason of their purchase by the state of New York and the establishment of a state reservation at Saratoga. During the last ten years the therapeutic value of some of the older springs greatly suffered by reason of the prolonged and continued pumping of the waters for the purpose of extracting their carbonic acid gas and selling it, allowing the waters to go to waste. Happily, since the acquisition of these spring properties by the state and the cessation of pumping, the springs, which had in a measure deteriorated, have been restored to their former strength both in mineral constituents and carbonic acid gas, so that they now flow with all their old vigor and may be prescribed with the knowledge that therapeutic results will be constant, while a few new springs have been discovered possessing therapeutic properties equal to those of the older and more famous waters.

Saratoga is fortunate in possessing many springs of more varied constituents than any other known spa, and all these within a radius of three or four miles. From a therapeutic viewpoint the waters may be divided into five classes, alkaline, saline cathartic, chalybeate, sulphurous, and alterative.

The alkaline waters are particularly valuable for patients who suffer from the so-called uric acid diathesis, hyperacidity of the stomach, rheumatic and gouty conditions. The unvarying alkalinity of the blood after ingestion of these waters is the most striking proof of the diffusive power of the alkaline salts which they contain, and which is very great, their absorption taking place soon after ingestion. They stimulate the alkaline secretions of the liver, pancreas and intestinal glands, and, taken on an empty stomach, stimulate the flow of gastric juice, but diminish its acidity.

The alkaline waters are valuable in catarrhal conditions, because they increase the flow of alkaline mucous. As a vehicle for the administration of certain drugs, particularly the iodides, these waters excel anything I have ever used.

* Read at the annual meeting of the Medical Society of the State of New York, at Albany, April 18, 1912.

Extremely large doses of the iodides may be administered, dissolved in one of these waters, with no gastric disturbance following.

The saline cathartic waters, of which the most widely known are the Congress, Hathorn and Cœsa, formerly the Carlsbad, are of great value, not only as purgatives, but in conditions of torpid liver, and, properly administered, as gentle laxatives. They stimulate the intestinal and biliary secretions and excite peristalsis. One great advantage obtained by the judicious use of these waters instead of the various laxatives and cathartics is the absence of any irritating effect upon the gastric or intestinal mucosa.

In this regard they also excel the foreign cathartic waters, which depend for their action upon the sulphates which they contain, and which if long continued set up inflammation of the alimentary tract, while the Saratoga saline waters depend more on the large amount of chlorides and the bicarbonates which they contain, and may be administered for long periods of time without fear of such consequences. These waters also have a diuretic action and for this purpose are best prescribed in small quantities, frequently repeated.

The more or less prevalent belief that the only value of these cathartic waters consists in evacuating the bowels comes far from doing justice to their therapeutic merit. In addition to the purely laxative or cathartic action, these alkaline salines exert a true tonic effect upon the mucous membranes and blood and so upon the whole economy, aiding in the elimination of effete products by other emunctories besides the bowel, and promoting metabolism by their influence on the capillary circulation and lymph streams, and their stimulation or depression of the secreting membranes and glandular structures.

The chalybeate waters are, without doubt, of very great value in anæmia and chlorosis; in fact, whenever an iron tonic is indicated. The small amount of iron contained in these waters has made many skeptical as to their therapeutic value, but observation of a few test cases by any clinician would convince the most skeptical as to their value. I quote from five test cases made by the late Dr. Thomas Burchard and published in his able essay on "The Saratoga Mineral Waters." Two patients were selected as representing perfect health; the other three, one male and two female, suffering from severe anæmia. One glass of the mineral water was prescribed four times daily, the Columbian water being selected for the test. The two patients representing health were obliged to discontinue the use of the water after one week's use on account of severe headaches it produced, in one case accompanied by epistaxis. In the three patients suffering from anæmia, sphygmographic tracings showed increase of the power and rhythm of the heart beats and microscopical examination in each case showed an increase in the number of

red corpuscles and favorable change in their character.

The mere presence of iron in a natural water is no evidence of its medicinal usefulness, but in the ferruginous waters of Saratoga Springs the iron exists in such chemical combination and together with the natural carbonic acid gas as to be of much greater value therapeutically than many times the amount of iron administered in other form.

There are several so-called sulphur springs located at Saratoga, the waters of which are impregnated with sulphureted hydrogen. Their value, particularly for bathing in certain skin diseases, has been long established. Taken internally, they produce some alterative effects and are so used in skin diseases and so-called scrofulous conditions.

The alterative waters are also to a mild extent saline cathartic; they stimulate the glandular secretions of the liver and intestines, aid in dissolving renal and hepatic calculi and exert a diuretic action and seem to promote general metabolism and aid in the excretion of effete products. These waters have proved of particular advantage in the treatment of diabetes, nephritis, eczema, rheumatism and rachitis in children and many wasting diseases where glandular secretions are sluggish and an alterative effect is desired.

The great value of all the mineral waters of Saratoga Springs lies, not so much in the quantity of their different ingredients, as it does in the particular combination in which Nature presents them to us. The presence also of natural carbonic acid gas in such large quantities adds much to their potency, this gas being particularly effective in certain gastric conditions, acting as a stimulant to an atonic gastric mucous membrane, and as an anæsthetic to an irritable one. It also exerts some stimulating effect after absorption into the blood stream.

It should be borne in mind by the layman, as well as the physician, that these mineral waters are medicinal agents capable of producing ill results as well as beneficial if injudiciously used, and that they should only be used upon the advice of a physician. The practice, so often followed by many, of visiting Saratoga Springs and indulging freely in the waters indiscriminately and without medical advice, should be condemned, and I have frequently seen patients made ill simply by this reckless use of the mineral waters. In making an arbitrary classification of the waters it is done with a full realization that no hard and fast line may be drawn, as many of the alkaline waters are also saline, most of the saline, alterative, as are also the sulphur waters. Patients suffering from certain morbid conditions, such as extensive arterial degeneration, plethora and hæmophilia, should avoid the iron waters, while those afflicted with acute inflammatory conditions of the stomach or intestines and pyloric obstruction, and, generally

speaking, organic cardiac disease, should not employ the saline mineral waters.

As is well known, the benefit to be derived from the use of any natural mineral water is greatly enhanced by the patient sojourning near the location of the spring for a few weeks at least, and taking what is termed "the cure." The complete change of surroundings, absence of the cares of business and domestic life, the beneficial effect, in the case of Saratoga, of the bracing atmosphere and unexcelled climate, the use of a judicious dietary, combined with proper rest, exercise, recreation and bathing, all combined with the drinking of the waters as carefully prescribed by a physician—all these are factors which aid in ridding a patient of his disease.

Several of the springs of Saratoga have bath-houses on their grounds, where patients may enjoy the benefit of a bath in natural mineral water highly impregnated with carbonic acid gas. The therapeutic value of these baths, the stimulating and beneficial effect of the external application of carbonic acid gas in this way is recognized and employed to a much greater extent abroad than here, but with the advantages and facilities to be obtained in our own country, there is no need for so great an annual pilgrimage to the foreign spas, were Saratoga Springs only more generally appreciated by the practitioner of medicine as well as the layman. One of the bath-houses in Saratoga Springs is ranked as the equal of any in this country, and here are facilities not only for mineral baths, but also Turkish, Russian and Swedish baths, as well as competent scientific massage treatment and the application of the electro-therapy. The bathing feature at Saratoga has never received the attention from the medical fraternity which it deserves. In the sulphur and other waters we have very powerful remedial agents when applied in the form of bath, which are surprisingly effective in specific and skin disease and in rheumatic and allied conditions. The exhilaration experienced after a bath in these mineral waters so highly charged by carbonic acid gas must be felt to be fully appreciated, but its tonic effect in neurotic and neurasthenic patients and those suffering from fatigue from overwork, etc., is very gratifying to both physician and patient.

In specific skin disease the effect of the baths in these Saratoga waters is superior to that obtained at Hot Springs, and many are the cases of rheumatism which, after various sojourns at the other famous spas, have been greatly benefited by the combined use of these waters internally and for bathing.

Since the establishment of a state reservation at Saratoga several beautiful and extensive public parks in which are located some of the mineral springs have been laid out or acquired by the state or village. One of these comprises the former Canfield Park, with its magnificent Italian gardens and beautiful landscapes, in which is located the old club house, for many years

famed as the center of gaiety for the sporting classes, where could be seen hundreds of handsomely gowned women and as many cultured men playing with Dame Fortune for fabulous stakes and crowding the superb dining hall. This beautiful and artistic building is now the Casino, or Kursall, and is thronged during the season by those seeking health, rest and recreation.

The natural advantages of Saratoga Springs as a health resort are too well known to need extolling here. Situated at the foothills of the Adirondacks, blessed not only with her springs, but with the most invigorating, health-giving atmosphere anywhere to be found, and sunshine almost every day of the year, at an altitude high enough to insure dry, bracing air, yet not the extreme altitude of the mountains, where many classes of patients cannot go, the fresh morning air laden with the exhalations from many pine and balsam woods, with wide, clean, beautifully shaded streets and avenues, and hundreds of miles of state roads radiating in different directions from the village, with ample accommodations for her visitors and some of the largest and most beautiful hotels in the land, Saratoga Springs is unequalled as a resort for the health-seeker.

NOTICE.

Albany, N. Y., January 20, 1913.

The medical reading room in the State Library was opened to the public on January 15, with about 12,000 books on its shelves available for consultation and for lending as hereinafter stated. The State Library regularly receives between 500 and 600 domestic and foreign medical periodicals which are on file in the medical reading room. For the present the hours are from 9 A. M. to 6 P. M., and on Tuesdays and Thursdays the library is open until 10 P. M.

Medical books may be borrowed from the State Library for two weeks with option of renewal for an equal time, by any licensed physician in the state, by full time instructors on the faculty of any medical college, members of the house staff of any hospital, registered and certified nurses, or any one engaged in medical work who offers suitable references and credentials. The library lends its books through local libraries or schools whenever possible. In the rare cases where there is no local library or school, loans are made direct on personal application or on a written order, assuming full responsibility for books borrowed. All transportation charges are paid by the borrowing library or individual.

It will be more satisfactory to come to Albany and use the library than to borrow books from a distance. Advance notice as to what books are desired for consultation or what subjects are to be studied will enable the librarian to get the books together and have them ready at a stated day and hour. Information will also be given as to books or articles on specific topics.

J. I. WYER, JR.,

Director, New York State Library.

The Medical Society of the State of New York.

17 West 43d Street, New York.

March 15, 1913.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York will be held on April 28, 1913, at 8.00 P. M., in Convention Hall, Rochester, N. Y.

JOHN F. W. WHITBECK, M.D., *President*,
WISNER R. TOWNSEND, M.D., *Secretary*.

BY-LAWS.

CHAPTER III.

House of Delegates.

Sec. 8. The following shall be the order of business at the meetings of the House of Delegates:

1. Calling the Meeting to Order.
2. Roll call by the Secretary.
3. Reading of the Minutes of the previous meeting.
4. President's report.
5. Annual report of the Council.
6. Report of the Secretary.
7. Report of the Treasurer.
8. Reports of Standing Committees.
9. Reports of Special Committees.
10. Unfinished business.
11. New business.

Action on Report of Committee on Revision of By-Laws in accordance with Article IX. of the Constitution and Chapter XI. of the By-Laws.

Action on notice presented at last meeting to change time and place of annual meeting. See Constitution, Article VI., Section 1. Introduced by Dr. E. Eliot Harris and duly seconded.

Sec. 9. The Officers and Committees of the Society to be elected by the House of Delegates shall be elected at an adjournment of the annual meeting of the House of Delegates, which adjourned meeting shall be held at a convenient hour on the first day of the annual meeting of the Society.

At the election of officers to be held on Tuesday (time to be selected at the meeting on Monday night), the following officers are to be elected:

A President to succeed Dr. John F. W. Whitbeck.
A First Vice-President to succeed Dr. W. Stanton Gleason.

A Second Vice-President to succeed Dr. William Francis Campbell.

A third Vice-President to succeed Dr. R. Paul Higgins.

A Secretary to succeed Dr. Wisner R. Townsend.

A Treasurer to succeed Dr. Alexander Lambert.

A Chairman of the Committee on Scientific Work to succeed Dr. Thomas J. Harris.

A Chairman of the Committee on Public Health, to succeed Dr. J. M. Van Cott.

A Chairman of the Committee on Legislation, to succeed Dr. Robert P. Bush.

A Chairman of the Committee on Arrangements, to succeed Dr. Wesley T. Mulligan.

Six Delegates to the American Medical Association for two years, to succeed Drs. A. T. Bristow, H. L. Elsner, E. E. Cornwall, J. W. Fleming, W. T. Mulligan, E. A. Vander Veer.

Six alternates to the American Medical Association for two years, to succeed Drs. W. B. Hanbidge, J. C. MacEvitt, O. Pfaff, A. Walter Suiter, W. W. Strang, S. W. S. Toms.

Only members of two years' standing in the American Medical Association are eligible for the position of Delegate or Alternate.

March 15, 1913.

The regular annual meeting of the Medical Society of the State of New York will be held on April 29, 1913, at 11 A. M., in Convention Hall, Rochester, N. Y.

JOHN F. W. WHITBECK, M.D., *President*.
WISNER R. TOWNSEND, M.D., *Secretary*.

BY-LAWS. CHAPTER II.

Meetings.

SECTION 1. Each member in attendance at the annual session of the Society shall enter his name and the name of his county society in the register to be kept by the Secretary of the Society for that purpose. No member shall take part in any of the proceedings at an annual session until he shall have complied with the provisions of this section.

SEC. 2. All registered members may attend and participate in the proceedings and discussions of the general meetings of the Society and of the sections.

REGISTRATION.

The Bureau of Registration and Information will be located in Convention Hall. It will be in charge of the Committee on Arrangements. All desiring information or assistance of any kind should apply to the Bureau.

OFFICERS FOR 1912-1913.

President—John F. W. Whitbeck, Rochester.

First Vice-President—W. Stanton Gleason, Newburgh.

Second Vice-President—William Francis Campbell, Brooklyn.

Third Vice-President—R. Paul Higgins, Cortland.

Secretary—Wisner R. Townsend, 17 West 43d Street, New York.

Treasurer—Alexander Lambert, 17 West 43d Street, New York.

Counsel—James Taylor Lewis, 40 Exchange Place, New York.

STANDING COMMITTEES.

Committee on Scientific Work.

Thomas J. Harris, Chairman, New York City.

Committee on Legislation.

R. P. Bush, Chairman, Horseheads.

Committee on Public Health.

J. M. Van Cott, Chairman, Brooklyn.

Committee on Arrangements.

Wesley T. Mulligan, Chairman, Rochester.

COUNCILORS.

First District—D. B. Hardenbergh, Middletown.

Second District—Walter B. Chase, Brooklyn.

Third District—John B. Harvie, Troy.

Fourth District—Fred G. Fielding, Glens Falls.

Fifth District—James K. Stockwell, Oswego.

Sixth District—Frederick M. Miller, Binghamton.

Seventh District—Herbert B. Smith, Corning.

Eighth District—Henry A. Eastman, Jamestown.

Committee on Arrangements.

Wesley T. Mulligan, Chairman; Myron B. Palmer, Ralph R. Fitch, Charles O. Boswell, Bradford A. Richards, Albert C. Snell, Owen E. Jones, Carl A. Huber.

SUB-COMMITTEES.

Committee on Registration and Information.

Albert C. Snell, Chairman; Bradford A. Richards, Myron B. Palmer.

Committee on Reception and Entertainment.

Ralph R. Fitch, Chairman; Myron B. Palmer, Charles O. Boswell.

Committee on Halls.

Owen E. Jones, Chairman; Charles O. Boswell.

Committee on Scientific and Commercial Exhibits.

Myron B. Palmer, Chairman; Carl A. Huber.

SCIENTIFIC PROGRAM.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.

Thomas J. Harris, M.D., Chairman, New York.
Henry L. Elsner, M.D., Syracuse.
Parker Syms, M.D., New York.
And the Officers of the Sections.

BY-LAWS, MEDICAL SOCIETY OF THE STATE OF NEW YORK,
CHAPTER X.

SECTION 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by consent.

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in THE NEW YORK STATE JOURNAL OF MEDICINE.

SEC. 3. Any distinguished physician of a foreign country or a physician not resident of this State, who is a member of his own State Association, may become a guest during any annual session upon the invitation of the President or officers of the Society, and may be accorded the privilege of participating in all of the scientific work of the session.

TUESDAY, APRIL 29TH,
11 A. M.

107th Annual Meeting of the Medical Society of the State of New York.

Convention Hall, 11 A. M.

General Meeting open to the public
Invocation by Rev. R. R. M. Converse, LL.D.
Calling the Society to order.
Address of welcome by the Chairman of the Committee on Arrangements.
Reading of the minutes of the last meeting by the Secretary.
Reports of special committees.
Address of welcome by Hon. Hiram H. Edgerton, Mayor of Rochester.
Address, by Hon. Robert M. Searle, President, Chamber of Commerce.
Annual Oration on Medicine, "Certain Elementary Concepts in Education Applied to Medicine," Prof. John G. Adami, M.D., F.R.S., McGill Univ., Montreal.
Address by the President, John F. W. Whitbeck, M.D., Rochester.

8.30 P. M.

General Meeting, Convention Hall. Open to the public.

"Prevention and Cure of Cancer," Parker Syms, M.D., New York.

2 P. M.

Meeting of Five Sections.

Section on Medicine—Headquarters, Powers' Hotel; meeting at same place.

Section on Surgery—Headquarters, Hotel Seneca; meeting at Convention Hall.

Section on Eye, Ear, Nose and Throat—Headquarters, Whitcomb Hotel; meeting at same place.

Section on Pediatrics—Headquarters, Hotel Rochester; meeting at same place.

Section on Obstetrics and Gynecology—Headquarters, Hotel Seneca; meeting at same place.

SECTION PROGRAMS.

The order of reading papers will be in accordance with the printed program.

SECTION ON MEDICINE.

Chairman, DeLancey Rochester, M.D., Buffalo.
Secretary, Norman K. MacLeod, M.D., Buffalo.
Place of Meeting—Powers' Hotel.

TUESDAY, APRIL 29TH,
2 P. M.

SYMPOSIUM ON DISEASES OF THE CIRCULATORY SYSTEM.

1. "Etiology of Cardiac Diseases," Henry C. Bushwell, M.D., Buffalo.

2. "Pain and Other Clinical Manifestations of Myocarditis," Alexander Lambert, M.D., New York.

3. "The Symptomology and Diagnosis of Cardiac Involvement in Syphilis," Harlow Brooks, M.D., New York.

4. "The Relation of Internal Secretions to the Circulation," Nelson G. Russell, M.D., and Carroll J. Roberts, M.D., Buffalo.

5. "The Polygraph," George W. Ross, M.D., Toronto, Ont., by invitation.

6. "Cardio-sclerosis," Louis Faugères Bishop, M.D., New York.

Discussion of these papers to be opened by Benjamin W. Stearns, Unadilla, Robert H. Halsey, M.D., New York, and Hubert Schoonmaker, M.D., Clifton Springs.

7. "Association of Uterine Growths with Goitre; typical and atypical Exophthalmic Goitre," Henry L. Elsner, M.D., Syracuse.

8. "Benzol Treatment of Leukæmia," J. Meyer, M.D., Albany.

WEDNESDAY, APRIL 30TH,
9 A. M.

JOINT SESSION OF THE SECTION ON MEDICINE WITH THE SECTION ON SURGERY.

SYMPOSIUM ON DUODENAL ULCER.

"Etiology and Morbid Anatomy," Marshall Clinton, M.D., Buffalo.

9. "Diagnosis and Prognosis," James T. Pilcher, M.D., Brooklyn.

10. "Non-Surgical Treatment," Charles G. Stockton, M.D., Buffalo.

"Surgical Treatment," John B. Murphy, M.D., Chicago, Ill., by invitation.

"Complications," John B. Harvie, M.D., Troy.
Discussion to be opened by Allen A. Jones, M.D., Buffalo, and Max Einhorn, M.D., New York.

11. "Typhlo-albuminuria," Heinrich Stern, M.D., New York.

12. "Cardiospasm, what it is; what it seems to be," Anthony Bassler, M.D., New York.

WEDNESDAY, APRIL 30TH.

2 P. M.

13. "Co-operation of State Medical Societies in Public Health Education," Eleanora S. Everhard, M.D., Dayton, Ohio, Chairman A. M. A. Committee for Public Health Education Among Women, by invitation.

14. "Industrial Disease Reporting Law," Leonard W. Hatch, M.D., Albany, by invitation.

Discussion to be opened by Mr. John Shillady, Buffalo, by invitation.

15. "Treatment of Hemorrhage by Powdered Normal Serum," G. H. A. Clowes, M.D., Buffalo, by invitation.

16. "Experience with Neo-salvarsan at the Harlem Hospital," Howard Fox, M.D., New York.

17. "Results of Salvarsan Therapy in Malignant Syphilis Precox, Syphilide of the Palms and Gumma of the Tongue," Herman F. L. Ziegel, M.D., New York.

18. "The Present Obligation of the General Practitioner Regarding Syphilis as to His Patient and as to the Public," E. Wood Ruggles, M.D., Rochester.

19. "Note on Frequency of Drug Eruptions," George H. Fox, M.D., New York.

20. "Lantern Demonstration of Skin Diseases," Grover W. Wende, M.D., Buffalo.

THURSDAY, MAY 1ST.

9 A. M.

SYMPOSIUM ON TUBERCULOSIS.

21. "Examination of Those Exposed as a Factor in the Prevention and Relief of Tuberculosis," John H. Pryor, M.D., Buffalo.

22. "Auscultation at the Acromion Process; Its Significance in Apical Disease," Robert Abrahams, M.D., New York.

23. "Treatment of Pulmonary Tuberculosis by Artificial Pneumo-thorax," J. Woods Price, M.D., Saranac Lake.

24. "Tuberculin Treatment," Edward R. Baldwin, M.D., Saranac Lake.

25. "Control of Advanced Cases," Hermann M. Biggs, M.D., New York.

26. "Incidence of Renal Involvement in Pulmonary Tuberculosis," Henry S. Bernstein, M.D., Albany, by invitation.

Discussion to be opened by John M. Swan, M.D., Rochester and S. Adolphus Knopf, M.D., New York.

SECTION ON SURGERY.

Chairman, Martin B. Tinker, M.D., Ithaca.

Secretary, Willis E. Bowen, M.D., Rochester.

Place of Meeting—Convention Hall.

TUESDAY, APRIL 29TH.

2 P. M.

GENERAL SURGERY.

1. "Intestinal Obstruction," William D. Johnson, M.D., Batavia.

2. "Conservation Treatment of the Injuries of the Hand," Vacil D. Bozovsky, M.D., Dunkirk.

3. "Possible Errors in the Diagnosis of Abdominal Cancer—A Plea for Exploratory Laparotomy. Illustrative Cases." William S. Bainbridge, M.D., New York.

4. "Early Diagnosis of Malignant Tumors, Particularly as to the Wisdom and Value of Exploratory Operations," William B. Coley, M.D., New York.

5. "Operations Pertaining to the Bile Passages," Louis F. O'Neill, M.D., Auburn.

Discussion by Frederick W. Zimmer, M.D., Rochester, and Mark O'Meara, M.D., Kingston.

6. "Treatment of Large Ventral Hernia by Inversion," Irving S. Haynes, M.D., New York.

7. "Uses of Radium in Surgery," Howard A. Kelly, M.D., Baltimore, by invitation.

WEDNESDAY, APRIL 30TH.

9 A. M.

JOINT SESSION OF THE SECTION ON SURGERY WITH THE SECTION ON MEDICINE.

SYMPOSIUM ON DUODENAL ULCER.

8. "Etiology and Morbid Anatomy," Marshall Clinton, M.D., Buffalo.

"Diagnosis and Prognosis," James T. Pilcher, M.D., Brooklyn.

"Non-Surgical Treatment," Charles G. Stockton, M.D., Buffalo.

9. "Surgical Treatment," John B. Murphy, M.D., Chicago, Ill., by invitation.

10. "Complications," John B. Harvie, M.D., Troy.

Discussion to be opened by Allen A. Jones, M.D., and Max Einhorn, M.D., New York.

WEDNESDAY, APRIL 30TH.

2 P. M.

ORTHOPEDIC SURGERY AND SURGERY OF THE NERVOUS SYSTEM.

11. "Surgery of the Brain," Algernon T. Bristow, M.D., Brooklyn.

12. Subject to be announced, Otto G. T. Kiliani, M.D., New York.

13. Title to be announced, Roswell Park, M.D., Buffalo.

14. "Prognosis in Infantile Paralysis," Wisner R. Townsend, M.D., New York.

15. "Importance of the Treatment of Weak Feet in Childhood," Brainerd H. Whitbeck, M.D., New York.

16. "Treatment of Fixed Scoliosis by the Abbott Jacket," Ralph R. Fitch, M.D., and Howard L. Prince, M.D., Rochester.

Discussion by Samuel Kleinberg, M.D., New York.

THURSDAY, MAY 1ST.

9 A. M.

GENITO-URINARY SURGERY.

17. "Surgery of the Prostate," Hugh H. Young, M.D., Baltimore, Md., by invitation.

18. "Some Aspects in Relation to the Chronic Gonorrhoeic, from the Standpoint of Surgery and Eugenics," James N. Vander Veer, M.D., Albany.

19. "X-ray in Genito-Urinary Surgery," Eugene W. Caldwell, M.D., and Harry M. Imboden, M.D., New York.

20. "The Surgery of the Bladder," Paul M. Pilcher, M.D., Brooklyn.

21. "Accidental Bladder Injuries in Hernia Surgery, Based Upon 2,000 Personal Operations," William B. DeGarmo, M.D., New York.

SECTION ON EYE, EAR, NOSE AND THROAT.

Chairman, John E. Weeks, M.D., New York.
Secretary, Thomas H. Halsted, M.D., Syracuse.
Place of Meeting—Whitcomb Hotel.

TUESDAY, APRIL 29TH.

2 P. M.

1. "Squint and Its Correction," John J. O'Brien, M.D., Schenectady.
2. "Importance of Ophthalmological Examinations in Immigrants," Martin Cohen, M.D., New York.
3. "Experiments on the Action of Certain Ocular Muscles," Lucien Howe, M.D., Buffalo.
4. "Some Uses of Cyanide of Mercury in Ophthalmology," Charles B. Meding, M.D., New York, by invitation.
5. "Central Scotoma and Blind Spot Anomalies; Their Clinical Significance," Percy Fridenberg, M.D., New York.
6. "The Surgical Treatment of High Myopia," Walter E. Lambert, M.D., New York.

WEDNESDAY, APRIL 30TH.

9 A. M.

Symposium on the Hypophysis:

7. "The Physiology of the Hypophysis," Prof. Sutherland Simpson, Ithaca, by invitation.
8. "Ocular Disturbances of Hypophyseal Diseases," Arnold Knapp, M.D., New York.
9. "Intra-nasal Approach to the Hypophysis," Lewis A. Coffin, M.D., New York.
10. "Surgical Aspects of the Pituitary Question," Harvey W. Cushing, M.D., Boston, Mass., by invitation.
11. "Demonstration of a Model Illustrating the Technique of the Intra-nasal Operation on the Lachrymal Apparatus," Sidney Yankauer, M.D., New York.
12. "History of a Case of Dacryocystitis presenting several Complications, including Orbital and Optic Neuritis," Albert C. Snell, M.D., Rochester.

WEDNESDAY, APRIL 30TH.

2 P. M.

13. "The Economic and Social Aspect of Deafness," Harold Hays, M.D., New York.
14. "The Conservative Treatment of Chronic Aural Suppuration," Robert L. Loughran, M.D., New York.

SYMPOSIUM OF LABYRINTHITIS.

15. "Serous and Suppurative Labyrinthitis, Differential Diagnosis," Irving W. Voorhees, M.D., New York.
16. "Indications for Operative Interference in Labyrinthitis," Frederick Whiting, M.D., New York.
17. "Technique of the Labyrinth Operation," Edward B. Dench, M.D., New York.
18. "Tubercular Affections of the Ear," Thomas H. Farrell, M.D., Utica.
19. "Cleft Palate," J. M. Ingersoll, M.D., Cleveland, Ohio, by invitation.

THURSDAY, MAY 1ST.

9 A. M.

20. "Acute Thyroiditis as a Complication of Acute Tonsillitis," Clement F. Theisen, M.D., Albany.
21. "Vincent's Angina," Gerhard H. Cocks, M.D., New York.

22. "Indications for Operation on the Nasal Septum," James F. McCaw, M.D., Watertown.

23. "Experiences with Direct Laryngoscopy, Bronchoscopy and Esophagoscopy," John McCoy, M.D., New York.

24. "Nasal Obstruction as a Predisposing Factor in the Etiology of Tuberculosis," James E. McCambridge, M.D., Poughkeepsie.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Chairman, William M. Brown, M.D., Rochester.
Secretary, Ross McPherson, M.D., New York.
Place of Meeting—Hotel Seneca.

TUESDAY, APRIL 29TH.

2 P. M.

1. "Some Diseases of the Vulva and Their Treatment," Samuel M. Brickner, M.D., New York.
2. "Two Unusual Cases with Presentation of Specimens," Eugene W. Belknap, M.D., Syracuse, by invitation.
3. "Invalidism in Women from Prolonged Metrorrhagia or Menorrhagia," Walter B. Chase, M.D., Brooklyn.
4. "Contraction Ring Dystocia," Paul T. Harper, M.D., Albany.
5. "Pituitrin in Obstetrics," James K. Quigley, M.D., Rochester.
Discussion by Ross McPherson, M.D., New York.
6. "Central Laceration of the Perineum," Albert G. Swift, M.D., Syracuse, by invitation.

WEDNESDAY, APRIL 30TH.

9 A. M.

7. "Cancer of the Uterus, Importance of Early Diagnosis," LeRoy Broun, M.D., New York.
8. "Nephrocoloptosis in Women," Howard W. Longyear, M.D., Detroit, Mich., by invitation.
Discussion by James Gregory Mumford, M.D., Clifford Springs.
9. "The Conservative Treatment of Puerperal Eclampsia," E. Gustav Zincke, M.D., Cincinnati, O., by invitation.
Discussion by Franklin S. Newell, M.D., Boston, Mass., by invitation and Walter B. Chase, M.D., Brooklyn.
10. "Emptying the Uterus as a Method of Treatment of Puerperal Eclampsia," Reuben Peterson, M.D., Ann Arbor, Mich., by invitation.
11. "A Preliminary Report on the Treatment of Toxæmias of Pregnancy with Placental Serum," Abraham J. Rongy, M.D., New York.

WEDNESDAY, APRIL 30TH.

2 P. M.

12. "The Principles Underlying the Successful Treatment of Sterility in Women," Edward Reynolds, M.D., Boston, Mass., by invitation.
13. "The Role of Ovarian Disease in the Production of Sterility," George W. Kosmak, M.D., New York.
14. "The Stigmata of Decadence in Gynecology," Robert T. Morris, M.D., New York.
15. "The Need of Individualization in Obstetrics," Franklin S. Newell, M.D., Boston, Mass., by invitation.
16. "Cesarean Section," Asa B. Davis, M.D., New York.

THURSDAY, MAY 1ST.

9 A. M.

- 17. "Dysmenorrhœa," J. Henry Carstens, M.D., Detroit, Mich., by invitation.
Discussion by Aaron B. Miller, M.D., Syracuse.
- 18. "Methods of Minimizing the Mortality and Morbidity in Abdominal Sections for Pelvic Disease," George W. Crile, M.D., Cleveland, by invitation.
- 19. "Ectopic Pregnancy," Edward W. Mulligan, M.D., Rochester.
- 20. "Efficient Methods in the Treatment of Placenta Prævia," James A. Harrar, M.D., New York.
- 21. "Human Serum Treatment for Hemorrhagic Diseases of the New-born," John E. Welch, M.D., New York.

SECTION ON PEDIATRICS.

Chairman, Henry L. K. Shaw, M.D., Albany.
Secretary, Thomas S. Southworth, M.D., New York.
Place of Meeting—Hotel Rochester.

TUESDAY, APRIL 29TH.

2 P. M.

- 1. "The Wassermann Reaction in Various Conditions in Children," L. Emmett Holt, M.D., New York.
Discussion by Linnaeus E. La Fétra, M.D., New York and A. A. Thibaudeau, M.D., Buffalo, by invitation.
- 2. "Pulmonary Tuberculosis in Childhood," Louis C. Ager, M.D., Brooklyn.
Discussion by S. Adolphus Knopf, M.D., New York, and Edward G. Whipple, M.D., Rochester.
- 3. "Rational Treatment of Hemorrhagic Affections in Children," LeGrand Kerr, M.D., Brooklyn.
Discussion by John E. Welch, M.D., New York.
- 4. "Diphtheria," Joseph R. Culkin, M.D., Rochester.
Discussion by Matthias Nicoll, Jr., M.D., New York, and Jerome S. Leopold, M.D., New York.
- 5. "Recurrent Vomiting in Children," A. Clifford Mercer, M.D., Syracuse.
Discussion by George E. Clark, M.D., Skaneateles, Henry W. Titus, M.D., New Rochelle and Charles L. Hincer, M.D., Rochester.
- 6. "Differential Diagnosis of the Paralyzes Occurring in Early Life," Henry A. Gribbon, M.D., Poughkeepsie.
Discussion by Walter D. Ludlum, M.D., Brooklyn, and Floyd M. Crandall, M.D., New York.

WEDNESDAY, APRIL 30TH.

9 A. M.

- 7. "Some Observations on Infant Feeding," Harry Rulison, M.D., Albany.
- 8. "Infant Feeding with Undiluted Cow's Milk," William B. Hanbidge, M.D., Ogdensburg.
- 9. "A Practical Study of Goat's Milk in Infant Feeding as Compared with Cow's Milk," DeWitt H. Sherman, M.D., Buffalo.
- 10. "Infant Feeding from a New Standpoint," Godfrey R. Pisek, M.D., New York.
Discussion on papers 7, 8, 9 and 10 by Charles R. Witherspoon, M.D., Rochester, J. Roberts Johnson, M.D., Syracuse, and George H. Van Gaasbeck, M.D., Kingston.
- 11. "Food Idiosyncrasies," Jacob S. Otto, M.D., Buffalo.
Discussion by Edward J. Wynkoop, M.D., Syracuse.
- 12. "Use and Abuse of Sugar in the Diet of Children," Elias H. Bartley, M.D., Brooklyn.
Discussion by Louis C. Ager, M.D., Brooklyn.

WEDNESDAY, APRIL 30TH.

2 P. M.

- 13. "Social Pediatrics," Ira S. Wile, M.D., New York.
Discussion by Royal Storrs Haynes, M.D., New York,

Linnaeus E. La Fétra, M.D., New York, and Godfrey R. Pisek, M.D., New York.

- 14. "The Physician and the Mentally Defective Child," Isabelle T. Smart, M.D., New York.
Discussion by Mary Sutton Macy, M.D., New York.
- 15. "Some Neglected Aspects of the Problem of Infant Mortality," Philip Van Ingen, M.D., New York.
Discussion by Godfrey R. Pisek, M.D., New York.
- 16. "Nerves and the Nursing Mother," Conway A. Frost, M.D., Utica.
Discussion by Florence Staunton, M.D., Utica, and Cornelia White Thomas, M.D., Rochester.
- 17. "The Value of Discipline in the Care of the Spoiled Child," T. Wood Clarke, M.D., Utica.
Discussion by Mr. Herbert Weet, Rochester, by invitation.

THURSDAY, MAY 1ST.

9 A. M.

- 18. "Care of the New Born," Carl G. Leo-Wolf, M.D., Niagara Falls.
Discussion by John A. Ragone, M.D., Buffalo, and Agnes E. Page, M.D., Albany.
- 19. "X-ray as a Means of Diagnosis in Intussusception," Irving M. Snow, M.D., Buffalo.
Discussion by Leon T. LeWald, M.D., and Arthur F. Holding, M.D., New York.
- 20. "Enuresis and Chronic Digestive Disturbances," Frank vander Bogert, M.D., Schenectady.
Discussion by Arthur Clesson Hagedorn, M.D., Gloversville.
- 21. "A Plea for the More Frequent use of Lumbar Puncture," Edward J. Wynkoop, M.D., Syracuse.
Discussion by Walter Lester Carr, M.D., and Herman Schwarz, M.D., New York.
- 22. "Studies from the Infants' Summer Hospital," Joseph Roby, M.D., Rochester.
- 23. "Studies from the Infants' Summer Hospital," Norris G. Orchard, M.D., and Ford R. Eihlinger, Ph.D., Rochester, by invitation.
Discussion on papers 22 and 23 by Charles Herrman, M.D., New York, and E. Eliot Harris, M.D., New York.

ENTERTAINMENTS.

TUESDAY, APRIL 29TH.

10 P. M.

Dance in the Ball Room of the Hotel Seneca.

WEDNESDAY, APRIL 30TH.

4 P. M.

Automobile ride through the parks for the ladies.

6.30 P. M.

Reception—followed by a dinner at 7 P. M., at the Powers Hotel, for the members. Tickets for dinner, \$2.50.

HOTELS AND RATES.

Hotel Rochester	... \$1.50—\$2.50	a day.	European plan.
Hotel Seneca	..... 1.50—4.00	"	"
Powers Hotel	.... 1.50—3.50	"	"
Whitcomb House	.. 1.50 and up	"	"
Hotel Eggleston	... 1.00—2.50	"	"
Osburn House	.... 2.50—3.50	"	American "
Temperance Hotel	... .50 a day and up.		
Hotel Berkeley, corner Franklin Street,	\$0.75 a day and up.		
"The Pillars," an Inn especially adapted to families and ladies,	\$2.00 a day.		American plan.

ANNOUNCEMENT.

Members are requested to secure accommodations in advance by writing to the hotels and boarding houses. If a member arrives at Rochester without having secured accommodations, he should apply at once to the Committee on Registration and Information, which will be found at the Registration Booth in Convention Hall.

REDUCED RAILROAD RATES.

INFORMATION REGARDING PURCHASING OF TICKETS AND TRAIN SERVICE.

A reduction of fare and three-fifths on the certificate plan from points in New York State has been secured for persons attending the meeting of The Medical Society of the State of New York, Rochester, N. Y., April 28th—May 1st.

The following directions are submitted for your guidance:

Tickets at the regular full one-way first-class fare for the going journey may be secured within three days (exclusive of Sunday) prior to and during the first two days of the meeting. The announced opening date of the meeting is April 28th and the closing date is May 1st, consequently you can obtain your going ticket and certificate not earlier than April 24th nor later than April 30th. Be sure when purchasing your going ticket you request a certificate. Do not make the mistake of asking for a receipt.

It has been arranged that the Special Agent of the Trunk Line Association will be in attendance on April 29th and 30th and May 1st to validate certificates. A fee of 25 cents will be charged at the meeting for each certificate validated. If you arrive at the meeting and leave for home again prior to the Special Agent's arrival, or if you arrive at the meeting later than April 30th, after the Special Agent has left, you cannot have your certificate validated and consequently you will not get the benefit of the reduction on the home journey. No refund of fare will be made on account of failure to have certificate validated.

Unless 100 certificates are presented to the Special Agent at Rochester, no reduction on return tickets will be granted. It is therefore important that all members secure a certificate who purchase a ticket to the meeting.

Tickets on going trip from New York City will be accepted on all trains excepting the Twentieth Century Limited.

Trains from New York City to Rochester via N. Y. C. & H. R. R. R.

<i>Lv. Grand Central Terminal</i>		<i>Ar. Rochester</i>
Empire State Express	8.30 A.M.	4.03 P.M.
Fast Mail	8.45 A.M.	5.15 P.M.
The Mohawk	10.30 A.M.	6.29 P.M.
No. 41	12.40 P.M.	9.06 P.M.
The Westener	2.00 P.M.	11.25 P.M.
Southwestern Limited	4.00 P.M.	11.35 P.M.
Buffalo Special	9.35 P.M.	6.30 A.M.
Western New York Express.....	11.35 P.M.	8.13 A.M.

On return journey Rochester to New York City

REDUCED RATES GOOD ON TRAINS

<i>Leaving Rochester</i>	<i>Arrive New York</i>
8.39 A.M.	5.00 P.M.
9.07 A.M.	6.00 P.M.
11.03 A.M.	7.15 P.M.
12.13 noon	8.00 P.M.
9.45 P.M.	7.20 A.M.
10.38 P.M.	7.50 A.M.
11.01 P.M.	7.55 A.M.
12.13 A.M.	9.00 A.M.

TRAINS FROM BUFFALO TO ROCHESTER.

<i>Leave Buffalo</i>	<i>Arrive Rochester</i>
7.00 A.M.	8.36 A.M.
7.30 A.M.	9.04 A.M.
7.55 A.M.	9.32 A.M.
9.30 A.M.	11.00 A.M.
10.45 A.M.	12.13 noon
1.00 P.M.	2.22 P.M.
3.20 P.M.	5.00 P.M.
3.30 P.M.	5.52 P.M.
5.15 P.M.	6.55 P.M.
5.20 P.M.	7.05 P.M.

REDUCED RATES GOOD ON TRAINS

<i>Leaving Rochester</i>	<i>Arrive Buffalo</i>
8.16 A.M.	10.00 A.M.
10.10 A.M.	12.50 noon
11.00 A.M.	12.55 P.M.
11.34 A.M.	1.05 P.M.
2.45 P.M.	4.30 P.M.
5.20 P.M.	7.05 P.M.
6.32 P.M.	8.00 P.M.
8.45 P.M.	10.25 P.M.

Return journey tickets issued at reduced rates are not good on Train 22, leaving Rochester at 8.48 A. M., and on Empire State Express, leaving Rochester at 2.24 P. M.

Information as to fares and train schedules from other stations may be secured by application to local ticket agent.

THE VALUE AND IMPORTANCE OF MEMBERSHIP IN THE MEDICAL SOCIETY OF THE STATE OF NEW YORK MUST APPEAL TO EVERY THOUGHTFUL PHYSICIAN.

WHY?

- Not merely because of its scientific value:
- Not merely because it promotes social and fraternal relations:
- Not merely because of its strength as an organization for advancing and conserving the corporate interests of all its members.

BUT—

- Because of its economic value to you.*
- Because of what you get.*
- Because you can't afford to remain without it.*

CONSIDER THIS PROPOSITION.

Membership in the Medical Society of the State of New York immediately confers upon you, *without extra cost*, the following:

1. *You receive* the New York State Journal of Medicine monthly. It keeps you in touch with the latest scientific thought and progress in all departments of medicine.
2. *You receive* the Directory containing the names, addresses, etc., of all practicing physicians in the States of New York, New Jersey and Connecticut.
3. *You receive* Protection from malpractice suits. No practicing physician can afford to be without protection of this character. *The protection which the Medical Society of the State of New York affords cannot be duplicated by any Casualty Company at any premium.* (During the past three years about 100 malpractice suits were brought, and every case was successfully defended.)
4. *You are eligible* to membership in the American Medical Association, our great representative national society.

HOW?

Join your County Society at once.

Membership in your County Society confers upon you membership in the Medical Society of the State of New York, and can be obtained by applying to the Secretary of your County Society.

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

REGULAR MEETING, FEBRUARY 17, 1913.

BUSINESS SESSION.

Minutes of the annual meeting and those of the Council meetings were read and approved.

Dr. F. Park Lewis, Chairman, Committee on Legislation outlined a model bill drawn by the Legislative Committee of the American Medical Association, which will be presented to the Association at its next meeting and, if adopted, will be submitted to the various State legislatures. This bill has for its object the prevention of blindness by dealing with ophthalmia neonatorum. He also submitted the bill now before the New York State Legislature, requiring medical certificates before marriage licenses are issued. This bill was approved by the Council and confirmed by the Society by adopting the Council's minutes.

Dr. Lewis gave the history of a child, born with perfect eyes, but which became totally blind from ophthalmia neonatorum.

The question was discussed by Dr. Hopkins, who thought the committee did not go far enough; Dr. Woodruff thought education was preferable to legislation; Dr. van Peyma said that other germs besides the gonococcus caused ophthalmia. Dr. Lewis explained that from 30 to 40 per cent. of cases of ophthalmia neonatorum are not due to gonococcus and considered it wise not to go into that phase by legislation, as it would cast a stigma on the child's parentage and make reporting of ophthalmia difficult.

Dr. Clayton Greene, Secretary of the County Milk Commission, made a verbal report on the work accomplished.

SCIENTIFIC SESSION.

"A Case of Spastic Paraplegia; Results of Section of the Posterior Roots of the Spinal Cord for the Pain and Spasticity," P. Le Breton, M.D., Buffalo.

"Differential Diagnosis of Dysuria," C. W. Bethune, M.D., Buffalo.

ONTARIO COUNTY MEDICAL SOCIETY.

REGULAR MEETING, AT CANANDAIGUA, JANUARY 14, 1913.

"The Development of Vaccine Therapy," W. S. Hastings, M.D., Allen's Hills.

"Some Observations in the Use of Pituitary Extract," A. T. Halstead, M.D., Rushville.

"Enteroptosis and Chronic Intestinal Stasis," W. B. Jones, M.D., Rochester.

"The Surgical Aspects of Certain Thoracic Diseases," Samuel Robinson, M.D.

"A Sanitary Map of the Town of Canandaigua," A. L. Beahan, M.D., Canandaigua.

"Some Remarks on Atypical Typhoid," J. H. Jewett, M.D., Canandaigua.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

REGULAR MEETING, AT ALBANY, JANUARY 21, 1913.

"The Middle Turbinate and the Eye," E. E. Hinman, M.D., Albany.

Discussion opened by A. J. Bedell, M.D., Albany.

"Why Patients Die After Operation," A. H. Traver, M.D., Albany.

Discussion opened by J. H. Gutmann, M.D., Albany.

"Should Newspapers have a Medical Editor?" E. A. Vander Veer, M.D., Albany.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.

REGULAR MEETING, FEBRUARY 11, 1913.

"Psychology and Therapeutics," Frank S. Hoffman, Ph.D.

Discussion by Drs. N. A. Pashayan and J. M. W. Scott, Schenectady.

MEDICAL SOCIETY OF THE COUNTY OF WYOMING.

REGULAR MEETING, AT CASTILE, JANUARY 14, 1913.

"Medico Legal Aspect of Certain Cases of Sudden Death," H. U. Williams, M.D., Buffalo.

"Tonsils, Tonsillitis and Treatment," H. J. Mulford, M.D., Buffalo.

"Diagnosis," W. Ross Thompson, M.D., Warsaw.

ONONDAGA MEDICAL SOCIETY.

REGULAR MEETING, FEBRUARY 11, 1913.

"Some Questions Concerning Arterial Pressure Relative to Treatment of Circulatory Disturbances," George Hawley, M.D., Baldwinsville.

"The Mental Attitude in Disease," G. E. Clark, M.D., Skaneateles.

"Reports of Cases with Presentation of Patient," M. E. Gregg, M.D., Elbridge.

LEGISLATIVE NOTES.

REPORT OF SPECIAL PUBLIC HEALTH COMMISSION TO GOVERNOR WILLIAM SULZER.

TRANSMITTED TO THE LEGISLATURE.

February 19, 1913.

The Commission has held ten public hearings in Albany, New York and Buffalo, at which it received suggestions and information from sixty persons. A copy of the statements taken at these hearings comprise 836 typewritten pages.

SUMMARY OF RECOMMENDATIONS.

The term of office of the State Commissioner of Health should be six years, his salary \$10,000 per annum; he should be either a physician or a recognized authority in public health work, and should not be permitted to practice medicine or have any other occupation which might interfere with his official duties.

There should be created a State Public Health Council of seven members, including the State Commissioner of Health, the Commissioner of Labor, the Commissioner of Education, one commissioner or other officer of a health department of a city of the first or second class to be designated by the Governor, and three members to be appointed by the Governor. This Council should have power to adopt public health regulations, but should not have executive, administrative or appointive powers.

The Commissioner of Health should be charged with the duty of supervising the work of all local health authorities, except in the city of New York, and should be charged with the enforcement of the public health law.

The State outside of New York City should be divided into at least twenty sanitary districts for each of which the State Commissioner of Health should appoint a sanitary supervisor who should not be permitted to practice medicine or to have any other occupation which might interfere with his official duties.

The duties of town and village boards of health, in so far as they are not otherwise provided for, including the appointment of health officers, should be transferred to town boards and village boards of trustees respectively. The State Public Health Council should be authorized to establish qualifications of eligibility and conditions for appointment to the position of health officer for all subsequent appointments.

Health officers of towns and villages (at least those hereafter appointed) should receive an annual minimum salary equivalent to at least fifteen cents per inhabitant of their village or town.

Health officers of towns and villages should be specifically charged with the performance of the following duties: (a) An annual survey and a continuous sanitary supervision of the territory within their jurisdiction. (b) Examination of all school children as

soon as practicable after the opening of each school year. (c) Inspection of school buildings and all places of public assemblage and report on their condition and needs to those responsible for their maintenance. (d) Popular education as to public health. (e) Securing full reports of communicable diseases and full registration of births and deaths. (f) Enforcing the public health law and the regulations of the Public Health Council in the territory within their jurisdiction.

The model statutes for the collection of vital statistics and the registration of births, recommended by the United States Census Bureau and many other authorities, modified slightly to meet New York conditions, should be substituted for the present statutes on these subjects.

Each city, county, village and town should be given a specific authority to employ one or more trained nurses to act as infant welfare nurses, school nurses, tuberculosis nurses, and generally, at the request of physicians or health officers, to visit the sick who otherwise are unable to secure adequate care, and instruct other members of the household in the care of the sick, and the prevention of infection and disease. The State Public Health Council should establish qualifications of eligibility and conditions for appointment of such public health nurses.

The statute should require certain divisions in the State Health Department and define the qualifications of the heads of such divisions. Some of these divisions now exist; others should be established, including a division of child hygiene and a division of public health nursing.

The tuberculosis law should be amended as follows: (a) Authorize nurses, teachers, landlords, and laymen generally to report to health officers for inquiry and examination any person under their observation who appear to be suffering from tuberculosis.

(b) Authorize local authorities to employ trained nurses for the sanitary supervision of households in which there are reported cases of tuberculosis, and for the discovery of unreported cases.

(c) Require local health authorities to initiate proceedings against physicians who fail to report cases.

(d) Make the original report of a case by a physician as simple and easy as possible.

(e) Provide for the compulsory removal and detention of careless tuberculosis patients, and any others whose condition renders them dangerous.

Additional provision should be made by the State for strictly incipient cases of pulmonary tuberculosis.

Each county with a population exceeding 25,000, not otherwise adequately provided with local tuberculosis hospitals, should proceed at once and with all diligence to establish and maintain a county tuberculosis hospital.

The State Health Department should be provided with new laboratories, with sufficient land, and equipped with adequate facilities for making examinations and analyses for local health officers and for original research. It should also be authorized to enter into contracts with laboratories in several portions of the State, conditional upon the maintenance of standards of efficiency outlined by the Public Health Council, for prompt examinations, analyses and reports of specimens sent by local health officers.

Local authorities should be strongly and repeatedly urged to provide contagious disease hospitals (in addition to tuberculosis hospitals) with not less than one bed for every 2,000 of the entire population. The State Department of Health should be charged with the duty of periodically inspecting such hospitals and of reporting their conditions and needs to the authorities responsible for their maintenance, and the Public Health Council should make regulations as to their administration.

The proposed Public Health Council should have power to regulate the practice of midwifery.

The written reports of public health officers including nurses, etc., on questions of fact under the public

health laws of the State or under any State or local health regulations, should be made presumptive evidence of the facts so stated, and receivable as such in all courts and places. The persons making such reports should be exempted from personal liability for the facts so stated, provided they have acted in good faith.

The educational work of the State Department of Health should be greatly extended and strengthened, particularly in the line of authoritative popular education as to the nature and methods of control and prevention of prevalent diseases.

By establishing standards of qualifications of public health officers and nurses, and in other ways, the State Public Health Council should encourage the educational bodies of the State to maintain special courses of study and training in sanitary science and public health work for physicians, nurses, engineers and others proposing to engage in public health work, in any of its branches.

At the earliest possible moment the records of the State Department of Health, including the records of births and deaths, should be placed in a fire-proof building and the Department should be provided with offices large enough to relieve the present congestion and to protect the health of its employees.

The balance of the report is devoted to existing public health agencies and laws, operating of existing agencies, town and village boards of health, town and village health officers, chart comparing rural and village mortality rate with that of cities, quarantine, disinfection, labor camps, definite opportunities, tuberculosis, infant mortality, typhoid fever, venereal diseases, diphtheria and croup, measles and whooping cough, medical school inspection, and detailed statement of recommendations.

HEARING ON THE McCLELLAND BILL.

A hearing was held in Albany before the Committee on the Judiciary of the Senate, on Tuesday, February 18th, on Senate Bill, Introductory 153, Printed No. 155, by Mr. McClelland. "To create a commission to investigate the present condition and extent of the practice of experimentation on living animals in this State and to report what changes, if any, in the existing laws, are desirable to protect animals from unnecessary suffering in this practice without unreasonably interfering with legitimate scientific research." The Medical Society of the State of New York was represented at this hearing by Prof. F. S. Lee, of Columbia University, Dr. William H. Park, Bacteriologist, Board of Health of New York City, Dr. Simon Flexner, and Mr. Henry James, Jr., of Rockefeller Institute. The bill was not reported out of committee.

BILLS INTRODUCED INTO THE LEGISLATURE.

JANUARY 24 TO FEBRUARY 22, 1913.

IN SENATE.

Amending Sections 290, 291, 293, 294, 295 and 296, Public Health Law, by providing that members of the Board of Embalming Examiners shall be duly licensed embalmers and providing for examinations of applicants and the licensing of persons to engage in the practice of undertaking. (Same as A. 1058.) By Mr. Seeley. To Public Health Committee. Feb. 13. Reported amended to Committee of the Whole. Feb. 18. Amended. To third reading. Printed Nos. 495, 871, 961. Int. 474.

Amending the Greater New York Charter, by adding a new Section 681, providing that, upon the death of any patient in the custodial part of the New York City hospital and schools at Randall's Island, who shall be maintained therein wholly at the expense of the public, the Commissioner of Charities may, in his discretion, issue a permit for an autopsy to be made by a member or members of the medical staff of such institution, such autopsy not to be made later than

twelve hours after the death of the patient and to be confined exclusively to the brain. (Same as S. 832.) By Mr. Herrick. To Cities Committee. Feb. 12. Reported to Committee of the Whole. Feb. 13. To third reading. Feb. 17. Amended. Printed Nos. 584, 890. Int. 543.

Amending Sections 330-a and 330-k, and adding new section 330-l, charter of the city of Oswego, relative to the construction of additional sewers, by striking out the provision that neither of the creeks for the sewers shall be enclosed. (Same as A. 545.) By Mr. Brown. To Cities Committee. Feb. 19. Reported amended to Committee of the Whole. Printed Nos. 696, 1012. Int. 641.

Amending Section 93, Insanity Law, by providing that where a second or subsequent application is made for the discharge from custody of the same patient, any party to the proceedings may introduce in evidence the testimony of any witness given upon a preceding hearing upon an application to discharge, together with all exhibits introduced at such hearings, without recalling such witness, such evidence to have the same force as in the prior proceedings. (Same as A. 855.) By Mr. Murtaugh. To Judiciary Committee. Printed No. 702. Int. 647.

Amending the Public Health Law by renumbering Article 20 to be Article 21, and inserting a new Article 20, prescribing sanitary conditions for hotels, relative to sewage and drainage, and beds, sheets and towels for rooms. By Mr. White. To Public Health Committee. Printed No. 718. Int. 663.

Amending Section 45, County Law, prohibiting the establishment of tuberculosis hospitals within the limits of a city of the second or third class or villages unless approved by the health officer of the village or city and the State Commissioner of Health, and consented to by a majority of the voters of such village or of the ward of a city in which such hospital is proposed to be established. By Mr. Seeley. To Internal Affairs Committee. Printed No. 734. Int. 677.

Providing for the appointment by the State Regents of such number of persons to represent it as shall be necessary for the proper supervision of animal experimentation, within the State. (Same as A. 928.) By Mr. Boylan. To Judiciary Committee. Printed No. 743. Int. 683.

Amending Public Health Law by adding new Section 318-b, prohibiting the sale of wood alcohol or any fluid containing wood alcohol unless the container shall bear a label having printed thereon in red ink, "Poison, Wood Alcohol. Do not use except where there is sufficient ventilation." (Same as A. 972.) By Mr. Wagner. To Public Health Committee. Printed No. 792. Int. 728.

Amending Section 310 and 311, Public Health Law, authorizing the exclusion of unvaccinated pupils from schools whenever smallpox exists or is threatened. (Same as A. 1060.) By Mr. Seeley. To Public Health Committee. Printed No. 867. Int. 791.

Amending Section 307, Public Health Law, providing that no persons practising or offering to practice optometry shall publicly represent himself to be a doctor, or shall assume the title of doctor or use such title or any abbreviation thereof in his practice, unless the right to use the same has been conferred upon him by some duly authorized college or university. (Same as A. 1059.) By Mr. Seeley. To Public Health Committee. Printed No. 868. Int. 792.

Amending Sections 160, 161, 166, 169, 170, Public Health Law, relative to issuance and revocation of medical licenses. (Same as A. 1057.) By Mr. Seeley. To Public Health Committee. Printed No. 869. Int. 793.

Appropriating \$10,000 for the selection of lands as sites for the New York State Custodial Asylum for Feeble-Minded Male Delinquents and for a place of detention and observation in connection therewith, and providing for the acquisition of such lands. By Mr. Frawley. To Finance Committee. Printed No. 885. Int. 800.

Amending Section 144, Public Health Law, by increasing the fees which the health officer of the port of New York shall charge for inspection of vessels and for the maintenance and care of persons detained at quarantine for observation. (Same as A. 1099.) By Mr. Blauvelt. To Public Health Committee. Printed No. 910. Int. 820.

Amending the Public Health Law, by adding a new Section 240-a, providing that in an action or proceeding civil or criminal, for violation of the Health Law, relative to retailing or dispensing of drugs, medicines or poisons, it shall be necessary to prove that at the time and place of taking samples of such drugs, medicines or poisons, to be analyzed, the person taking the same divided it into two substantial equal parts, hermetically or otherwise effectively and completely sealed, delivered one such sealed part to the pharmacist from whose premises the samples were taken and the other to the chemist designated by the State Board of Pharmacy and the facts herein required to be proven shall be alleged in the complaint or information by which such action or proceeding was begun. (Same as A. 1136.) By Mr. Duhamel. To Public Health Committee. Printed No. 918. Int. 828.

Authorizing the commissioners of the Land Office to purchase a new site for the hygienic and antitoxin laboratories of the State Department of Health. (Same as A. 1149.) By Mr. Sage. To Finance Committee. Printed No. 938. Int. 848.

Amending Section 238, and Schedule "B" of Section 241, Public Health Law, by providing that carbolic acid if in a stronger solution than five per centum shall not be sold at retail by any person except upon written prescription of a physician, dentist or veterinarian. By Mr. Whitney. To Public Health Committee. Printed No. 942. Int. 852.

Amending Sections 250, 251, 252, Public Health Law, by providing that any resident of the State, over twenty-one years of age, holding a diploma from a training school for nurses, connected with a hospital or sanitarium, giving a course of at least two years, and registered by the regents of the university and who shall have received from such regents a certificate of qualification, may practice as a nurse, such certificate authorizing the holder thereof to use the terms of "nurse," or "registered nurse" and the abbreviation "R.N." in connection with his or her name, and providing for examinations, etc. By Mr. Seeley. To Public Health Committee. Printed No. 943. Int. 853.

Amending Section 1745, Penal Law, prohibiting, except upon the written or verbal order of a physician, the refilling more than once of prescriptions containing chloral in which the dose of opium exceeds ten grains, dimethyl morphine in which the dose of opium exceeds one-twenty-fourth of a grain, codeine in which the dose of opium exceeds one-eighth of a grain, or derivatives of opium or morphine, violation to constitute a misdemeanor. By Mr. Whitney. To Codes Committee. Printed No. 1057. Int. 941.

Amending Sections 238, 239, Public Health Law, prohibiting, except upon the written or verbal order of a physician, the refilling more than once of prescriptions containing chloral in which the dose of opium exceeds ten grains, dimethyl morphine in which the dose of opium exceeds one-twenty-fourth of a grain, codeine in which the dose of opium exceeds one-eighth of a grain, or derivatives of opium or morphine. By Mr. Whitney. To Public Health Committee. Printed No. 1058. Int. 942.

Providing for a Milk Law, to constitute Chapter 36-a of the Consolidated Laws, creating a State sanitary milk department, charged with the duty of executing laws relating to the production and sale of milk and dairy products. (Same as A. 1199.) By Mr. Seeley. To Public Health Committee. Printed No. 1059. Int. 943.

IN ASSEMBLY.

Amending the Insanity Law, providing for a permanent fund for the payment of annuities to officers of

State hospitals for the insane. By Mr. McElligott. To General Laws Committee. Feb. 6. Reported amended to second reading. Feb. 11. To third reading. Feb. 17. Passed. Feb. 18. In Senate, Rec. No. 86. To Finance Committee. Printed Nos. 653, 838. Int. 633.

Amending the Greater New York Charter, by adding seven new Sections, 693-b to 693-h, establishing a hospital pension fund to be under the control of the board of trustees of Bellevue and Allied Hospitals. By Mr. Levy. To Cities Committee. Printed No. 713. Int. 687.

Amending the Greater New York charter, by adding a new Section 681, providing that, upon the death of any patient in the custodial part of the New York city hospitals and schools at Randall's Island, who shall be maintained therein wholly at the expense of the public, the commissioner of charities may, in his discretion, issue a permit for an autopsy to be made by a member or members of the medical staff of such institution, such autopsy not to be made later than twelve hours after the death of the patient and to be confined exclusively to the brain. (Same as S. 543.) By Mr. Schifferdecker. To Cities Committee. Feb. 12. Reported to second reading. Feb. 18. Re-committed. Printed No. 874. Int. 832.

Amending Section 93, Insanity Law, by providing that where a second or subsequent application is made for the discharge from custody of the same patient, any party to the proceedings may introduce in evidence the testimony of any witness given upon a preceding hearing upon an application to discharge, together with all exhibits introduced at such hearing, without recalling such witness, such evidence to have the same force as in the prior proceedings. (Same as S. 647.) By Mr. J. D. Kelly. To Judiciary Committee. Printed No. 897. Int. 855.

Amending Section 30, Agricultural Law, by including in the definition "adulterated milk," milk produced or kept in unsanitary surroundings or in any environment or under any condition whatever that is inimical to its healthfulness or wholesomeness. By Mr. Cole. To Agricultural Committee. Printed No. 958. Int. 914.

Providing for the appointment by the State Regents such number of persons to represent it as shall be necessary for the proper supervision of animal experimentation within the State. (Same as S. 683.) By Mr. Ward. To Judiciary Committee. Printed No. 972. Int. 928.

Amending the State Charities Law by adding four new Sections, 35 to 38, establishing a bureau under the State Board of Charities for the study of abnormal classes. The director of the bureau is to be appointed by the Governor for five years at an annual salary of \$3,000. He shall study especially the inmates in institutions for criminals, paupers and defectives. By Mr. Gibbs. To Ways and Means Committee. Printed No. 979. Int. 935.

Amending Public Health Law, by adding new Section 318-b, prohibiting the sale of wood alcohol, unless the container shall bear a label having printed thereon in red ink, "Poison, Wood Alcohol. Do not use except where there is sufficient ventilation." (Same as S. 728.) By Mr. Jackson. To Labor and Industrial Committee. Printed No. 1018. Int. 972.

Authorizing the Department of Health, New York City, to establish hospital boats or barges, for the purpose of treating, without cost to them, sick mothers and children during the summer months. Each barge shall have at least one physician and as many graduate nurses as the health commissioner may decide. By Mr. Farrell. To Cities Committee. Printed No. 1075. Int. 1020.

Authorizing the City of Buffalo to borrow \$30,000 for the purpose of participating in the Fourth International Congress in the School of Hygiene to be held in said city. (Same as S. 755.) By Mr. Hearn. To Cities Committee. Feb. 19. Reported to second reading. Feb. 20. To third reading. Printed No. 1076. Int. 1021.

Amending Sections 160, 161, 166, 169, 170, Public

Health Law, relative to issuance and revocation of medical licenses. (Same as S. 793.) By Mr. McDaniels. To Public Health Committee. Printed No. 1130. Int. 1057.

Amending Section 307, Public Health Law, providing that no person practising or offering to practice optometry shall publicly represent himself to be a doctor, or shall assume the title of doctor or use such title or any abbreviation thereof in his practice, unless the right to use the same has been conferred upon him by some duly authorized college or university. (Same as S. 792.) By Mr. McDaniels. To Public Health Committee. Printed No. 1132. Int. 1059.

Amending Sections 310, 311, Public Health Law, authorizing the exclusion of unvaccinated pupils from schools whenever smallpox exists or is threatened. (Same as S. 791.) By Mr. McDaniels. To Public Health Committee. Printed No. 1133. Int. 1060.

Amending Section 144, Public Health Law, by increasing the fees which the health officer of the port of New York shall charge for inspection of vessels and for the maintenance and care of persons detained at quarantine for observation. (Same as S. 820.) By Mr. McKee. To Public Health Committee. Printed No. 1178. Int. 1099.

Amending Section 59, Insanity Law, providing for the licensing by the State hospital commission, of private institutions, psychopathic wards and detention hospitals for the insane and alleged insane. By Mr. McElligott. To General Laws Committee. Printed No. 1186. Int. 1107.

Amending the Public Health Law, by adding a new Section 240-a, providing that in an action or proceeding civil or criminal, for violation of the Health Law, relative to retailing or dispensing of drugs, medicines or poisons, it shall be necessary to prove that at the time and place of taking samples of such drugs, medicines or poisons to be analyzed, the person taking the same divided it into two substantial equal parts, hermetically or otherwise effectively and completely sealed, delivered one such sealed part to the pharmacist from whose premises the samples were taken and the other to the chemist designated by the State Board of Pharmacy, and the facts herein required to be proven shall be alleged in the complaint or information by which such action or proceeding was begun. (Same as S. 828.) By Mr. Ulrich. To Public Health Committee. Printed No. 1215. Int. 1136.

Amending the Public Health Law by adding new Section 5-a, directing the State Health Commissioner to prescribe methods and forms for preserving statistics of autopsies and requiring those performing autopsies to enter on the record the pathological appearances and findings in all the vital organs of the body, and to append thereto the diagnosis of the cause of death. By Mr. McKeon. To Public Health Committee. Printed No. 1305. Int. 1206.

CORRESPONDENCE.

Port Jervis, N. Y., February 13, 1913.

Dr. A. T. Bristow, Editor,

DEAR DOCTOR:

The following action taken by the Port Jervis Medical Club in reference to Contract Lodge Practice may be of interest to some other locality where the practice is now carried on.

At the December meeting the following resolution was passed:

WHEREAS, It is the concensus of opinion of the Port Jervis Medical Club that Fraternal Medical Practice as at present constituted is detrimental to the best interests of the medical profession as a whole.

WHEREAS, Such practice is inconsistent with the care and attention which the sick demand and

WHEREAS, Such practice is contrary to the dignity and ethics of our profession

Be It Resolved: That we, the members of the Port Jervis Medical Club place ourselves on record as be-

ing opposed to such practice and that it should be abolished.

A second resolution was passed and signed by all members not doing such work to the effect that if given up by the others that no one would accept same.

All the Lodge Physicians have resigned so that after April first unless a physician is imported, Port Jervis will be free from this practice.

Respectfully,
L. H. McALLISTER,
Sec. Port Jervis Medical Club.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DISEASES OF THE HEART AND AORTA. By ARTHUR DOUGLASS HIRSCHFELDER, M.D., Associate in Medicine, Johns Hopkins University. With an introductory note by LEWELLYS F. BARKER M.D., LL.D., Professor of Medicine, Johns Hopkins University. 344 illustrations by the author. Second edition. Philadelphia and London. J. B. Lippincott Company. Price, \$6.00.

DIET AND HYGIENE IN DISEASES OF THE SKIN. By L. DUNCAN BULKLEY, A.M., M.D., Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital; Consulting Dermatologist to Randall's Island Hospital, to the Hospital for Ruptured and Crippled, and to the Manhattan Eye and Ear Hospital, etc. New York. Paul B. Hoeber, 69 East 59th Street. Price \$2.00, net.

CHLORIDE OF LIME IN SANITATION. By ALBERT H. HOOKER, Technical Director Hooker Electro-chemical Company. New York, John Wiley & Sons. London, Chapman & Hall, Limited. 1913.

AN ATLAS OF THE DIFFERENTIAL DIAGNOSIS OF THE DISEASES OF THE NERVOUS SYSTEM. Analytical and Semiological Neurological Charts. By HENRY HUN, M.D., Professor of the Diseases of the Nervous System in the Albany Medical College; Member of the Association of American Physicians, The American Neurological Association, etc. Author of "A Guide for American Medical Students in Europe." "Syllabus of a Course of Lectures on the Diseases of the Nervous System," etc. The Southworth Company, Publishers. Troy, N. Y. 1913.

BOOK REVIEWS.

X-RAY DIAGNOSIS AND TREATMENT. A text-book for general practitioners and students. By W. J. S. BYTHELL, B.A., Cantab., M.D., Vict. Hon. Physician to the Ancoats Hospital, Manchester (Electro-Therapeutic Department), and A. E. BARCLAY, M.D., Cantab., M.R.C.S., L.R.C.P. Medical officer Electrical and X-ray departments, Manchester Royal Infirmary; late clinical assistant Electrical department, London Hospital. Henry Frowde. Hodder & Stoughton. Oxford University Press, 35 West 32nd Street, New York City.

This is a work for which there has been a decided need for some time.

The authors have well omitted the technical details from the body of the work itself, and placed it in an appendix.

There is presented an excellent view of the field of radio-diagnosis and therapeutics so that, as the authors say, the physician may answer for himself the question "will the X-rays be of any assistance in the diagnosis and treatment of such and such a case?"

But perhaps greater service is offered to the man who can secure the radiograms, but may be at a loss to make a diagnosis from them. The orderly arrangement of description of disease with the characteristic X-ray appearances of each on the plates—radiographic pathology—is a most commendable feature.

The sections on bone diseases is most complete, the reviewer finding but little that might be added. Carci-

noma of the bone is not treated as fully as it might be, and no mention is made of lumbar ribs, but these are minor details.

The section on the thorax has special excellence.

The chapters on examination of the abdomen present fully the scope of the work, and fullest details of diagnostic interpretation. However, the necessity of fully confirming the findings in the stomach cases might have been brought out more clearly.

The section on therapeutics is clear and concise, presenting the action of the rays on the various tissues, and the conditions in which they are indicated.

On the whole, the authors are to be congratulated for the complete mass of material that has been set forth in such a clear, concise and exact manner. The book should prove to be a great aid to physician and radiographer alike.

CHARLES EASTMOND.

BACTERIA, Dr. MAX SCHOTTELIUS; with ten colored plates and 33 illustrations in the text; second edition; translated by Staff-Surgeon HERBERT GEOGHEGAN, R.N.; London, Henry Frowde, Oxford University Press, and Hodder & Stoughton, Warwick Square, E. C.

This small volume of 325 pages, written by a distinguished professor of hygiene, covers in a remarkable manner the ground of bacteria and protozoa as causes of disease. The style is brief but lucid; the matter exceptional; sifted from disputed and unimportant details, and the translation is a very happy one.

The subjects embrace the life history of the bacteria, the causes and combat of the disease, the important specific diseases and the general biological processes that stand at the foundation of health and disease.

Not only should the work commend itself to students and practitioners of medicine who desire a continuous narrative of pathogenic micro-organisms, viewed as active, disease producing agents and of the normal and pathological defensive mechanism of the body, but the layman also may find in its clear statements, almost free from technical considerations, an instructive and entertaining account of this branch of science that is ever attracting more attention.

B. A. C.

DISEASES OF CHILDREN. A Practical Treatise on Diagnosis and Treatment for Students and Practitioners. By BENJAMIN KNOX RACHFORD, Prof. Diseases of Children, Ohio-Miami Medical College, Department of Medicine, University Cincinnati; ex-president American Pediatric Society. New York and London. D. Appleton and Company. 1912.

Without being a copy of what is usually found in books upon pediatrics, this volume is comprehensive and up-to-date. Most of the space is devoted to diagnosis and treatment of the various diseases and in this feature it tends to excel in being practical. While the important facts of pathology and etiology are mentioned, the less important ones are often made minor to the facts of diagnosis and treatment. This coupled with the very evident feature that the author follows no particular school of pediatricians makes the volume one of rare practicability for the general practitioner.

Chapters I and II are particularly valuable in emphasizing the differing physiological peculiarities of childhood and adult life. Chapter IV is unusual in that it advocates the use of inunctions in therapy but does so specifically and in a practical manner. The section dealing with infantile metabolism is clear-cut, instructive and important. In the chapter on Artificial feeding, the author is explicit in discussing the underlying principles and their application in ordinary practice. And so we might go on and suggest the many valuable features of each chapter, but taking a broad view of this volume as to its value to the general practitioner, we must admit the unusual practicability of its suggestions, the clearness of its discussion of underlying principles and the real value of its power to instruct, through the author's clear, forcible and concise manner of writing

LEGRAND KERR.

THE PRACTITIONER'S ENCYCLOPEDIA OF MEDICINE AND SURGERY IN ALL THEIR BRANCHES. Edited by J. KEOGH MURPHY, M.C., F.R.C.S. London. Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York City. 1912. Price in cloth binding, \$7.00; half leather, \$8.00.

This is, indeed, an encyclopedia. It is a volume of fourteen hundred pages, printed on thin paper—light and easy to handle—and a veritable mine of the newest medical information. The chapters are well written, and are apparently by highly competent men. The book is practical. It can be of service to the general practitioner who wishes to have something at hand in which he may find the up-to-date things in medicine.

Of English origin, it is dedicated to our own Osler; and is thus given an additional touch of interest to the American reader.

J. P. W.

THE SURGICAL DISEASES OF CHILDREN. By WILLIAM FRANCIS CAMPBELL, M.D., Professor of Anatomy, Long Island Medical College; Surgeon-in-Chief to the Trinity Hospital; Surgeon to the Methodist Episcopal Hospital; Consulting Surgeon to the Swedish and Jamaica Hospitals, and LE GRAND KERR, M.D., Pediatricist to the Methodist Episcopal, the Williamsburg and Swedish Hospitals; Consulting Pediatricist to the Industrial Home and the Rockaway Beach Hospital. D. Appleton and Company, New York City. 1912.

The rôle of co-operation which an eminent surgeon and anatomist and a distinguished pediatricist play in presenting this ideal dual standpoint of the diseases of children offers a new suggestion. It has amalgamated this field and given the practitioner a broader view.

The work is divided into 14 sections, 2 parts, general and regional, and contains 674 pages.

Section 1 contains two chapters upon "The Qualifications of the Pediatric Surgeon and the Expression of Disease in the Young Child."

Section 2 is devoted to the examination, posture, gait, pain, examination of the blood and diagnostic value of the X-rays.

In section 3 devoted to anesthetization, general considerations and preparation are discussed. Those conditions which the anesthetist must watch carefully are detailed and the variety and selection of the drugs. Chapter 10 devoted to postoperative care includes the immediate treatment of nausea, vomiting, hematemesis, undue restlessness, sweating and thirst. Chapter 11 deals with the sequels of anesthesia. Chapter 12 describes local anesthesia.

Section 4, headed, "The Operation," includes preparation, hemostasis, after-treatment, lavage, gavage and rectal feeding. An excellent chapter concludes this section upon shock. Under prophylaxis should be mentioned anocci—association anesthesia.

Section 5, upon the "Constitutional Affections with a Surgical Aspect," includes hemophilia, rachitis, scorbatis and status lymphaticus. The subjects are dealt with in a very able manner.

Section 6 is devoted to adenitis, osteomyelitis, tuberculosis, erysipelas, tetanus and septic diseases. Bacterial vaccines are included. The chapter upon "Surgical Tuberculosis" is to be recommended.

Section 7 is devoted to burns, scalds and fractures. It is stated: "There is no practical advantage in attempting to classify burns or scalds according to their degree or depth." In the treatment of burns it is stated: "It is usually impossible to secure thorough cleansing of the burn without an anesthetic. Therefore an anesthetic should be administered at once, the clothing removed and the wound surface methodically disinfected with boric acid solution." This is a somewhat radical stand to take. An individual expression of opinion is as follows, "Ointments and powders have no place in the treatment of burns." The authors advocate early skin grafting.

Section 8 is devoted to "Surgical Diseases of the Central Nervous System." A chapter is devoted to

"Lumbar Puncture." The treatment of spastic paralysis by posterior spinal nerve-root section should receive mention, as well as this operation for the relief of intractable pain in the extremities, from pressure of inoperable tumors.

Section 9 is devoted to "Neoplasms." Classification based upon the cells of origin is the most satisfactory. The method of diagnosis of cysts according to contents is to be condemned.

Part II is devoted to regional surgery. An exact anatomic classification is used throughout. Here the teaching qualities of the authors stand out prominently. Descriptions are terse, clear cut, snappy. Style is individual and typic. To read this book is to believe it. It is essentially practical in the clinical aspects.

Section 10 is upon the "Head and Neck." Each part is systematically and carefully taken up in detail. The important points are emphasized in an unusually forceful manner. Under cicatricial stenosis of the esophagus credit should be given Robert Abbe for the "Fish-line treatment."

Section 11 is devoted to the "Thorax and Spine." Orthopedic conditions are included. The subjects are well treated.

The authors devote section 12 to the surgical affections of the pelvis and abdomen. Chapter 56 is devoted to a comprehensive treatise upon hernia and represents a most inclusive and complete presentation of the subject. In regard to the treatment of strangulated hernia the authors state, "Try taxis if the strangulation has not existed for more than twelve hours." Rules are laid down for the treatment of reducible hernia. The authors prefer the technic of Kocher in the operative management of the reducible hernias. The chapter upon appendicitis is excellent. The points of difference are detailed between the child and the adult. The authors divide treatment into pre-operative and operative. In addition to an excellent régime outlined it is suggested that all cases of suspected acute appendicitis be given the advantage of postural drainage, irrespective of the supposed lesion. The patient should be sent to the hospital in this posture, placed in a bed the head of which has been raised and transferred from the bed to the operating room in a cart the head of which is elevated, returned in the same posture to the bed and maintained in this position.

Section 13 and 14 conclude the work upon the extremities. The illustrations, numbering 271, add much to the beauty of the work. The book is presented in excellent taste and in a handy form. There is no waste space, chapters following each other without interposition of blank spaces.

Readers will find that points raised in preconceived ideas have been treated satisfactorily; that the presentation of this work solidifies the position of the authors, upholds the reputation for their scientific attainments and calls for the esteem of the scholarly professional mind.

ROYALE H. FOWLER, M.D.

DEATHS.

NORMAN BRIGHAM BAYLEY, M.D., Haverstraw, died February 27, 1913.

WILLIAM F. GANSTER, M.D., Brooklyn, died February 12, 1913.

PHILIP HANSON HISS, JR., M.D., New York, died February 27, 1913.

JOHN B. L'HOMMEDIEU, M.D., Rosebank, died February 27, 1913.

KINGMAN B. PAGE, M.D., New York City, died February 19, 1913.

EPHRAIM WINNIE, M.D., Hornell, died February 19, 1913.

GEORGE H. WITTER, M.D., Wellsville, died February 13, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

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Vol. XIII.

APRIL, 1913

No. 4

EDITORIAL DEPARTMENT

ALGERNON THOMAS BRISTOW.

TO all that knew Dr. Bristow the news of his death will come with a peculiar sadness—the sadness that springs from a personal loss. To those who enjoyed his friendship the facets of his many sided character that shone clearest were his rare integrity and his capacity for awakening affection even among those who often differed with his point of view. Sensitive as a woman to unkindness and misapprehension, he yet possessed a clear insight that made him peculiarly intolerant of pretense. Frank and fearless to a degree when he thought himself in the right he never hesitated to use with effect his power of irony in exposing sham. His habit of thought gave him a comprehensive grasp of public affairs that made his analysis of questions affecting the medical profession both searching and convincing. Few physicians have combined such scholarly attainments with such scientific thoroughness. He excelled as a surgeon, diagnostician, publicist and scholar.

Dr. Bristow was born in England, November 29, 1850, and came to America with his family when two years of age. Graduated from Yale College in 1873, he received his doctor's degree in medicine from the College of Physicians and Surgeons in 1876 and

shortly after served as Interne in the Kings County Hospital where he was still attached as attending surgeon at the time of his death. He was also Attending Surgeon to St. John's and the Long Island College Hospital, Consulting Surgeon to the Long Island State, Swedish, Coney Island, and Bushwick Hospitals, all in Brooklyn. He was president of the State Medical Society in 1903. Dr. Bristow was appointed editor of the JOURNAL in 1909.

In 1891 he married Emelie Ashmead, of Philadelphia, who with two daughters, Helen Graham and Alice Andrews, survives him.

On March 12, while operating upon a septic patient, he pricked his finger with a needle. In spite of prompt and approved treatment septicemia rapidly developed, and his system, depleted by a recent attack of grippe, was unable to combat the infection which caused his death on March 26, 1913. He has joined the ranks of those who in the quiet discharge of duty have ennobled and sanctified the profession they loved.

The Publication Committee of the State Society feel that it is fitting that this brief and inadequate testimonial of their estimate of Dr. Bristow should be placed in the pages of the JOURNAL that owes so much to his faithful labor.

A MESSAGE FROM THE PRESIDENT TO THE MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

A SADDENED GREETING:

Dr. A. T. Bristow, Brooklyn, editor of the *NEW YORK STATE JOURNAL OF MEDICINE*, died at six minutes to five P. M. on Wednesday, March 26th.

It may be truly said that Dr. Bristow died a martyr in the cause of surgery.

Dr. Bristow's death was caused by a virulent streptococcus infection due to a wound at an operation.

The members of the Society and many colleagues and friends throughout the State and the country, will mourn the loss of Dr. A. T. Bristow from the ranks of their medical and surgical co-laborers in the profession.

The president desires to express for you collectively, the sympathetic regard you feel for the family and friends of Dr. Bristow, and your appreciation of the irreparable loss of the medical profession.

J. F. W. WHITBECK,
President.

THE SURGEON'S PERIL.

The death of Dr. A. T. Bristow from blood poisoning, developed from the prick of an instrument while operating, adds one more to the list of distinguished surgeons who have laid down their lives as an incident to their practice. The *Times* printed recently an anonymous letter from the chief surgeon of one of this city's hospitals, describing the poison contaminating the surgeon's knife or scissors' blades and needles as being as "virulent, or nearly so, as rattlesnake venom." He added:

"Any surgeon of wide experience will tell you that this is not overdrawn. And the risk of his own death from accidental wounding of the finger with such an instrument is at least as great as that of being seriously wounded or killed outright by a bullet, if fighting in the front ranks of one of the great battles between the North and South in our country's war."

Surgery is indeed reckoned one of the shortest-lived and most honored and glorious of professions. The wealthy who cavil at the fees of surgeons know little of their risk and devotion. And they are as ready to do service for the very poor, without compensation, as for the rich. In the death of Dr. Bristow this community has lost a man of splendid and inspiring personality, one who has upheld the best traditions of his profession.—*N. Y. Times*, March 28, 1913.

RESOLUTIONS PASSED BY THE COUNCIL OF THE NEW YORK ACADEMY OF MEDICINE.

WHEREAS, The Council of the New York Academy of Medicine has learned with profound sorrow of the death of Dr. Algernon Thomas Bristow, therefore be it

Resolved, that the Council hereby records its appreciation of Dr. Bristow, the man and the physician.

He became a fellow of the academy in 1901 and served as Vice-President from 1906 to 1909. As an officer, as a member, and in his private practice, he exemplified all that is best in the medical profession. He combined to an unusual degree the practical and the ideal in his work. Dr. Bristow was a man of great public spirit and much interested in all the activities of the academy. His wise judgment and genial personality will be greatly missed. Therefore, be it

Resolved, that a copy of these resolutions be sent to the family and to the medical journals.

WISNER R. TOWNSEND,

L. EMMETT HOLT,

Committee of the Council.

SECTION ON OBSTETRICS AND GYNECOLOGY.

In taking up the work of the Section on Obstetrics and Gynecology during the past year the officers of the section had definite views of what the interests of the society and the section demanded and the program which is presented represents our conception of what those needs of the Society are at this particular time, and is one that we feel justly merits the support of the large membership of the society who are dealing with these various topics in their practical work.

It is anticipated that the sacrifice which the several readers will make in order to be with us will be repaid, in the only way in which such sacrifice can be repaid, by a generous and interested attendance at the meeting.

While the importance to the general practitioner of this branch of his work needs no emphasis it is felt that the future success of this section will depend very largely upon the appeal which that program makes to you and the response that it receives at your hands.

In order to accomplish the work that has been planned in the time that has been given, it will be necessary to begin each session promptly at the hour scheduled and that each reader and discussor be limited strictly to his allotted time. This rule is inflexible and no motion in contravention can be entertained.

The meeting place and headquarters of this Section will be at the Hotel Seneca which has unusual facilities for entertainment, but it is suggested that early reservations will insure satisfaction.

Original Articles.

PERFORATED DUODENAL ULCER.*

By NATHAN JACOBSON, M.D.,

SYRACUSE.

THE subject of this paper is to my mind one of the most important which could be presented to such a body of medical men as is here assembled. However, the large number of contributions to your program forbids its consideration at length. No surgical emergency is attended with greater danger nor is there one which demands more prompt recognition and surgical relief that does a perforated ulcer of either the stomach or duodenum.

Formerly it was held that ulcer was more frequently encountered in the stomach than in the duodenum. Mayo contends that three-fifths of all ulcers affecting this area will be found in the duodenum. We have learned that as most of the ulcers of the stomach are located at its pyloric end so are those of the duodenum within two inches of the pylorus.

This paper deals with duodenal ulcers which have perforated and not with those which have simply invaded the mucous and submucous coats of the intestinal wall. These perforations can be divided into three groups. In the first the opening is small and has fortunately occurred at a point where contact with other intra-abdominal structures has cemented it over. The perforation in these cases is so slight and has come on so gradually that protective adhesions have formed and the perforation is only recognized when an effort is made to separate the adherent structures. Moreover in this class of cases there has been no apparent infection or at least there has been no suppuration. In the next group while perforation has occurred at the site of an old ulcer the destructive process has again been gradual and adhesions have likewise formed shutting off the affected area from the free abdominal cavity. These cases are usually not seen by the surgeon until a subphrenic abscess or multiple collections of pus have formed. In the third group the perforation has been directly into the free peritoneal cavity. Many cases in the first group may never require surgical attention. The protective adhesions may lead to a complete cure and the disappearance of all manifestations. On the other hand, the perforation may be only temporarily protected and after a time the ulcer may cause further trouble, or the resulting adhesions may cause obstruction or distortion of the intestinal tube.

Duodenal ulcer is usually single. Its primary location is at the point of impact of the acid

chyme. It more frequently affects males than females. I have never had occasion to deal with a case of duodenal perforation which did not present a definite history of previous and usually of long continued disturbance in the upper abdomen. We are beginning to recognize the fact that persisting manifestations connected with the stomach and duodenum are not to be regarded lightly. The diagnosis of acute indigestion so frequently made has as a rule very little merit. The acute affections of the upper abdomen which persistently recur have a pathologic basis and are not merely functional in character. It is time that the general practitioner should realize that attacks of severe abdominal pain in the right upper quadrant of the abdomen are quite as serious as are those affecting the right lower quadrant. The most careful investigation may not lead to a definite decision as to whether the source of the trouble be in the duodenum or gall-bladder or the pyloric end of the stomach or possibly in the pancreas. However, it should establish the conclusion that whatever may be its cause the situation demands more than medicinal treatment, and that we are dealing with a surgical emergency.

Less than twenty years ago very little was written on the subject of duodenal perforation. About that time several important communications appeared in Germany and France. In the year 1900 Dr. Robert F. Weir selected it as the subject of his president's address before the American Surgical Association, although at that time he had operated upon but a single case in which a duodenal ulcer had perforated. Since then, however, as this condition has been more frequently diagnosed, every surgeon of much experience has had a series of such cases.

In making a diagnosis of perforating duodenal ulcer the manifestation which is usually most pronounced and characteristic is the occurrence of sudden intense pain. This is most agonizing and is not relieved by the ordinary dose of morphine administered hypodermically. It is located in the upper part of the abdomen and usually to the right of the median line. Soon there appears localized rigidity and tenderness. The pulse is not at once affected. While frequently there is a degree of collapse with subnormal temperature, it may or may not be pronounced. At times the escape of intestinal gas collecting in the upper part of the abdomen is sufficient to efface the normal lines of liver dullness. As the fluid escapes from the opening in the duodenum it travels down the side of the ascending colon and in the course of an hour or two we may recognize the presence of an area of dullness in the right side of the abdomen. For this reason many of these cases have been mistaken for the perforation of a gangrenous appendix. The pain is so intense that the patient holds himself with extreme rigidity. He resists every effort to move his body. He does not throw himself about as

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oswego, October 3, 1912.

does one suffering from hepatic colic. Surgeons have called attention to this feature as differentiating the condition from that due to gall-stone disease. Depending upon the amount of intestinal contents discharged into the peritoneal cavity there will be the prompt or delayed occurrence of general septic peritonitis. When this stage has been reached we should remember that we are no longer dealing with a duodenal perforation but with general septic peritonitis and that this delay has practically deprived the patient of his opportunity to recover even after the operation. In the cases where localized peritonitis occurs the delay may lead to disastrous consequences. While in some instances the drainage of a subphrenic abscess may result in a permanent cure and by that we mean relief from further evidence of the existence of duodenal ulcer, in others the subsequent course is one of general sepsis. Bruce describes one of these cases in which the operation was not performed until fourteen hours after the occurrence of perforation. About three weeks later a subphrenic abscess was opened and drained and a week from that time the man died suddenly of pulmonary embolism. In one of the cases to be reported in this paper the patient had at the time of admission to the hospital two subphrenic abscesses; one to the right and the other to the left of the median line. The latter crowded the heart upwards so as to force it practically into a horizontal position so that the apex beat was to the right of the sternum. We had assumed in this case that there was additionally a perforation through the diaphragm into the lungs as the man was expectorating pus. When in the first group of cases adhesions have been established between the gall-bladder and the duodenum it is almost impossible to make a differential diagnosis between duodenal ulcer and gall-stones. A case presenting this pathologic condition will be referred to. In this case after having had an attack attended with very acute symptoms a period of more than four years followed during which he was entirely free from digestive disturbance. Indeed he considered himself as cured. Then without warning or provocation the perforation occurred. In reviewing the history of cases of duodenal ulcer it is not unusual to have patients state that they have enjoyed periods of complete or nearly complete freedom from their earlier manifestations. It cannot, therefore, be emphasized too strongly that however thoroughly a patient may be relieved of all symptoms of duodenal ulcer, it is unwise to predict that he is to have no trouble in the future from this source.

I have never encountered a visible hemorrhage as a manifestation of duodenal perforation. In a recent communication we made it clear that profuse intestinal hemorrhage is frequently the result of a toxic erosion of the intestinal mucosa. It might be stated that our past teaching that in

hemorrhage from the duodenal region the blood when discharged is black in color, is not without exceptions. Recently there have been apparently authentic cases recorded in which hemorrhage coming from a point high in the intestinal tract has been of bright red color.

Before presenting the histories of a few illustrative cases, I desire again to emphasize the fact that the sudden occurrence of agonizing uncontrollable pain in the right upper quadrant of the abdomen of such severity that any movement on the part of the patient intensifies it, which is associated with rigidity of the upper part of the right rectus muscle, with a normal or subnormal temperature, a small pulse not at first increased in frequency but increasing in rate from hour to hour, with beginning tympany in the region of the liver and increasing dulness along the outer portion of the abdomen on the right side and which dulness shifts with change of posture; given this clinical picture we are in all probability dealing with a perforated duodenal ulcer which demands immediate surgical attention. At any rate this symptom complex indicates a condition which calls for surgical relief and to temporize with medicinal or other measures is fatal to the best interests of the patient. Dr. W. J. Mayo in a paper presented to the American Medical Association at its meeting in 1906 stated that the result of the surgical treatment of perforated duodenal ulcer depends on its speedy diagnosis and prompt operative relief and that patients operated within the first five hours usually recover, after ten hours the majority of them die.

CASE I. Perforated duodenal ulcer protected by adhesion of intestine to gall bladder; upwards of four years of relief; sudden perforation; subphrenic abscesses; death from pylephlebitis or pyemia eight weeks afterwards.

As illustrating what may occur in cases of the first group, namely where protective adhesions form so that there is no immediate infection the following is instructive.

On March 27th, 1908, I examined a gentleman who resided in New York City. He was forty-seven years of age, had a negative family history, except that his mother probably died of a malignant disease of the stomach. For ten years he had been having transitory attacks of epigastric pain, and during the last three and a half years these had become more definitely right sided, recurring at first every six months and later every three. About three months previously the pain began to appear daily and did so for six or eight weeks. It was never associated with nausea nor vomiting. On the 18th of March, 1908, he was seized with intense pain at midnight. He had eaten a very plain evening meal, and was awakened out of his sleep by intense epigastric pain. On the next day and the day following he had intermittently pains of cutting and stabbing character. The whites of his eyes were jaundiced and he said that after each of

his previous attacks the urine had become darkly colored. On the 19th of March he had a chill and this was followed by a temperature of 103. There was right sided pain and tenderness and his attending physician thought that he had an attack of appendicitis. The patient did not associate the occurrence of his attacks of pain with his meals and was of the opinion that as a rule his severe attacks bore no relation to the character of his meals or the time of eating them. On examination no pain or tenderness was discovered at the site of the appendix nor was there any muscular rigidity either over the lower or upper part of the right rectus muscle. In the right hypochondrium, over the site of the gall bladder there was apparently an area of increased dullness. The patient remained in Syracuse for three or four days. During this time Dr. Elsner examined him with me, and Dr. Coon made a radiograph in which could be seen a shadow corresponding with the dull area we had found and which was presumed to be the gall bladder. By introducing a stomach tube into the fasting stomach each morning it was found that the stomach was at this hour always empty. Upon introducing it at other hours it was learned that the motor power of the stomach was impaired and that food remained in the stomach a long time and when removed several hours afterwards was in a state of partial digestion and exceedingly sour. Repeated examinations disclosed the same area of dullness. We hesitated in making a diagnosis, being undecided as to whether the trouble was of duodenal origin or due to gall stone disease; but both Dr. Elsner and myself were inclined to believe that the latter was the condition present. The patient was advised as to diet and improved so rapidly that no operation was then urged. His improvement continued. He did not consult me again professionally. He remained perfectly well for more than four years. During this entire period he had no recurrence of pain and felt that he was rid of this trouble. However, he was cautious as to his eating and had not in any way been injudicious. On June 29th, of the present year, namely, four years and nearly three months after our consultation, he was taken suddenly sick at noon at his place of business in New York City. A letter from his attending physician informed me that he was called to see the patient early in the afternoon and found him suffering from intense pain in the right hypochondrium which radiated to his back and right shoulder. The rectal temperature was 100, pulse 85. There was no vomiting nor nausea. The tenderness was located directly over the site of the gall-bladder and was limited to that area. The hypodermic injection of morphine afforded no relief. Late in the afternoon at his second visit he noted slight rigidity of the abdomen and a few hours later the rigidity became general, although not

extreme. There was also evident dullness of shifting character in the flanks. The abdominal pain decreased somewhat, but the pain in the right shoulder was very persistent. About twelve hours after the beginning of the attack a surgeon was called in and two hours later the patient was operated. At the operation a perforated ulcer of the duodenum was found close to the gall-bladder which structure was firmly adherent to the duodenum. The opening was closed by suture; and the abdomen irrigated and closed without drainage. For a week everything moved along smoothly. After this the patient began to suffer from a hacking cough and distress in breathing with pain in the lower part of the right chest. On aspiration about a pint of pleural effusion was withdrawn. Subsequently a subphrenic abscess had to be opened, but from this time on the temperature continued to be elevated. Six weeks after the occurrence of the perforation a second abscess containing very putrid pus was drained, but following this the patient ran a decidedly pyemic temperature and died at the end of eight weeks. No autopsy was held and the conclusion of his medical attendants was that death was due to suppurative pylephlebitis.

In this case the original perforation had been closed by the agglutination of the gut to the gall bladder. This explains the train of symptoms which at the time made it difficult to determine whether we were dealing with duodenal or gall-bladder disease. The case particularly emphasizes the danger which may surround a patient who has apparently recovered from a healed duodenal ulcer which had perforated. An operation performed during the period of quiescence of symptoms would have made clear the condition and have obviated probably the fatal termination.

Under the second head we group those cases in which following perforation a localized abscess forms. In these cases while the protective adhesions do not close the opening, they form in such a way as to limit the infected area. Two cases will illustrate the varying pathologic conditions which may be encountered.

CASE II. Duodenal perforation; pleural effusion; subphrenic abscess; incision; slow recovery.

A laborer, thirty-five years of age, with a tuberculous family inheritance, was brought into St. Joseph's Hospital on the afternoon of June 1st, 1908, suffering with intense epigastric pain. For the two preceding weeks he had complained of pain moderate in degree which had recurred daily at 11 o'clock in the morning and continued for the remainder of the day. There had been no vomiting nor had he noticed the presence of blood in the stools. One quarter of a grain of morphia had been administered hypodermically with no relief. His face was anxious and drawn. The tongue was moderately furred. The abdomen presented boardlike rigidity. In the right

upper quadrant of the abdomen there was marked tenderness. The temperature was 98.4; pulse 84. The hemoglobin per cent. and the red blood count were normal. There was leucocytosis of 14,100. It required two additional injections each of one-quarter grain of morphine to make him comfortable. The following morning the temperature was 101, respirations 40 and the pulse 80. The leucocyte count was 16,000; of which 90 per cent. were polymorphonuclears. The abdominal rigidity and tenderness persisted. There was an area of dullness which extended across the upper part of the abdomen. The pain had moderated. On the third day the dullness was more marked to the right of the umbilicus. Liver dullness was absent in front but present in the axillary line. The apex beat of the heart was fully an inch to the left of the left mammary line. There was a marked collection of fluid in the right pleural cavity. This was aspirated and the staphylococcus pyogenes aureus found in it. There was a division of opinion. The medical consultants believed the condition to be one of diaphragmatic pleurisy, while the surgeons considered it to be a perforated duodenal ulcer. In the course of a few weeks the dull area on the right side increased in extent and the right upper half of the abdomen was immovable on deep inspiration. The temperature ranged from 100 to 102. An incision was made and the abscess drained. Subsequently food particles were discharged but the patient gradually recovered and after a few weeks was entirely well. In the more than four years which have elapsed since then he had not had any evidence of duodenal disturbance.

CASE III. Perforated duodenal ulcer; formation of two subphrenic abscesses, one displacing heart upward; coincident pneumonia; death.

On June 8th, 1912, a Pole, who could not speak English, was brought into St. Joseph's Hospital. He was twenty-four years of age, a moulder by occupation, was married and presented a negative family history. Through an interpreter it was learned that he was a man who at times drank to excess and that two weeks before his admission, becoming overheated at his work, drank a quantity of beer. Soon after he was taken down with dull pain and soreness in the epigastrium. He continued to work, however, for the following six days. It was stated that when he ate the pain would be aggravated. On the 6th of June, 1912, after drinking more beer the pain became very severe. He was obliged to take to his bed. He vomited for the succeeding two days. The vomited material was greenish in color. The bowels could not be made to move. On admission it was evident that he was suffering greatly. The knees were drawn up. His color was bad, but he was conscious and rational. Examination showed the excursion of the chest during inspiration to be limited to

the same degree on each side. Tactile fremitus was normal in the upper portion of the chest anteriorly but absent below. Vesicular breathing was normal in the upper part of the chest also. On the right side of the chest between the fourth and fifth ribs numerous crepitant rales could be heard. After coughing coarse rales could be auscultated. Posteriorly the right side of the chest was flat as high as the seventh rib and dullness was present on the left side at its base. Numerous crepitant rales could be made out at the bases of both lungs and the breath sounds were distant. There was an approach to egophony on both sides posteriorly about the ninth rib. The patient's expectoration was purulent. Examination of the heart revealed an interesting situation. The apex was pushed upward and inward so that the beat could be felt at the fourth interspace to the right of the sternum. The abdomen was distended; the right half rigid. There was right sided dullness which changed with the position of the patient. The entire abdomen was tender; the right side more so than the left. Anteriorly as far as the mid-axillary line there was absence of liver dullness. The diagnosis of a perforated duodenal ulcer with abscess formation was made, which presumably had opened through the diaphragm into the lung. An incision was carried through the right rectus muscle and a great quantity of pus discharged. On exposing the abscess cavity an opening could be made out which led to a fistula evidently connecting with the intestines as there was a discharge of intestinal gases from it. A drainage tube was introduced into this canal and during the first twenty-four hours 80 ounces of pus drained away. The free discharge of pus continued for several days and the man apparently improved. But after the third he grew worse and five days later died. A very complete autopsy was made by Dr. Weiskotten, sixteen hours after death. It disclosed two distinct abscesses; one had been drained by the operation and the second on the left side was evidently responsible for the displacement of the heart. The rubber drainage tube had reached the point of perforation in the duodenum. The pulmonary condition was independent of the intra-abdominal condition. The right lung was found affected with acute pneumonia, not apparently due to the perforated duodenal ulcer. This case presented a series of complicating conditions. It illustrates that late operations for the relief of the sequelæ of intestinal perforation may fail because of the impossibility of draining more than one abscess cavity, particularly when the walls which separate them are firmly established.

It is, however, to the third group of cases that I desire particularly to call your attention, namely those in which the perforation opens directly into the free peritoneal cavity and general peritonitis promptly follows. Of several cases

of this kind I select the following as illustrative:

CASE IV. Acute perforation of chronic indurated duodenal ulcer, beginning general peritonitis; operation; recovery.

A young man, thirty-one years of age, unmarried and a dancing master by occupation, was seen by Dr. Heffron on the morning of November 18th, 1911. For a number of years he had been troubled with occasional but slight attacks of epigastric pain and distress which would usually occur an hour or thereabouts after eating. They were never of long duration nor severe. For months at a time he would be free from all manifestations. He gave no history of pain occurring during the night. He had no hunger pains nor hyperacidity of the stomach. However, he stated that during the last year the indigestion had increased. On the night preceding the attack he had worked until midnight and took a cup of tea before retiring. He was awakened at seven o'clock in the morning with agonizing pain in the abdomen. It was about nine o'clock when Dr. Heffron saw him. At that time he referred his most severe pain to the right lower quadrant of the abdomen. The abdominal walls were generally rigid; the upper part no more so than the lower. He also complained of pain in the region of the bladder. The leucocyte count was 30,000. The polymorphonuclear percentage was above 90. I saw him at St. Joseph's Hospital at two o'clock and operated immediately. At the time of admission into the hospital his white count had fallen to 16,000. The pulse rate was 112 and the temperature 98.4 per rectum. The abdomen was greatly distended and rigid. The liver dulness was largely effaced. Immediately upon entering the peritoneal cavity there was a great discharge of intestinal gases. The appendix was found swollen and reddened but not perforated. A perforation was found in the duodenum about two inches from the pylorus. Its base was so greatly infiltrated that it was impossible to close it by suture and a piece of the omentum was sewed over it and the closure effected in this way. The abdomen was drained and closed. The man made an uninterrupted recovery.

These cases emphasize the points brought out in the early part of this paper—namely that the early recognition of duodenal perforation is of vital importance, that immediate operation is not only life saving but that with each hour's delay the dangers increase so that not only may the operation fail to save life but when apparently it is successful, the subsequent complications may cause prolonged suffering and finally end disastrously.

PERFORATING DUODENAL AND GASTRIC ULCERS.*

By GILBERT D. GREGOR, M.D.,
WATERTOWN.

IT would seem almost superfluous to bring this subject before you, as there is so much in the present day medical literature dealing with perforating ulcers. My personal experience during the past two or three years, however, has so impressed me with its importance, that when our president so kindly invited me to read a paper at this meeting, I immediately felt that this was the subject that I would like to take up with you, for I believe that this trouble furnishes us with many of the tragedies that the physician sees in his daily work—and usually they are real tragedies—taking the bread winner from some young family and leaving sorrow and poverty behind.

The first account of a perforating ulcer with autopsy findings was published nearly one hundred years ago, but not until 1894 was a successful operation done to save the patient. In 1896 another successful operation was done. These two cases attracted much attention and since that time successes have become so common and the operation is done so frequently that the main interest in the subject at present, is one of diagnosis.

These perforations occur in chronic ulcers—the perforation is acute, but the ulcer is chronic. It is true we may have a subacute or chronic perforation, but the acute perforations are the more common and the most important, for if anything is to be done to save the patient, it must be done quickly. The family physician is the one to see the case first and upon him rests the responsibility of making the diagnosis and upon his decision, probably, depends the life of the patient. This paper has nothing to do with the pathology or etiology of gastric and duodenal ulcers; I wish simply to call your attention to the symptoms of acute perforation and the importance of early interference. The first and most important symptom is *pain*—this comes on suddenly usually following some exertion. In every one of my own cases some specific act was given as the immediate cause of the pain; in one it was the act of vomiting, self induced to relieve an acid stomach; in another it was straining at stool; in all the others it was some extra lift or heavy work that was being done at the moment of the inception of the pain. Cases, however, are reported that give no such history, the pain beginning when the patient was quiet or even being awakened from sleep in terrific agony. The pain then is sudden in its inception and is intensely severe in its character. I know of no other intra-abdominal catastrophe that produces so severe suffering. Three of my

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oswego, October 3, 1912.

patients gave a history of having fallen over or fainted on account of the intensity of the suffering. The pain is described as boring or tearing and is somewhat paroxysmal in type. It is located in the epigastrium at first, but may be felt in the back. One of my patients located the most tender spot directly beneath the tip of the ninth rib, where a perforation of the duodenum was subsequently found; another one insisted that the pain in the back was as severe as that in the epigastrium. The size of the perforation and the condition of the stomach, whether full or empty, influences the further location of the pain. If the perforation is in the stomach and towards the cardiac end, the pain extends down the left abdomen; if near the pylorus or in the duodenum (the most common location of acute perforations) the stomach and duodenal contents, with an accompanying peritonitis, follow down the right lumbar gutter to the cecum and thence into the pelvis. In this case the storm center rapidly shifts to the lower right abdomen and we have a condition of mimicry to appendicitis with spreading peritonitis, that can easily deceive not only the unwary but the initiated. After having made a correct diagnosis and operated seven cases, in my eighth case I made this mistake. Due consideration of the previous history and the intensity and suddenness of the initial pain, is the only way to avoid this mistake, especially if the patient is not seen for a number of hours after the beginning of the attack. Associated with the pain (and I wish to impress upon you the fact that this pain is one of the most agonizing that human beings are called upon to suffer), is a board-like rigidity of the abdominal wall—this muscular splint is complete over the abdomen and does not for one instant relax; not only is the abdomen rigid, but respirations are interfered with in the effort to hold the diaphragm still, consequently respirations are short and mainly thoracic. Any effort to move or be moved, is resisted by the patient. I saw one patient die with his working clothes on, just as he was carried to his bed from a factory near his home where he had been stricken thirty hours before. They resent even the most carefully conducted examinations. Last winter I was compelled to move one case from his home to the hospital (a distance of fourteen miles), in a sleigh, and despite several hypodermics of morphine, every jar to the sleigh was accompanied by a groan from the patient; oftentimes every breath is accompanied by a groan. Tenderness follows the rapidly spreading peritonitis—usually when seen there is general abdominal tenderness, but the greatest amount of tenderness is found at the seat of perforation. If the perforation be in the cardia, it is located in the upper left abdomen; if in the mid region of the stomach, it is just above the navel; and if in the pylorus or duodenum, it is in the right upper abdomen. This point of greatest tenderness

does not remain long over the seat of perforation, but travels downward with the advancing peritonitis.

One case, seen eighteen hours after perforation, was exquisitely tender over the cecum and but moderately tender over the upper abdomen. Another one, seen eight hours after perforation, was about equally tender in the upper and lower right abdomen, though he was perfectly sure the trouble began in the upper abdomen and had steadily advanced downwards.

Vomiting is common in perforations, but it is not so constant a symptom as in severe cases of appendicitis; in none of my cases has it been a prominent symptom and some have not vomited at all. Vomiting and vomiting blood, is given in some text books as a symptom of importance; vomiting of blood never has occurred in my experience, and fifty per cent. of my cases have not vomited at all. Shock is not an early symptom of perforation. I have been fortunate enough to have seen some of my cases early; one at one and one-half hour, one at two hours and another one at four hours. In none of these cases did the pulse exceed 80. In no class of cases, however, does the pulse so steadily increase in rate and decrease in quality, as hour by hour goes by until a fatal termination is reached—often within the first thirty-six hours. This good quality to the pulse in the face of such excruciating pain, often leads to the diagnosis of neuralgia of the stomach, as in one of my own cases, the attending physician using the pulse rate to support the diagnosis. Despite this good quality of the pulse, the face is drawn and anxious, and the surface of the body is moderately cold. The temperature has no distinguishing feature; it is at first normal, but gradually becomes elevated as the peritoneal invasion is resented by nature.

Much has been written and said about the obliteration of liver dullness in perforations, not only gastric and duodenal perforations, but typhoid and accidental perforations. My personal experience leads me to think that such obliteration of liver dullness in any of these cases is more theoretical than actual. It must be rare that sufficient gas from the stomach or bowels will escape from any of these perforations to obscure in any appreciable degree the normal liver dullness.

It is true that gas will bubble up through the fluid when you open the abdomen, but I have never seen it in sufficient quantities to alter the physical signs. What we do find, however, is dullness rapidly extending downward, either in the right or left lumbar gutter, depending upon the location of perforation, as the fluid contents of the stomach or duodenum is poured into the peritoneal cavity. To this fluid is added the peritoneal exudate excited by the invading fluid, and it really is astonishing, the amount of fluid found in the peritoneal cavity within a few

hours after perforation. It is usually not a question of sponging this fluid out, if you are pressed for time, but tipping the patient over and allowing it to run out. In one case of duodenal perforation, seen six hours after perforation, there was flatness on percussion on the right side to the crest of the ileum, but not extending toward the median line farther than the outer border of the rectus muscle. At that time I did not know how to explain this phenomenon, but subsequently I learned that fluid from the vicinity of the pylorus passes around the hepatic flexure of the colon into the right kidney fossa, and then around the cecum into the pelvis. The colon is pressed toward the median line and we may have a regular lake of fluid in the right lumbar gutter with but little invasion of the balance of the peritoneal cavity. This is a fortunate circumstance, as after operation extensive drainage is unnecessary.

In another case operated twenty hours after perforation, not only was the right lumbar gutter full of fluid, but the liver was surrounded with it as well. Talk about liver dullness being obliterated by gas! In this case the liver was drowned in fluid.

It is scarcely necessary to go further with the symptoms of perforation—the subsequent history is that of general peritonitis going rapidly forward to a fatal termination. The majority dying within sixty hours after the accident.

It is possible for a patient to recover after perforation without surgical interference, but such a possibility is so remote that it is not to be considered in the prognosis. Such recovery is brought about by the closure of the perforation by a plug of mucous, a bit of omentum, and even the gall-bladder has been reported as having filled the breach long enough for nature to build a wall about the seat of the disaster. If the diagnosis is to be made from the symptoms and physical signs, it must be made early, before these symptoms and signs are over-shadowed by those of general peritonitis. In making the diagnosis either early or late, the prior history is of the utmost importance. In nearly every case there is a distinct history of stomach difficulty, and it usually happens that the perforation occurs while the patient is under treatment for this condition. It is not necessary that the diagnosis of ulcer should already have been made—in only one case was this done for me—but there is a history of indigestion, sour stomach, acid eructations or pain and distress after eating. In one of my patients, when asked if he had not had a prior stomach trouble, he replied, "*Never*, my stomach is the best part of me; for ten years I have been suffering pain, and eating is the only thing that relieves it, so I know my stomach is all right." Here was a case of duodenal ulcer, with Moynihan's diagnostic hunger pain. That remark with his symptoms, made the diagnosis of

a perforated ulcer easy. In only one case did I fail to get such a history—this was the case that I diagnosed as appendicitis. The patient positively denied ever having had any distress or pain after eating; any acid eructations or symptoms referable to a stomach or intestinal indigestion. He was taken violently ill while straining at stool and had to be helped to his bed, from which time the symptoms were classical of perforation, but from the absence of prior history and the mimicry to appendicitis when I saw him twenty hours later, I made the error of calling it appendicitis. This mistake should not have been made, as the symptoms were too sudden and violent for appendicitis, and the progress of the peritonitis was vastly more rapid than that that is associated with appendicitis. There was also complete absence of vomiting—another very significant feature of the case.

Moynihan of Leeds says that he never has seen a case of perforation but that a history of pre-existing ulcer could be obtained. In this case after the diagnosis had been corrected at the operation, his wife told me that he had had stomach trouble for years, nothing very severe, but of sufficient importance to make him very discreet in his diet. Another peculiar coincidence in connection with this case was that within a week of the operation, his brother consulted me for stomach trouble and I found that he was unquestionably suffering from duodenal ulcer also.

Besides appendicitis, a perforating ulcer of the duodenum or pylorus might be mistaken for acute pancreatitis or acute gangrenous cholecystitis. Acute pancreatitis is a less frequent disease than a perforating ulcer. It is marked by a bad pulse from the beginning and vomiting is a distressing symptom. There is also the absence of a previous history of ulcer.

Gangrenous cholecystitis is usually associated with gall stones and with the dyspeptic symptoms that go with gall-stones and the history of gall-stone colic. This disease is less rapid in its progress; the pain and maximum tenderness remains in the upper right abdomen and there is no indication of the accumulation of fluid in the peritoneal cavity.

For the general practitioners, however, it is not necessary to draw the line sharply in making the diagnosis in any of these acute abdominal crises. They are all surgical conditions that need prompt aid. If that fact is recognized and the case turned over to the surgeon early, the general practitioner has done his full duty to the patient. This waiting for symptoms to develop to be sure of your diagnosis is pretty liable to be waiting until the patient needs an undertaker instead of a surgeon. A country practitioner expressed this idea to me this summer. He brought a case into the hospital in the night, and when I met him there he said to me, "Doctor, this patient is very seriously ill. I do not know what

his trouble is, and perhaps you don't, but I do know that he needs a surgeon instead of medicine." He was perfectly right, as it was a case of pyloric perforation, and the doctor bringing the case into the hospital without delay, enabled me to not only close the perforation, but to do a gastro-entrostomy as well.

Once the diagnosis of a perforating ulcer has been made, the treatment is purely surgical—opiates may be given, but they should not be used until the diagnosis is clear and plans for operating are under way. It should always be remembered that there is nothing curative about the opiate—it may create a false appearance of betterment in the patient which simply leads to delay in operating and every hour's delay decreases the chances of the patient's recovery after operation.

Early operations being imperative, it is fortunate that these cases are always seen early by some medical man. The on-set of the disease being so sudden and the pain being so severe, they are bound to get assistance as soon as possible. An appendix may go bad without presenting any marked symptoms, even before the patient realizes he is seriously ill, but when an ulcer perforates, not only the patient, but the patient's friends realize that there is something radically wrong, and a doctor is secured as soon as possible.

The surgical treatment is closing the ulcer and draining the peritoneal cavity. Once the leak is stopped the peritoneum will take care of much of this peritoneal exudate and foreign fluid. The ulcer is closed with fine catgut sutures, either by a purse string ligature or a few interrupted Lambert sutures. These are covered with a second layer of sutures of some non-absorbable material, silk or linen. If the operation has been delayed a number of hours after the perforation and there is much fluid in the peritoneal cavity, a second abdominal incision may be necessary to drain the pelvis or either kidney fossa.

I have never taken much pains to flush out the peritoneal cavity or to spend much time sponging—much fluid will run out of the incision when the abdomen is opened; the abdominal pads used to isolate the field of operation will absorb much more during the course of the operation, and the balance I have left for a cigarette drain at the site of the perforation and a split rubber tube with a wick in it in the pelvis or either kidney fossa to care for what remained.

The success of the operation depends mainly upon the time it is done after the perforation—the earlier the operation the more surely successful it will be. An operation done twenty-four hours after perforation, may be a late operation; some cases die without operation during the first twenty-four hours; a large perforation occurring shortly after a hearty meal giving us the more rapidly fatal cases.

There has been much discussion recently regarding the advisability of adding to the closure of the ulcer a gastro-enterostomy, as the routine treatment of the perforating ulcer; the object being to drain the stomach and prevent the recurrence of the perforation or the perforation of a co-existing ulcer. The chief object of operating an acute perforating ulcer is the preservation of the patient's life. Many of them come to us in a bad way and anything that prolongs the operation diminishes the patient's chances of recovery.

To add to the operation a gastro-enterostomy, which means from fifteen to thirty minutes more time, would destroy what little chance the patient had to recover. The cure of the condition existing prior to perforation, if susceptible of cure by gastro-enterostomy, had better be left to a more favorable opportunity. If, however, the case comes to operation early, if it be a duodenal or pyloric perforation, then a gastro-enterostomy is clearly indicated and can be done without adding scarcely anything to the risks of the operation.

The closure of an ulcer, especially a duodenal ulcer, by sutures and the recovery of the patient, does not mean a permanent cure in all cases; there may be other ulcers that will subsequently perforate; many such cases are reported in medical literature.

I have recently operated a patient for his third duodenal perforation. The first time I operated was in March, 1910; the second time was in July, 1910. Both times the condition of the patient was precarious, and I simply closed the ulcer and drained; both times he had a stormy convalescence. The last time, however, in July of this year, I saw him two hours after the perforation, closed the ulcer and infolded the duodenum so as to pretty well obstruct its lumen and then did a gastro-enterostomy. His convalescence was perfectly easy. His condition now is satisfactory and I hope he is permanently cured.

My personal experience in perforations during the past three years includes nine acute and two sub-acute perforations. I have been extremely fortunate in having all of these cases recover. Of the nine acute cases, one had a duodenal fistula on account of unsatisfactory closure of the ulcer, which, however, closed spontaneously within three months; in three of these nine cases I added a gastro-enterostomy to the closure of the ulcer.

I have refused operation on two cases of undoubted perforation, both dying within a few hours of my visit. All the operated cases are in good health and without stomach symptoms; one, however, nine months since operation, has a suppurating sinus at the upper angle of the wound, extending evidently between the chest wall and the liver, this may require a second operation to close.

THE CANCER PROBLEM.*

By LA R. COLEGROVE, M.D.,
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IT is not that I have anything new to offer as a reason for bringing this subject before you for discussion, but because it will only be by the frequent repetition of well established truths in reference to cancer as revealed to us by experimental research and practical clinical experience that its importance will receive just recognition.

What are some of the known facts in regard to cancer upon which the medical profession is united, that may be given to the public, so that they may assist us, as they did in tuberculosis, in disseminating broadcast life-saving knowledge, thus aiding us in checking a disease whose death-rate for certain age period exceeds that of any disease, even tuberculosis, and that also at an age of the greatest usefulness and productivity. It is estimated that one out of every eight women and one of every eleven men, after the age of thirty-five, die from cancer. Gaylord in his last report stated that the mortality from cancer in the United States for the year 1910 exceeded 75,000, and the morbidity was over 200,000. For the same year in New York State the mortality was 7,500, an increase of 470 over the previous year, with a morbidity of over 20,000. Crile has estimated that there are over 80,000 people in the United States, who are apparently well at this moment, that will be afflicted with incurable carcinoma within six months. In view of these figures is it not time that some concerted action should be taken to check this terrible onslaught on human life? This appalling death-rate is in part due to the fact that physicians have in the past been devoting their best efforts in trying to find a cure for cancer rather than what is infinitely the more important question—its prevention.

This retarded educational publicity is undoubtedly due to the divergence of opinion in the medical profession as to its causation.

Up to within the last ten years what knowledge we had as to the pathogenesis of cancer was largely gained by the aid of the microscope in the study of dead tissues. About 1900 a new era was opened in the study of cancer through the investigation of Hanau and Morau, by the transmission of cancer from one animal to another of the same species, so that today cancer research has assumed the importance of an experimental science.

I heard Bashford, the director of the Imperial Cancer Research Laboratory of London, in his address before the International Congress of Medicine at Budapest in 1909, state that the transmission or propagation of cancer from one

animal to another of the same species was simply a matter of laboratory routine and lacked nothing in completeness. That infection plays no role in the artificial transmission of cancer, that it is simply a transplantation of living cells. Through the classical researches of Jensen in 1903, much light was thrown upon the biology of normal tissues and tumor growth. He not only confirmed the findings of Hanau and Morau that the new growths were histologically identical with the original growth, but that the new growth was simply the continued growth of the mother or parent tumor, parts of which had been introduced.

In light of the progress that the study of cancer has made through animal experimentation, I wonder if those that are so opposed to vivisection would continue to raise their voices against it should they themselves fall victim to the disease.

I will not take up your time in speculating upon the various theories which have been advanced for the essential cause of cancer, although much light has been thrown upon its etiology by comparative experimental study, much has been learned as to the physiology of normal tissue and tumor growth. This experimental investigation has been the means, at least, of disposing of many of the old hypotheses concerning its origin, as hereditary, congenital, embryonic or regenerating tissue cells. It also has shown that it has no analogy to any known form of infective disease. I think most investigators are united in the belief that it is not due to any one specific causative organism.

I must speak especially in reference to one theory which to me seems more logical than any, the one revealed through the recent research work of Ross of Liverpool. He has been able to demonstrate *in vitro* the actual proliferation or growth of human living cells, causing at will their excitation and the diffusion of various substances into them with a mathematical precision, watching their mitotic division from beginning to end, and producing their death at will. While, as he states, the leucocytes have been recognized since 1773 and observed by every medical man, yet no one has ever seen them undergoing division until Ross discovered this process.

After mixing the blood with an equal volume of citrate solution, which prevents its coagulation and which sustains the lives of the corpuscles to a remarkable degree, it is placed upon a jelly film in which is incorporated any stain or substance desired to be diffused into the cells and the effects watched under the microscope. This investigation has been the means of throwing much light upon the normal tissue growth and repair. We all knew that the phenomena of healing was due to the proliferation of cells, but when we were asked as to what made these cells proliferate we did not know, and for want of a better answer we said it was due to some vital regulating center of those cells, or some intrinsic

* Read at the annual meeting of the Seventh District Branch of the Medical Society of the State of New York, at Corning, October 10, 1912.

property of the cells which caused them to do so. We know now, thanks to the researches of Ross, that cell proliferation is a physiological process dependent upon the absorption of certain chemical agents or excitors of reproduction known as auxetics, some of which have been isolated in crystalline form as kreatin, xanthin and the globin from the blood, and that these agents are found in the remains of all dead tissues.

So, for instance, after an injury which has produced local cellular death these chemical substances are liberated which are taken up by the neighboring cells, causing them to proliferate and thus repairing the injury. In short, cell multiplication or proliferation is a physiological process due to the absorption of certain chemical agents which are found in the liquid remains of all dead tissue, making cell death and cell birth intimately associated.

The rapidity and extent of cell proliferation is dependent upon several factors, as the amount of auxetics present, "coefficient of diffusion" vitality of the cells, time and elimination. Should the elimination be impaired or impeded with an excess of the auxetics we have granulation tissue.

Having discovered that the mitotic division of the cells were due to certain chemical agents, and that epithelial cells responded to the same agents and that the action of these chemical agents were greatly augmented by the presence of certain alkaloids, the question naturally suggested itself—what relation, if any, do these substances bear to cancer?

Cancer is a growth of human cells, a malignant ceaseless proliferation with infiltration, and any hypothesis concerning its origin must coincide with certain indisputable facts such as the "age incident."

Cancer is a disease of senescence, attacking people as a rule between the ages of forty and fifty-five, during the prime of life, at the time of the greatest cellular vitality. No other disease is known to have such striking characteristics as to age period. What then is there in our bodies at this period that predisposes us to this terrible disease. May not the increased amount of these chemical agents in our system at this time be the basal cause? It is a well known physiological law that cellular birth and death is continually taking place within us—the births predominating up to the age of thirty-five, during the growing period, at which time man is said to have reached his physiological prime; between the ages of thirty-five and forty may be called a period of cell equilibrium of cell poise, but after the age of forty man is, physiologically speaking, on the downward trend, his cellular death rate exceeding the births, and in consequence of this there is produced an increased amount of those chemical agents which have proven to be the exciting cause of cell proliferation. To be sure this cannot be the sole cause

for cancers; were it so, every person above forty would have it. There must be something else.

Ross and his co-workers found that certain alkaloids augmented or increased the action of these auxetics in producing cell proliferation at times causing an augmented asymmetrical one. Among the alkaloids which have this property are those resulting from putrefactive organisms such as choline and cadaverine. This is given as an explanation for the rarity of cancer amongst the Esquimos, where in that climate the putrefactive changes are necessarily reduced to the minimum. This theory explains the close relationship that chronic irritation has always borne to cancer, by causing cellular death with the liberation of these chemical agents.

Ross' theory is, that cancer is caused by the union of these natural auxetics with bacterial ptomaines or leucomaines in certain proportion, and at a time when the cellular vitality is not impaired, as we seldom see cancer starting in the very aged or those greatly reduced.

Cancer is usually situated upon the site of an old irritated process, which has produced a local cellular death, with the liberation of those chemical agents which are known to be the exciting cause of cell proliferation, and at a place in our bodies in which putrefactive organisms are most likely to be found, such as the rectum, intestinal tract, stomach, and those organs adjacent to the intestinal tract, as the liver, gall-tract, and head of the pancreas. The uterus and breast are subjected monthly, during their functioning period, to a certain amount of traumatism, at the climacteric, they are accompanied by increased cellular death, and during this time various avenues of infection have been opened, whereby the putrefactive organisms might easily have gained access. That kreatin in combination with the alkaloids of putrefaction will cause *in vitro* an augmented asymmetrical cell proliferation has been well established. Ross then applied these agents *in vivo*. Upon an old broken-down inoperable scirrhus tumor of the breast he applied a mixture of kreatin and globin. The gradual change that took place was remarkable. The abnormal proliferation and infiltration was changed to normal cells. He then applied a mixture of kreatin with choline, one of the alkaloids of putrefaction, and these normal cells were reconverted into malignant ones. Whether putrefaction upon an old healing site is the cause of cancer time only will prove.

These experiments are of recent date. Sufficient time has not elapsed to subject them to thorough test. They have been the means at least of opening up a new avenue of thought, showing that progress is being made in cancer research.

While we may say, at the present time, that the essential cause of cancer has not been fully established, there are many well known facts

and various avenues of cancer approach upon which the public should be enlightened.

Cancer is a universal disease. It occurs throughout all races of mankind, even through the entire vertebrate kingdom. In animals so remote as man and fish the disease is said to be identical. Trout is especially prone to cancer, so much so that in some localities it has assumed the form of an epidemic. Largely through the influence of Gaylord, Congress was appealed to for the purpose of erecting and maintaining a biological station for the study and control of the disease in fish.

Domesticated animals are more susceptible to cancer than those in the wild state. This is not due to any contamination with man, but simply owing to man's tender mercy, more attain the cancer age, as the law of "age incidence" is applicable to all animals. The public must be informed that at the beginning cancer is a local disease and as such may be completely eradicated.

That external irritation either prolonged or intermittent in character is closely associated as an exogenous causative agent.

Bashford states that the incident of the disease in various countries is dependent more upon external irritation than any peculiarities referable to race, climate, soil or diet. As cancer upon the skin of the abdomen is practically unknown in Europe and in this country, but very frequent in Kashmir, where the natives have the custom of wearing upon the abdomen in winter an earthenware or charcoal oven. The irritation thus produced with the actinic rays is frequently the cause of cancer. Cancer of the mouth in men is not uncommon in this country, in women it is rarely seen. It is very common in Ceylon and India, where the women have the habit of chewing betel-nut and sleeping with the plug in the mouth, the irritation thus produced being frequently the site of cancer. The X-ray cancer and the one resulting from the short stem pipe of the smoker are familiar illustrations showing the close relationship existing between chronic irritations and cancer.

The irritation from chemical agents, as the chimney sweep cancer, and workers in arsenic, paraffine and aniline, are frequently the subject of cancer.

The connection between irritation and internal cancer, as in the stomach and rectum, must not be underestimated.

The public must be informed that there is a precancer stage, and it is at this time that they should present themselves for treatment. That all growths upon the surface of the body are abnormal and should be removed, no matter how small or innocent, as warts, congenital moles, especially when they show signs of growth, ulceration or scaling, as it is impossible to tell at what moment they may pass the border line into malignancy.

All fissures and open sores that fail to heal readily should be looked upon with suspicion,—especially those located at the mucocutaneous junction of the lower lip.

All tumors and nodules in the breast, above the age of twenty-five, should be removed and not wait for the signs of malignancy, as the more easy the diagnosis of malignancy the more fatal the prognosis.

Women should be impressed with the importance of consulting their physician for a thorough examination at the first appearance of any atypical or excessive flowing, at or near the menopause, as cancer of the uterus is very insidious in its onset. They should be told that pain and offensive odors are late symptoms.

All fibroids should be removed, especially when they commence to give trouble, the choice of operation depending upon age. Myomectomy in the young, myohysterectomy in others, as it is impossible to tell at what moment they may undergo degeneration.

In view of the frequency in which cancer of the stomach is situated upon an old ulcer, should not ulcer of the stomach be regarded as a surgical rather than a medical disease? In cancer of the stomach to wait for the classical symptoms such as tumor, Boas-oppler bacillus, vomiting, cachexia is too late.

The public must be informed that at present we have no cure for cancer, other than surgery, and for this to be effectual it must be applied early while the disease is still confined to a circumscribed area, and not wait for the signs of fatal malignancy.

But when these latter cases do present themselves, which unfortunately, is too frequent, we should not throw up our hands in despair and pass death sentence upon our patients, thus driving them in the hands of quacks. We should endeavor in every way to raise the resisting power of that patient, trusting that it might prove to be one of those cases of self cure. Remembering the old saying that "an incurable disease may sometimes be cured, by curing all the curable ones in sight."

I venture to predict that within the next ten years, even though the essential cause of cancer be still undiscovered, that if the public will heed these pre-cancerous conditions, and if the physicians will give to chronic irritation the importance it deserves in relation to cancer in such conditions as cholelithiasis, gastric ulcers, lacerated cervixes, enlargement of the prostate and others, in which chronic irritation is prominent, and remembering that all growths upon the neck, body and extremities are at the beginning benign in character, and that it is at this time they should be removed and not wait for the development of malignancy. If these precautions are heeded the mortality from cancer within the next ten years will be greatly reduced through the instrumentality of preventive surgery.

THE EARLY DIAGNOSIS OF INTESTINAL CANCER.*

By FREDERICK H. NICHOLS, M.D.,

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IMPROVEMENT in the mortality rate from cancer can come in three ways: earlier diagnosis, earlier operation and wider excision.

The early diagnosis of superficial cancer is often a difficult problem and many times definitely settled only by the microscope during or after the operation. Intestinal cancers are very much more difficult to recognize, and it is at times impossible to draw any conclusion beyond the fact that there is something serious the matter, its exact nature unknown to us, but which ought to be subjected to an ocular examination.

I am gradually growing into that frame of mind, which makes it necessary in intestinal disturbances, to prove that the condition is not cancerous rather than to leave this as the last alternative. It is wise then, I think, to suppose that cancer may be present and arrive at the true diagnosis by exclusion. In order to keep within the time, I shall limit this paper to a brief consideration of cancers of the small intestine below the duodenum and of the large intestine above the rectum. Inasmuch as cancers of the small intestine bear a very small ratio, one to ten, to those in the large bowel, this paper virtually deals with cancer of the colon, with brief references to growths in the small intestine.

Although there are a variety of malignant growths which may invade the small and large intestines, carcinoma occurs so much more frequently than all the others that it is a safe statement to make that tumors of the intestine are almost invariably carcinomata. They are not very malignant at first, grow slowly around the lines of the blood and lymphatic vessels and with only a moderate tendency to invade the lymphatic nodes or other organs until late in their course. The cancer ring around the intestine is often very narrow, less than an inch in width and not more than one-quarter of an inch in thickness. Its constructive symptoms are not due to a large mass of cancerous tissue, but to the constriction and finally total occlusion of the intestinal canal by the constriction of this narrow cancerous ring.

The symptoms of intestinal cancer may be considered under three heads or stages:

1. The stage preceding constriction.
2. The stage of constriction or partial obstruction.
3. The stage of obstruction.

This classification is purely arbitrary, one stage merges into another and all are only phases of the onward march of the disease to a fatal termination. Yet a consideration of the symptoms under this classification is not without some ad-

vantage, for it may serve to fix our attention upon some few symptoms in the earlier history of the growth so that, when the next case comes to us, we may suspect the cause and secure an operation before the onset of terminal symptoms.

In all stages of cancer the symptoms may be considered under two heads: those produced by and due to the growth, *per se*, and those caused by its effect upon the function of the bowel.

During the stage preceding any constriction of the bowel there are no symptoms due to the growth itself, these (pain, emaciation, tumor, toxæmia) are only late manifestations of the malignant process and, when present, indicate an absolute hopeless condition. The effects upon the function of the bowel are slight, if any, so slight that, as a rule, the physician is not consulted. Practically, we are at present powerless to make a diagnosis in this stage. We are groping in the dark. The earliest symptoms we could expect would be those of intestinal indigestion, a very indefinite phrase that covers anything from over-eating to the early symptoms of cancer, or from gall-stones to chronic appendicitis. Be this as uncertain and indefinite as it is, we can yet hope that we may become sufficiently interested in such a case of intestinal indigestion proving rebellious to ordinary treatment, to carefully consider the possibility of something serious as the etiological factor, and thus be on the lookout for the earlier symptoms of partial obstruction.

The earliest symptoms of the stage of constriction of the bowel, those which attract the attention of the patient to himself, are indigestion, constipation, gas in the bowels and attacks of colic which gradually grow worse.

Gas accumulates, there is a feeling of fullness and discomfort after eating, while nausea and vomiting will appear later. Constipation is the one significant symptom which must be carefully investigated. It is steadily progressive and cathartics must be taken in increased doses to obtain any results. With this there is growing frequency and severity of the attacks of colic. To avoid errors in diagnosis, our examination must be methodical, careful, critical and exhaustive. First, the history: this must be complete and minute; second, the physical examination: inspection, palpation, percussion, auscultation, sigmoidoscopy, are all systematically employed. Third, the examination of the stool: the macroscopical examination takes in color, consistency, form, food remnants, pathological constituents—as blood, pus, mucus, foreign bodies, concretions, gall-stones, etc.

The microscopical examination covers, besides food, pus, mucus and food remnants, the possibility of cancer tissue. As the constriction increases, the colicky attacks become more numerous and severe, the gas will be heard and may be felt in accessible portions of the abdomen passing through the constricted intestine. As a result of the obstacle to the fecal current, the

* Read at the annual meeting of the Eighth District Branch of the Medical Society of the State of New York, at Buffalo, September 24, 1912.

segment of the intestine above the constriction becomes hypertrophied. During the attempts of the bowel to empty itself, active peristalsis may be visible through thin abdominal walls and the intestine may be felt as an elongated, stiffened mass. Diarrhea may alternate with the constipation, because a catarrh of the intestine develops above the constriction, the free secretion mixes with the feces, softens and liquefies them, so that a looseness of the bowel results. After a few movements, however, the constipation is again present as bad as ever. The feces may be pencil or ribbon-shaped, or they may be in small lumps. They may be foul smelling and blood, pus and mucus may be present. This is not constant and still more rarely is cancerous tissue found in the movements in this or the last stage. The degree of interference with the fecal current depends a good deal upon the location of the lesion.

If in the small intestine or in the beginning of the large, inasmuch as the contents of these portions of the bowels are fluid, constipation develops slower and later than when the growth is located lower down in the colon.

WHERE IS IT?

Without a tumor being present and depending upon the symptoms and our means of examination, we may arrive at the probable location of the lesion in the following manner: rectal injections of plain water or normal salt solution will afford some clue. If a small quantity is quickly expelled from the rectum, the lesion is probably in the upper part of the rectum, if several pints are injected without returning, the trouble is probably at or above the *sæcrum*. With intermediate quantities retained the lesion may be estimated to be somewhere between these two points, with the sigmoid as the favorite location. Gas also may be injected into the rectum and the distension of the bowel followed by palpation and percussion to the *cæcum*. Its arrest signifies the probable location of the constriction. The most valuable means we have at present for locating a constriction in the colon is by the X-ray photograph of the large intestine after it has been injected with a bismuth emulsion. Should the cancer be located at its most usual site, the lower end of the sigmoid, the narrowing in the lumen of the intestine may be seen through the sigmoidoscope and its calibre ascertained by graduated, olive-tipped bougies.

WHAT IS IT?

Bands and adhesions from previous operation are ruled out by inspection of the abdomen; hernia, by examination of the various hernial rings; tumors of the neighboring viscera; distended gall-bladder, ovarian cysts, fibroid tumors, pregnant uterus, the sausage-shaped tumor of intussusception, can be negated by abdominal,

rectal and vaginal examination. A fecal mass, polypus, enterolith, gall-stones or worms form a tumor possibly palpable. Here the preceding history, onset and course of the disease and urinary and fecal findings will aid in making a correct diagnosis.

In reference to a fecal tumor, it must be remembered that it may form above and around a cancer so as to mask the real growth. It may also present the hard, nodular contour of a carcinoma. However, it can be indented and compressed between the fingers and it will not resume its previous shape.

The narrowings which follow tubercular, syphilitic and fecal ulcers, will require careful examination. Tubercular ulcers are most common in the lower part of the ileum, where Peyer's patches are most numerous. Tuberculosis elsewhere and with tubercle bacilli found in the feces, which is rare; the history of an initial lesion or secondary symptoms will assist to a correct diagnosis.

The one condition that will require careful consideration, in the stage of constriction, is chronic spastic constipation. There is indigestion, gas is present, there is intestinal colic of varying frequency and severity, the large intestine may be palpable, as a hard, contracted, tender tube and the stools are hard, small calibre and contain more or less mucus and blood; however, proper treatment and diet, extending over a reasonable time will relieve the condition and normal movements be obtained with disappearance of the symptoms.

A chronic intussusception which has existed for several weeks will cause but little trouble in making a diagnosis. The youth of the patient, the sausage-shaped tumor and bloody mucus stools and possibly a tumor felt through the anus, will make a diagnosis plain.

The early operation during the stage of partial obstruction promises fair results. The growth, as a rule, has not invaded the lymphatic nodes or other organs, the intestine above the constriction is not much larger than that below it, the patient has not been poisoned by the cancer nor by the prolonged absorption of toxic intestinal products. He has not been weakened by suffering. He is, therefore, in a fit condition for the major operation of intestinal resection and anastomosis, with a fair chance of permanent result. If recurrence does take place, it is apt to be retroperitoneal or in some other organ, chiefly the liver, and the patient dies from cancer and not from intestinal obstruction. He makes his exitus in comparative comfort and not in agonizing suffering.

THE STAGE OF OBSTRUCTION.

This is the last stage. The conditions are acute and the indications imperative. The obstructed intestine must be relieved at the earliest possible moment.

SYMPTOMS.

The stage of obstruction is usually abruptly ushered in. In a few hours the patient may be in collapse and practically moribund. At other times the progress toward a fatal ending is more gradual. *Obstruction of the small intestine* gives the most severe symptoms. The higher the lesion the more acute the effects. There is vomiting, early, persistent, rapidly becoming fecal. The distension of the intestines and stomach forms a prominence about and above the umbilicus. This distension may be relieved to some extent by the vomiting, to rapidly reappear. The lower and lateral parts of the abdomen are retracted. Pain and prostration is severe. Rectal injections bring down large fecal movements without in any way alleviating the condition of the patient. The urine is very scanty and the indican element is greatly increased.

With obstruction in the colon, the symptoms develop more slowly. The distension of the intestine gradually extends upward, reversing the course of the intestine. It appears at first in the hypogastric region, with sigmoid obstruction, then in the left flank, then across the upper part of the abdomen, next into right flank and finally expands the central portion of the abdomen as the small intestine becomes distended. At the beginning of the attack, before the intestine is paralyzed by the over-distension, violent peristaltic movements may be seen in thin-walled subjects. Vomiting supervenes late and only at the last is it fecal. Rectal injections produce no fecal results and even gas does not pass the bowel. *If the cæcum is the region involved*, the clinical picture is more acute than this and less so than when the small intestine is the seat of the lesion. The middle portions of the abdomen are distended first and the flanks are retracted and dull to percussion.

With complete obstruction anywhere in the canal, the *final* picture is the same. The abdomen is distended to the limit, the diaphragm is elevated and the liver dullness lost. The urine is diminished. There is fecal regurgitation, hippocratic visage, coma and death.

THE DIFFERENTIAL DIAGNOSIS.

Strangulated herniæ are ruled out by the examination of hernial orifices. Tumors in the pelvis are ruled out by examination of the rectum or vagina or both.

Volvulus is usually in the aged, is rare at any time and is one of the least frequent causes of obstruction and peritonitis supervenes early. With volvulus, kinks and twists, there is a history of previous good health and sudden onset of obstruction. Pain is a marked symptom, vomiting is late, with a low twist, but early with one high up. Only rarely will acute obstruction from cancer be confounded with acute pancreatitis or acute poisoning with collapse and vomiting.

Colics with constipation, of hepatic, renal or

intestinal origin would be cleared up after a careful history and an analysis of the clinical symptoms.

In obstruction from peritonitis there is a preceding condition, such as inflammation of the appendix or acute gonorrhœal inflammation in the woman or possibly a pelvic peritonitis following abortion or child-birth. A ruptured ulcer of the stomach, duodenum or gall-bladder will give a history of onset and course with clinical symptoms unlike those of cancerous obstruction. In any event, in all of these conditions, except that of peritonitis following acute gonorrhœal inflammation in the woman, the indication is for immediate operation.

To wait for the appearance of a tumor in chronic bowel troubles when there are symptoms of stenosis which do not disappear after careful treatment for a reasonable time, is to miss the golden opportunity and invite the inevitable fatal result.

PULMONARY TUBERCULOSIS OF THE
PREGNANT WOMAN.*

By A. JACOBI, M.D.,
NEW YORK CITY.

THE material from which I draw when I speak of tuberculosis in pregnancy, is fairly large. I have been in an extensive practice 59 years, and have been rather fortunate in securing more opportunities to make observations than those of you who have looked for and secured employment amongst the well-to-do only, or the rich. Those of you who have thus succeeded know very little about tuberculosis, for tuberculosis is mostly a plague of the poor. Fifteen to twenty years I was in a rather extensive obstetric practice amongst the poor and lower middle class, rather repelling than seeking rich clientele, and a very large office work has afforded me up to this very day, many opportunities for studying tuberculosis. To learn about infectious and contagious diseases you must work amongst the poor. It is they that teach us nosology and etiology, and the appreciation of tuberculosis of the lungs, of the glands and bones; tuberculosis both chronic and acute in its nature as a social problem. Some of you may gradually appreciate that of our doctors those who practice amongst the people are better doctors and better citizens. The gospel which tells you that no rich man ever gets to heaven may exaggerate quite a little, but we, the hard working general practitioners, have the better chance.

Prevention of tuberculosis in pregnancy is easily advised; not easily accomplished. Prohibit marriage if you can. An incipient case

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will mostly get worse during pregnancy or after confinement. Try rather to cure a case before permitting matrimony; recoveries are almost always slow and ability to work is not identical with recovery. Married people with tuberculosis should prevent conception, sleep in separate beds, if possible in separate rooms—an impossibility, however, amongst most people. Cohabitation should be had with a condom; or after cohabitation a warm vaginal injection slightly acid should be made; no intra-vaginal pads or sponges should be used for any length of time. I cannot deny that this habit may be useful in many a case, but great care should be taken. I am quite sure that many a case of chronic parametritis has been due to it. I see a great many in office practice; a good deal of the female invalidism is caused by it. Is "coitus interruptus" as bad as it is reported to be? No uniform answer can be given; according to whether the object of sexual intercourse is accomplished or not. That object is either the propagation of the race—which should be avoided by the tuberculous woman—or the mere gratification of sexual desire which is justified. A man does not suffer much if at all from completing his object extra-vaginally; a woman will become neurasthenic or hysterical when she is prevented from satisfying a legitimate orgasm. It takes a husband of character and judgment to learn how to accommodate himself to the needs of the case in which he should give as well as take.

Tuberculosis of the pregnant woman may mean either an incipient case—sometimes hardly diagnosticable, or an advanced case with infiltrations localized, disseminated, or generalized; or an open suppurating case mostly with mixed infection. These later may be called "consumption" within the hearing of responsible friends or relatives. The word itself is odious and should never be used in your intercourse with your patients. They are all cases of "tuberculosis." The term should be used, firstly because it is correct, secondly because it does not prevent hope.

Incipient tuberculosis is capable of running its full mild course through pregnancy, though the diagnosis be undoubtedly clear. Now and then the woman is not harmed. A young woman was seen and treated by me when she was between 16 and 18 years old. She engaged herself to get married in spite of my pleadings. Amongst other treatments she was sent to Arizona; there she got married and stayed there. Fortunately she did not work in a factory, did not live in the slums; she was rich. Her promise not to have a child was kept by neither of the couple. That was five years ago. I have seen her lately with two babies, one 4, one 1 year old, all well. Her

health is good, lungs fair, very little dulness, no rales, no expectoration, no bacilli. This is an exceptional case which I can afford to mention here, but should not care to tell another tuberculous girl of eighteen.

Pulmonary tuberculosis rarely interrupts a pregnancy by hard coughing or by hemorrhage. But the social position of the woman is in the vast majority of cases so unfavorable, that the disease makes fair progress during pregnancy, and a rapid one after confinement. That makes the prognosis serious in every case. Occasionally only the condition becomes worse in spite of the apparent well being. Even those who never complain will get worse after confinement. A genuine improvement is a very rare occurrence under ordinary circumstances. Latent or incipient tuberculosis in pregnancy, generally accompanied by anæmia, mainly that which is complicated with heart disease, narrow chest and malnutrition, has a fairly low mortality. From my own experience I cannot give you a percentage. Authors speak, however, of a mortality of from 3 to 7 per cent. Open tuberculosis affords a bad prognosis; in such cases pregnancy and confinement kill from 60 to 100 per cent. The worst cases are those complicated with tuberculosis of the larynx, the kidneys, the bones, peritoneum and intestine. Bad heart complications destroy life sometimes before pregnancy has been completed. What becomes of the fetus and infant? Tuberculosis is not hereditary, nor congenital. In nearly 60 years I have seen only a single case, forty years ago. It was a seven months' birth, the mother died a few days after. Autopsy of that newborn revealed miliary tuberculosis in the lungs, pleura, spleen and peritoneum. When the fetus reaches the ninth month and the outside world, it is mostly under weight, and as many as 70 per cent. of the infants or more, have been reported to have died before the end of the first year. That depends, however, not only on the asthenic condition of the newly born, but on the surroundings, the feeding, breast or otherwise, and whose breast it is. A thoroughly consumptive mother should not nurse at all. I remember a baby that was nursed only a few times on the first day by its mother. It contracted pulmonary tuberculosis and died within a few months. That brief contact on the first day of life was sufficient to make the baby inhale bacilli from the expectoration of the mother. When a baby is removed from the mother who has advanced tuberculosis, it will live, and may thrive. When a mother has incipient or not far advanced tuberculosis, she may even be permitted to nurse her baby provided care be taken lest she kiss or cough at the baby, and allows it to be taken away after each nursing.

Poor people cannot do that, or exceptionally only. If a baby be nursed by another woman the prognosis is fair; average breast fed babies, I mean healthy only, have a mortality of 7 per cent. before the end of their first year. The very best artificial feeding has a mortality of 20 per cent. These figures are valid for the rich and the poor, as long as health is preserved and equal. At all events do not forget, the best artificial food yields only one-third of the life chance afforded by breast milk feeding.

What can be done to improve the chances of the pregnant mother? One of the lazy teachings of tuberculosis therapeutics says "food, air, rest, in or out of a sanitarium." This teaching is good like everything that is satisfactory but incomplete. Half truths are no truths. Do something beyond the idleness of Micawber. Rational hydrotherapeutics, not merely cold, improves circulation and strength. An hour's or a two hours' impeded inhalation either by Kuhn's patented mask, or by the simple method of obstructing one of the nares with a cork as I advise poor patients, for an hour or two hours daily, may do some good. Drugs will do good. Whoever knows nothing of the use of opiates, camphor, atropin, agaricin, heart stimulants, should try to learn. What there is to be learned thus far of the administration of guaiacol, and of arsenic, I have laid down in several publications, for instance in a paper on "Tuberculosis and its Treatment by the Practitioner," in the *Medical Review of Reviews*, of June, 1911, about the same time when I published a brief paper on the "Difficulties of Diagnosis," in Heinrich Stern's *Archives of Diagnosis*. That is why I must not go into the discussion of the subject here, except to add that whichever of the sanitarium gloats over the claims that no medicines are given, does its duty to the sick only half, that means not at all, and should be boycotted.

Pregnancy in a rich tuberculous woman is a grave danger; in a poor one—the vast majority are poor, more or less—a very grave one. That is why its interruption has been recommended by many, very many. Total mortalities after operative interruptions have been counted up to 15, 32, 41 per cent. That is a frightful number, only less so than the 56 or 61 per cent. of deaths which have been reported of cases left alone. Incipient cases, viz., those with apical catarrh, when the uterus was emptied early, yield according to H. von Bardeleben (*Berlin Kl. W.* 1912 No. 37) a mortality of 2.54 per cent.; if you wait until the fourth or seventh month, 20 or 25 per cent. Advanced cases so treated yielded a mortality of 54 to 80 per cent. That looks bad, and is bad. That is why we general practitioners

think twice, and more times, before we insist upon the emptying of a pregnant uterus in a tuberculous woman whose symptoms are not very urgent. I believe in many an incipient case we should act as if we had to deal with one that has surely been known to have got well. This very year Martin whom all know as a gynecologist by reputation and many personally, has published (*Sammlung Klin. Vort.* No. 665, 1912) his operative experience and that of others with the technique of surgical interferences. Laminaria acts too slowly, particularly in the primipara, and is inefficient and possibly septic. When the cervix is soft in a multipara, it may be tried. No dilating instruments are recommended. They give rise to trauma. Martin advises two lateral incisions, and the ligature of the uterine artery. Many have advised to cut out the corpus uteri to avoid sepsis, with a favorable result as to life, but the almost sure sterilization of the woman with the exception of those few cases in which a piece of the ovary was left behind, unknowingly; in all of the cases either mild or grave, bacilli are floating in the blood. They are liable to be caught by the insertion of the placenta though the latter be ever so healthy. Thus, if ever an operation is made, after the fourth month of pregnancy, this placental region must also be removed. So they order. But with less cutting of the placenta or its insertion I believe you can get along. The object of destroying the bacillus nest can, I think, be accomplished without the knife. Carbolic acid has been used these fifty years. What I did quite often then, you need not, however, imitate. We had at that time a great deal of endometritis, puerperal fevers of all kinds, for it was the ante-Pasteur, ante-Lister time. The poor obstetrical general practitioner had a hard time of it. Before I learned the proper and sufficient dilution of carbolic acid, I ran a fifty per cent. dilution into the uterus from a fountain syringe, immediately followed by water which a bystander poured into the bag. I should this very day propose to irrigate carbolic acid, or potassium permanganate in active, but not excessive doses into the uterus for the same purpose. At all events if it became advisable to empty the uterus of its contents on account of the increasing danger of tuberculosis, I cannot chime in with the directors of operative clinics who recommend the knife for the purpose of removing part or all of the uterus. Complete castration furnishes a mortality of 20 or 25 per cent. We know, however, what a gradual dilatation and removal of the contents of the uterus with curettage is capable of doing. This ought to be your surgery. In the very early period of pregnancy it is successful. To me modern surgery is, however, nowadays,

sometimes, bent upon finding out what the human body is able to endure. They speak of a successful operation when there was merely no death. We practitioners are more modest. We want less noise, less renown, less conservative invalidism and a quiet recovery. It is true our fee is comparatively small. Those of us who are displeased may grin but should bear it.

What about bad complications? Pyelitis and pyonephritis increase the danger, but an operation should be made on the kidney and not on the uterus. The same should be said of renal tuberculosis. In every case, however, you will not study the uterus alone, not question the bacilli alone, but consider the woman all of the woman, with her bacilli, and her uterus, and her lungs and her possibilities for good and for evil.

NOTES UPON THE OPERATIVE SURGERY OF GOITRE.*

By JAMES P. MARSH, M.D.

AFTER a given case of goitre has been carefully studied both from a diagnostic and prognostic standpoint and it has been determined that operative interference is advisable, then at once there arises several questions which must be answered and a choice made of several different ways of procedure. I might add that this preliminary study of the case ought always to include a careful X-ray examination of the chest for reasons which will be given later on in this paper.

Perhaps as imperative as any question connected with the surgery of goitre is that of the anæsthetic to be employed. If the case be one of ordinary cystic goitre and even although quite large and the X-ray examination shows that there are no intra-thoracic extensions thereof or a co-existing congestion of the thymus gland resting as a cap upon the base of the heart and the large blood vessels issuing therefrom, and that the trachea has not been compressed laterally into a scabbard shape or rendered tortuous in its post sternal portion, there seems to be no objection to general ether anæsthesia. Dr. John B. Murphy of Chicago always operates under general ether anæsthesia and the greater number of American surgeons are doing the same. Nevertheless it would seem that in these cases the intra-tracheal insufflation method is preferable because it removes the anæsthetizer away from the field of operation and does away with a large and annoying face mask and a certain amount of the laryngeal spasm.

Occasionally cases of cystic goitre are met with in which the growth is so large that the trachea has been converted into a very narrow scabbard shaped organ or has been so twisted out of shape,

to either the one side or the other that the patient cannot lie down.

A case of this kind occurred in my practice a few years ago in which the growth was so large that the incision extended from the mastoid down to the episternal notch and then upwards on the other side of the neck to the other mastoid. In this case anæsthesia was only possible with the patient in a sitting position and even then the respiration was so embarrassed as to place the patient in a critical condition several times during the operation.

However, when we are dealing with a case of exophthalmic goitre in an advanced stage, the question of the anæsthesia is one of very great importance. These are the cases which are a source of great anxiety to all of us. Of late I have resorted to Crile's method of stealing the patient as it were for the operation. In these cases I have seen scopolamin and morphine helped out by a very small amount of ether give an ideal anæsthesia.

Dr. Crotti, of Columbus, Ohio, who has had one of the largest of experiences in goitre work usually uses two preliminary doses of scopolamin and morphia and the nova cocaine adrenalin infiltration method locally. The trouble with ether in these cases is that it is very apt to set up a reflex spasm of the larynx which very materially interferes with the rapidity and skill with which the operation may be done. Although I think that the majority of surgeons are using ether, it seems to me that the best results are obtained under preliminary scopolamin and morphia with nova cocaine and adrenalin locally at the time of the operation.

The most serious objection to the nova cocaine local injection method is that it requires time and experience to become an expert in its use and so at first quite a few cases which have been begun under the above anæsthetic have to be completed under ether. The operator being very confident in his ability, as most operators are and should be, places the want of success to the method and not to his own lack of skill and experience. If one is going to use this method one should go to those who have used it in many cases and see them do it and find out all about it before they venture into the field.

Regarding the use of straight cocaine in these cases I would not have the courage to employ it. When nova cocaine is seven times less toxic and ten times more anæsthetic than simple cocaine the use of the latter is almost inexcusable.

I should not neglect to say that it is possible to do very satisfactory goitre excision under spinal anæsthesia. A *sine qua non* of this method, however, is the use of Prof. Babcock's formula for stovain—stovain, lactic acid, absolute alcohol and water. This fluid has a specific gravity less than that of the spinal fluid and consequently when injected at the usual location between the second and third, or third and fourth lumbar spines, has

* Read at the annual meeting of the Fourth District Branch of the Medical Society of the State of New York, at Glens Falls, October 8, 1912.

the property of rapidly ascending in the spinal canal at the rate of 10 cm. per minute. The upper level of the anæsthesia is therefore limited by the height to which the fluid is permitted to ascend in the spinal canal.

Although I have extensively employed spinal anæsthesia in my work for the past four or five years, nevertheless it seems to me to be risky to employ it for goitre extraction, as the injected fluid must ascend to a point so near to the medulla as to incur the liability of affecting the respiratory centers there located. As you all know this respiratory paralysis is one of the possible dangers of spinal anæsthesia and although it does not usually or ever terminate fatally when rightly handled, I can assure you it is not pleasant during the course of a goitre extraction.

The fact is that no case of exophthalmic goitre should be permitted to advance to that stage when the administration of ether is especially dangerous and with all respect to my medical brethren on the other side of the house I am so bold as to say that cases of exophthalmic goitre ought to be sent early for operation just as cases of appendicitis are now sent in as soon as they are diagnosticated. I know of no medical treatment which is anything more than palliative and the unquestionable diagnosis having been reached I feel that it is time to operate.

The next question in the technique of the surgical procedure is the incision; and here let me say that the incision had better be too large than too small. If one lobe only is to be removed, and this is usually all that is necessary, let the incision begin slightly beyond the median line of the body and just above the episternal notch and curving gently upwards to the middle of the belly of the sternocleido mastoid muscle with the convexity of the resulting flap looking downwards and outwards. An incision thus placed can easily be enlarged at any stage of the operation and as a rule it will not be longer than an ordinary collar will easily hide. There is no necessity of paying any attention to the platysma and it may be included in the skin flap which is next deflected upwards and inwards over the larynx. When, however, we come down to the belly of the sternocleido mastoid let the anterior margin of this muscle be well dissected out, down to its sternal attachment and well up towards the mid portion of the muscle. At this point many good operators cut the sternal attachment of the muscle but this is rarely necessary. If this muscle is well liberated it can be fully retracted to one side by a small blunt retractor. Frequently, by blunt dissection the sternothyroid and sternohyoid can be liberated and retracted without cutting the fibres but there are a number of cases in which it is necessary to cut, transversely, the fibres of these muscles.

At this point we are usually confronted with numerous large veins running in every direction over the presenting growth. All of these must

be carefully liberated and tied and reflected to one side. The plain, unmistakable rule is to tie everything that needs an artery clamp. In this way we work down to the inner capsule of the gland and let me say, that goitres have more layers of thin coverings than a hernia has. There is nothing so puzzling to a beginner as to know when he has reached the true capsule. It is something that is learned only by experience, but a rule of some value is that you have not reached the capsule so long as the set of vessels in a deeper layer can be seen through the tissues of the superimposed layer to be distributed at different angles. If there is any movability to the tissues, which there is not usually, you can see one set of vessels slide over the other set.

Having reached the inner capsule the finger is to be inserted and swept around the gland, freeing it from its bed, except at three points, namely: At the upper pole where the superior thyroid enters, at the isthmus, and at the lower pole where the inferior thyroid enters. This latter point is the most uncertain. Sometimes from the way in which the gland has enlarged the inferior enters, apparently high up on the side, fully half way from the isthmus to the superior pole and sometimes it seems to come almost out of the super sternal notch. Usually at this time the gland can be more or less delivered and this is a very important step.

Well do I remember being in the operating room of one of our most famous American hospitals when a simple ordinary case of goitre was being operated on and because the operator did not seem to realize the possibilities of this process of delivery of the gland, he lost his patient on the table. When she died, purely from hemorrhage, there were from fifteen to twenty pounds of artery clamps on her neck and she had been on the table six hours. I know a dozen American surgeons who would have delivered that gland and have had everything controlled in ten minutes.

The delivery or liberation of the gland is very important. As a rule I free the superior pole first. I do not try to isolate the superior thyroid and tie the arterial structure. I tie off a *small* portion of the gland where the artery enters. If a small portion of the gland is left it will do no harm. I do not think it ever exudes thyroid material into the found and thus produces the so-called post-operative hyperthyroidism as some distinguished American surgeons have taught. I almost always leave in little pieces of the gland at the superior and inferior poles and have no trouble therefrom.

The superior pole having been secured, it is kept well elevated and carried towards the median line. The finger easily finds the point of entrance of the inferior thyroid and this is secured and everything liberated up to the isthmus. This structure, having been well isolated, is transfixed by a blunt aneurism needle armed

with a medium size kangaroo tendon. The needle is unthreaded and the upper half of the structure is firmly tied, then the needle, still *in situ* is again threaded, drawn back through the original point of entrance and carried beneath the lower half of the isthmus, unthreaded and the lower half tied.

Again let me repeat that during these procedures everything which needs an artery clamp should be tied.

Of late years we have heard a great deal about tetanus following thyroidectomy, due to an unintentional removal of the parathyroid glands, and this leads me to the second cardinal rule of goitre extraction, which is to always stick close to the gland.

I have done a number of goitre operations and I have never as much as seen a parathyroid gland in the operative field. This last rule also saves me from injuring the recurrent laryngeal nerve. This nerve I have a number of times been able to recognize, and in two or three cases I have uncovered it for quite a distance, but by sticking close to the gland I have never cut it.

After the gland has been removed one is usually surprised to see how small a space has been left behind. This is because the muscles usually spring back into their normal position. In the ordinary case no drainage is necessary. It is best to close the deep layers of the cervical fascia by a continuous suture and the wound in the skin is closed with a double sub-cuticular stitch of catgut. This is done for cosmetic reasons, for when well done it leaves only a hair line scar. Most of our goitre patients are women, frequently young, and as they are very particular about the post-operative appearance of their necks this is an item of no small importance in making a man's reputation for neat and satisfactory work.

Very large cystic goitres, like the one referred to in the beginning of my article, quite frequently dip away down behind the sternum and there is danger of doing damage to the thoracic duct where it enters into the circulation on the left side. This accident happened to me in this case and for three weeks I had a chylous fistula, but it eventually healed up without complications.

About two years ago I was called to Ossining to operate on an ordinary case of exophthalmic goitre. The operation was not difficult. It was done and the wound closed in about one-half hour. The patient left the table in good condition, but I noticed a very congested condition of the skin of the face and head. She had not been so previous to the operation, but afterwards her face became fiery red. It seemed to me to be unusual and I cautioned the attending physician to look out for post-operative thyroidism and instructed the nurse what to expect and to have her hypodermic ready with all kinds of heart stimulants. Everything went well until about twelve hours after the operation when she sud-

denly awakened from her first sleep with a smothering sensation, and her heart went all to pieces.

The nurse acted quickly and after several hours of hard and constant work upon the part of the physician and herself the patient's symptoms subsided. She had an uneventful convalescence and has made a complete and most satisfactory recovery from her disease.

At that time and until very recently I considered this condition which happens every now and then as hyperthyroidism. With others, I felt that it was to be explained by the hypothesis, that during the operation an undue amount of thyroid gland secretion had been suddenly squeezed into the circulation and that the patient's heart had been overwhelmed thereby.

Since, however, I had the opportunity to see the epoch making work of Drs. Crotti and Bowen of the Grant Hospital, Columbus, Ohio, my ideas along this line have received a very sudden and radical change. In their recent communication to the American Roentgen Ray Society at the Niagara Falls meeting, they showed conclusively several important points which all operators for goitre ought to know. In brief, by means of radiographs, clinical histories and post-mortem findings, they showed that many cases of goitre are associated with a large thymus gland which rests well down upon the base of the heart and the origin of the large blood vessels, that in certain cases of goitre extraction, especially those which are intra-thoracic, about six hours after operation there comes on an acute and excessive congestion of the thymus gland, which presses upon the heart and blood vessels and produces this chain of frequently fatal symptoms which we have been calling hyperthyroidism, that it is possible by means of the radiograph to find these cases of large capping thymus previous to operation and to refuse operation to them until they have had a period of rest and X-ray treatment and the radiograph shows that the thymus has become very much smaller, and that the operation can be done with greater safety. I regard this communication as revolutionary and by far the most important in the field of goitre work that has come from American workers. This is why I said in the beginning of my article, that no case of goitre ought to be operated on without first having been carefully radiographed.

However much this communication of Drs. Crotti and Bowen may change our views of the phenomena of hyperthyroidism, it does not change the old rule that all cases of exophthalmic goitre must be operated on with the utmost gentleness and such expedition as is consistent with good surgery.

Regarding malignant growths of the thyroid, my experience is fortunately very limited. In my early days, I tried to operate on one case, but had to desist on account of fierce hemorrhage

from extension into the surrounding tissues. In this case the attempt was foolhardy and had I then known as much as I do now I would have let it alone. Another case was sent to me for operation, but it was so far advanced that I declined. As a surgical curiosity I took a photograph of this case which I shall pass around that you may all see what the condition was.



Of late, my good friend, Dr. S. Solis Cohen of Philadelphia, has said that we do not cure the cases of exophthalmic goitre upon which we operate. Perhaps in a measure the criticism is just and it may be true that all the little signs that our medical brothers so delight in finding and tabulating are not completely done away with, but we surgeons do make the majority of these cases comfortable and enable them to return to active life and work.

So then we have deduced these rules:

I. Let malignant cases absolutely alone, unless seen so early that you do not make the diagnosis previous to operation. Give them to the X-ray therapist.

II. Have an ample incision, so that you may see what you are doing.

III. Tie everything which needs an artery clamp.

IV. Stick close to the gland.

V. Although we now know what hyperthyroidism really is, operate with gentleness and expedition.

And so in the words of Hippocrates we have cured them quickly and safely.

GOITRE FROM THE SURGICAL STANDPOINT.*

By WALTER LATHROP, M.D.,

HAZELTON, PA.

IN presenting this subject before a body of men such as represented here, I do not pretend to offer anything new, but to give a brief account of this line of work, from my own limited experience. The surgery of the thyroid gland is most satisfactory, giving relief from pressure symptoms, hyperthyroidism, or removing a disfiguring enlargement; and in most instances, with a short period of disability.

The thyroid gland rests upon, and on each side of the trachea; it is surrounded by a thin fibrous capsule, which divides posteriorly to invest the trachea. The nerve supply is from the sympathetic, and its arterial, and venous supply is remarkable in its extent, and anastomosis.

In close relation to the inferior thyroid artery is the recurrent laryngeal nerve, which may be affected by pressure, and is sometimes injured during operation, causing loss of phonation. All conditions in which the thyroid gland is enlarged are termed goitre, and these are usually classified as diffuse, or circumscribed.

The diffuse variety usually retains the general conformation of the normal gland, with the right lobe somewhat larger. The circumscribed variety may be single or multiple nodules developing in one or more lobes. Encapsulated growths are frequently seen as cysts.

All types of goitre are probably but stages in a general process, whether cystic, colloid, or parenchymatous. The condition known as hyperthyroidism, is a toxemia due to the absorption of products from a hyperactive gland. It is not necessary to have exophthalmos, or typical Graves' disease, to produce symptoms of hypersecretion, and in my own cases about fifteen per cent. presented the typical conditions, but with no exophthalmos, and in four patients the true exophthalmos was present.

In some instances we may have distortion of the trachea, due to pressure, with dyspnoea—the glands may push down into the thorax (so called substernal goitre) and alter the size and relation of vessels, as well as producing pressure symptoms, interference with the pneumogastric, and give rise to so called heart goitre.

The individuals who seek relief from these enlargements, are usually those with simple goitre, or hyperthyroidism, in some stage. In the first group, the condition is one of

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oswego, October 3, 1912.

annoyance, or disfigurement, and regarded by the patient as a nuisance, while the second group presents a condition in which the general health is threatened, or already seriously affected. It should also be remembered that there is a close relation between the thyroid gland and the period of adolescence, pregnancy, menstrual period, and uterine growths; many large thyroid glands in young girls, return to normal after a few years, and these patients should not be operated upon, unless the condition is most urgent. In my locality I have seen a good many large thyroids in young Italian girls, from twelve to fifteen years of age, and have several who report to me at various intervals, in order that the condition may be noted, and later on if no change takes place, they can be operated upon. The parathyroids are causing a great deal of discussion and investigation at the present time. These little glands, four in number, above and below, on each side, behind the posterior capsule, are small and pinkish in color. They may become displaced, or flattened out in some cases of goitre, in which it is important that they be preserved.

Just what part is played by the parathyroids is an unsettled question, but that they exert a powerful influence in the body metabolism is a well known fact. Their removal usually means the development of tetany. MacCallum in a recent article has given the profession the benefit of his investigations, and he states that "the function and relations to the other organs are very obscure." He shows the regularity of tetany, after removal, in his experiments, and states further that "there are also sensory disturbances, paresthesias, painful sensations, and disturbances of the alimentary tract, of the vasomotors, etc." He further states that in an operation for goitre, in which the parathyroids have been removed, or crushed, or their blood supply impaired, and their function stopped, that post-operative tetany develops, but that in such cases there is usually left some gland tissue sufficient to maintain life, if the immediate emergency be tided over, so that time is given for it to re-establish itself, or undergo a compensatory hypertrophy. Beebe has also expressed similar views in reference to a case of my own in which tetany developed, and recovery took place. "It is certain that the parathyroids exercise a peculiar and very important function in preventing the appearance of an extraordinary change in the circulating fluids which in turn produce an hyperexcitability of the whole nervous system. There is much evidence that it produces, or even consists in a disturbance in the metabolism of calcium which may well be the cause of heightened nervous irritability" (MacCallum).

The usual symptoms of hyperthyroidism, with and without exophthalmos are shown by tachycardia, muscular tremors, nervousness, excitability, perspiration, and gastric and digestive disturbances. It is a condition of increased secretion and absorption. While there is no doubt that cases have been improved by medical treatment, the tendency of the day is toward surgical interference. In the early stages, much relief should be secured; while in the late stages it is a serious surgical procedure, because thyroidectomy will not cure the degenerative changes that have taken place in the body. Most of these patients require a period of preliminary treatment, before ligation, or thyroidectomy is performed, and this means rest and quiet with remedies to sustain, and improve the heart, kidneys, and nervous system. Crile in his masterly way, has given us much of value and his principle of anoci-association is worthy of study. Briefly, Crile states that the body contains large stores of potential energy. "This energy is released and converted into action through associative memory. Associations (stimuli) may be beneficial (bene-association) or they may be harmful or nocuous (noci-association).

"Surgical operations as usually performed, cause noci-associations. By special technic, operations may be performed without noci-associations, and this neutral state is designated anoci-association. Especially in abdominal operations, in operations for Graves' disease, and in handicapped patients, remarkable results are achieved. General operative mortality is reduced and post-operative impairment is greatly diminished."

My own experience with Crile's method has been very limited, but I am sure no mistake will be made in following his teaching. Our results with the methods of Mayo have been excellent and we have not yet gotten to the use of nitrous oxide and oxygen as an anesthetic, but it will no doubt be tried before long, as one can not listen to Bloodgood, Crile, or Wainwright, and not begin to doubt his own belief in ether. The use of a blood pressure apparatus is most important, and valuable, and I believe will give one the surest indication of the safety of his patient during operation. The using of various drugs, on a cone, for some days before operation, to overcome the apprehension and excessive nervousness of the patient, and finally anesthetising without their knowing it, is no doubt of value in some severe cases as advocated by Crile.

Regarding the ordinary operation for goitre, there are three factors for success, namely, *asepsis*, *hemostasis*, and *drainage*. The importance of asepsis should need no emphasis.

Secondary hemorrhage is one of the post-operative complications to be dreaded. I have had four cases, in which the wound had to be rapidly opened, and the bleeding vessel sought and tied; all recovered. This accident is usually due to including some muscular tissue with the ligature, and the coughing or retching of the patient causes the muscle to contract, and loosen the ligature. Hence the importance of careful ligation. A small rubber drain is of value, in nearly all cases, and should be left in from twenty-four to thirty-six hours. The patient in most instances is allowed to sit up after the fourth day. There is a rise of temperature in most cases, often reaching one hundred and four (104), and gradually going to normal; the pulse may be slightly accelerated, but is usually under one hundred (100); this of course does not apply to patients who have hyperthyroidism. In this condition things are far different, and these patients require *careful watching, absolute rest, and treatment for some time.*

My case of tetany was treated with large doses of calcium lactate, and the hypodermic injection of Beebe's parathyroid serum, with the complete withdrawal of all meat, and soups containing, or made from meat. She presented the typical Trousseau reaction, as well as that of Chvostok. Her recovery was complete, it now being eighteen months since the operation.

In conclusion, my own experience with one hundred and sixty-three (163) cases, in which there were twenty-four (24) with hyperthyroidism, four (4) with exophthalmus, eighty-four (84) parenchymatous, thirty-one (31) colloid, and twenty (20) cystic, has made me an advocate of surgical treatment in these conditions, especially in the ordinary form of goitre, as well as in cases of hyperthyroidism, not too far advanced, and where the proper preliminary care can be given before operation.

There were three deaths in the series, one patient died within a week, one within fifteen days, and one in five weeks; the last having pleurisy and empyema, and died soon after the pleural cavity was opened and drained. The others were bad risks, but anxious to take a chance for relief from severe symptoms. Since the reading of this paper, I have had thirty additional cases, divided as follows:—colloid, twenty-three (23); cystic, three (3); exophthalmic, four (4). One case, an extreme condition of Graves disease, died following the operation of ligation, under local anæsthesia.

See *New York Medical Journal*, October 5, 1912, for report of case of tetany.

ACCIDENTS OF HERNIA OPERATION.*

By D. R. KATHAN, M.D.,
SCHENECTADY.

IN drawing your attention to the accidents of hernia operation it is my purpose first to remind you that such accidents occasionally happen and then to point out means of avoiding their occurrence.

The Standard dictionary defines accident as "something that happens undesignedly." Under this definition we may properly first consider infection. This is to be thought of at all times and guarded against by a rigid aseptic technique. Great care in the choice of suture material is to be urged.

Since the introduction of asepsis the use of rubber gloves has been the most effective agent in the reduction of infections. The Johns Hopkins Hospital reports show a marked falling off in infections since the use of rubber gloves has been adopted in that institution. Treat the tissues kindly, no bruising or pinching with hemostats if you wish primary union. The same degree of care in handling tissues should be observed under general as under local anæsthesia.

Avoid leaving any dead spaces in which blood clots may form and later become infected. If care is used in closing these, it is not necessary to drain.

In operating we must bear in mind the anatomical relations of the different structures, especially the iliac vessels and nerves, the deep epigastric artery and the urinary bladder in inguinal hernia, and the femoral vein and obturator artery in the hernias emerging below Poupart's ligament.

If our hernia is an inguinal one we should first determine whether it is direct or indirect, as the deep epigastric artery lies to the outside of the internal ring in a direct inguinal hernia, and on the inside of the internal ring in an indirect inguinal hernia. Hence in opening the canal of an indirect inguinal hernia, open upward and outward and you will not injure the deep epigastric. While in a direct inguinal hernia open upward and inward.

It is well to remember that occasionally we have a portion of the urinary bladder in the sac or forming a part of its wall, and to directly open into the bladder would be decidedly undesirable. If the bladder is accidentally opened it should be repaired at once.

It is said that on several occasions the urinary bladder has been mistaken for the hernia sac and has been tied off and amputated, resulting in a urinary fistula.

Should your hernial sac contain omentum and it is deemed best to amputate any portion

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do not ligate it in mass, but rather in section, lest the ligature slip, a serious internal hemorrhage occur following the closure of the wound and go unrecognized until the patient is *in extremis*. You are advised not to transfix a vessel in ligaturing the omentum, also to examine stump carefully for bleeding before returning to abdomen. If a portion of the mesentary has been caught and it seems best to remove it, it is unwise to ligate close to the gut, as in such a case a fecal fistula is very apt to result.

In freeing the sac handle the tissues gently lest you injure the vas deferens, to your sorrow. If care is not used the spermatic vessels will also be injured allowing oozing, thus preventing primary union. Atrophy of the testicle is very apt to follow injury of spermatic vessels and is occasionally followed by gangrene.

There is no chance for debate on the advisability of transplanting the cord if we have an undescended testicle to deal with. In transplanting the cord we shorten it, and in an undescended testicle this procedure would be a mistake.

Another accident that might occur while tying off the sac is to include a small portion of the abdominal contents. To prevent catching a portion of the gut, omentum or mesentary, it is best to tie off sac while the finger is in the same.

In closing the inguinal canal the iliac vessels are liable to injury by being punctured with the needle in placing the first layer of sutures. Coley, of New York, lays down the rule to introduce your needle from within out and to raise the shelving edge of Poupart's ligament so that you can better see the course of the needle. It is best not to dip needle deeply while working over these vessels.

An all too common accident is that of constricting the cord by too tight sutures at the external ring causing a marked swelling of the testicle and possibly later an atrophy. Here again the finger should be our guide and guard against too tight suture. If the finger is held in the external ring while the stitches are being tied the cord will not be constricted on the removal of finger.

In the aged an operation for strangulated hernia is very often followed by broncho pneumonia where a general anæsthetic is used. For this reason many of our best operators are advocating the use of local anæsthesia whenever possible in this class of cases.

It is well to remember that in case of a strangulated hernia of the bowel, the longer the bowel has been down the greater the danger of rupture if taxis is used. We would not think of using the same degree of force at the end of 24 hours as we would in

the first few hours of strangulation. When operating for strangulated inguinal hernia, open the external ring with care, lest you injure the intestines beneath. In many of these cases there is so much exudate thrown out that it is difficult or impossible to introduce a groove director between the sac and the ring. In such cases it will be found best to pick up the tissues of the external ring with tissue forceps and open as you would the peritoneum in a laparotomy.

It would be a mistake if, upon releasing the constriction, we were to reduce the contents of the sac before we had first opened the sac, and ascertained if the contents were viable.

In operating for femoral hernia we should always bear in mind the danger of injury to the femoral vessels since they practically lie in our field of operation. Their proximity makes them very liable to puncture by the needle in closing the femoral opening. The writer was told of one case where the operator punctured the femoral artery and to check this hemorrhage he tied off the femoral artery; later when collateral circulation did not establish itself he was compelled to amputate the thigh. A heavy penalty for a mistake so easily avoidable.

I will briefly report two cases of accident through the courtesy of Dr. D. L. Kathan and Dr. Fodder.

Mrs. H., age 45. Operated upon 9 years ago for femoral hernia; usual operation; wound healed kindly with no evidence of infection, phlebitis or soreness or return of hernia. About one week after operation, attention was called to marked swelling of leg and thigh which has continued since, at present not so pronounced, but enough so that it will pit on pressure. This swelling seems to remain the same whether in bed, or about on her feet. This is doubtless due to disturbance of the lymphatic circulation. Probably the deep lymphatics as they enter the pelvis with the femoral vein were destroyed and have never completely re-established themselves.

Mrs. J., age 33, married, one child. Operated for right femoral hernia.

In about one week a septic temperature came on with chills, tenderness over the abdomen, moderate distention showing some peritoneal involvement. A cystitis also developed with pus in urine but no cast. The patient became seriously ill and the cause of a great deal of anxiety to her physician. Since the wound healed by primary intention and there was no evidence of infection in or about the wound a diagnosis of septic cystitis was made, due to catheterization which was necessary.

About three weeks after operation a large double knot of chromic catgut was voided

per urethra, following which the patient made an uneventful recovery. The catgut voided was evidently used to tie off a portion of the bladder wall mistaken for the sac at the time of operation.

MEANS AND METHODS OF REDUCING THE DEATH RATE FROM SURGICAL OPERATIONS.*

By MARSHALL CLINTON, M.D.,
BUFFALO.

THE technique of surgical operations has been so minutely developed in the last few years that death from operative work is becoming less common. A better appreciation of the causes of death following operations has given us the methods to prevent fatalities. Our surgical forbears wrestled with the problem of sepsis, until the followers of Lister showed how to prevent sepsis in the non-infected cases, but we are still floundering through a septic maze in the treatment of the infected patient. Hemorrhage is no longer feared during operative work for the trained anatomist has shown us how to follow up an operation, through anatomical lines to control bleeding. For several years the study to control shock has filled considerable space in our writings and discussions. The fulfillment of the dictum "that no surgical operation should be the direct cause of the patient's death" is the aim of our modern clinics. Shock has been the bugbear of our work. After some brilliant surgical success we have seen shock almost, if not quite, rob us of our patient. What shock is, and how we can prevent it, before, during, and after operation, is a living surgical question. The author believes that the best definition of shock has been given us by Crile: "Shock represents the sum total of all impulses that reach the brain by any path." You will notice that he says "by any path." He has shown that impulses reach the brain along other paths than the sensory tract. We have blundered along in the cheerful view that because patients were asleep they felt no pain and that any surgical procedure might be carried through so long as they did not experience pain, forgetting or not knowing that every operation is sending to the patient's brain a tremendous volume of impulses and that these impulses are draining the brain cells of their reserve energy. We know now that an anesthetic only inhibits part of the brain and that the rest of the brain is automatically carrying on the struggle to get away from the injury of the operation. The volume of impulses reaching the brain during an operation and the amount of energy it causes to be expended is reflected in the shock we see on the completion of an operation. If we are dealing with normal patients, normal as to their re-

serve energy, a slight operation uses up little of this energy and the patient shows little if any shock. A severe—mark the word—operation uses up much energy and we see profound shock. If enough energy is extracted from the brain cells complete exhaustion of the cells and death from shock ensues. We used to believe that time played an important part in the amount of shock produced, and we still hold that it is safer for a patient to have a half hour operation than a two hour one—other factors being equal.

Experimental work has shown that time is not the only factor by any means. We may produce tremendous shock in a few minutes if we are ignorant of the factors that enter into shock production. It has taken a large number of experiments to prove the shock producing factors, and after studying the whole subject carefully what deductions may we draw? We believe the best standard of measurement of the total amount of shock produced by any injury or operation is found in the brain cells as shown by Dolly and Crile. They have demonstrated that any factor which may produce shock will give in the brain cells the cytolytic changes characteristic of this condition. A series of experiments repeating some of their earlier work gives us a result we can see under a microscope, instead of estimating in terms of blood pressure and pulse rate. We see under the microscope characteristic, definite changes in the brain cells. We find the changes in the distribution and amount of chromatin material in the brain cells, and its gradual loss in the exhausted cells. By this method it is found that the greatest volume of shock producing impulses reach the brain along the sensory nerve tracts as pain impulses. These impulses reach the brain, be the patient awake, or asleep by general anesthesia. Another interesting series of experiments were undertaken to determine what role, if any, fear plays in shock production. It is interesting to note that severe and continued fear without injury or operation will produce the same type of exhausted brain cells as are found as a result of pain, injury, hemorrhage, starvation or wasting sickness.

Surgery is large trauma legally applied; it is essentially traumatic, and it would seem that the best way to study the shock producing qualities of an operation would be to investigate experimentally its equivalent on some animal. Apparently, the same destructive force applied to different parts of the body differs in the amount of shock it produces. The methods used in the production of the trauma play a large part in the severity of the shock. An operation done roughly, *i. e.*, pulling and tearing of tissue, will produce very much more shock than the same operation done gently, without traction or tearing, with the tissues severed with a sharp knife. It seems a reasonable deduction to believe that any procedure that will cause pain in a non-anesthetised patient will produce shock in a pa-

* Read at the annual meeting of the Seventh District Branch of the Medical Society of the State of New York, at Corning, October 10, 1912.

tient under a general anesthetic. We know of no better way of studying the various ways shock accumulates during an operation than to do the same operation under a local anesthetic and note the various pain producing factors. There are many operations that may be done under local anesthesia on suitable patients, such as draining the gall-bladder, appendectomy, cystotomy, colostomy and exploratory laparotomy. Under local anesthesia one quickly learns the pain producing factors; but most of all one learns to handle tissues gently. If we think that, we are sure you will recall patients who have been badly shocked in whom there is a direct parallel between their severe shock and the difficulty of their operation, expressed, as commonly, in the rough traction and handling of tissues.

Some years ago we used to pride ourselves on the rapidity with which we could complete an operation, no matter what the technical difficulties might be. We do not see so much of this as formerly, because it has been found that a deliberate, gentle operation is less shocking to a patient than a rough, hurried one. While time is a factor in the shock production of surgical work, yet we do not deem it of as great importance as gentleness in operating. This is not meant to convey the impression that shock will not follow a gentle operation if extended over two or three hours' time, for ether and chloroform will each produce a condition of shock in that length of time if no operation is done at all.

Stimulation with strychnine before and after operation had been in vogue for many years before anyone took the trouble to find out what benefit or harm followed its use. It has been used as a matter of habit—just as most of us vote. This is a progressive year, so let us consider what the action of strychnine really is. What happens when we give a patient a dose or repeated doses of strychnine? Every reflex action—and there are myriads constantly taking place—is heightened and the reflex arcs enlarged by its use. Every motion, every emotion, every nervous impulse calls out and uses up a greater amount of nervous energy than is normal. In a comparative sense we are putting our patients in a state of hyperthyroidism in that they react unduly to every impulse and use up much quicker what available energy they have stored up. Strychnine is one of the sharpest cutting therapeutic whips we have at our disposal and should not be used except as we would use a whip. A whip is a valuable help to urge a tired horse over a bad spot in the road, but hardly the thing to use steadily for a twelve or twenty-four hour uphill drive. We notice that patients that are prepared for operation by a course of strychnine do not take their anesthetics as easily, require larger doses of morphine and scopolamin to inhibit the receptive parts of their brains. Nature is constantly giving us wise pointers if we only look for them and we find she tries to overcome

the effects of shock as she does fatigue by resting the patient. It hardly seems fair to our patients to whip them with strychnine until they cannot rest. Rest is nature's method of storing up energy. Trying to keep up blood pressure by stimulation is often as harmful as trying to jam a cathartic through a physiologically blocked bowel in cases of local or general peritonitis. It is fine for the surgeon to see that a bowel movement gets through early but it is generally pretty rough on the patient. An early cathartic may easily prolong and aggravate the shock of a simple laparotomy. When the patient experiences a physiological unlocking of the bowel as evidenced by the passing of gas or feces, then is plenty of time to give a cathartic. There is less intestinal absorption in a quiet obstructed bowel than from an obstruction where cathartics are throwing the unaffected intestine into violent peristaltic waves.

How about psychology and shock? Does psychology or physiological experimentation on the influence of the psychic state of the patient teach us anything? Crile's experiments have shown that fear alone will produce the same harmful effect on the brain that injury and pain produce. Fear and pain are so closely allied in their effect on the brain that it would seem wise to take into consideration the action of fear. How often do we operate on a patient who is not suffering from the effect of fear? How can we when the idea of mutilation violates the instinct of self-preservation? A patient's instinct warns him to shun an operation, his later developed reasoning powers persuade him to be operated; but few make the decision without apprehension. The anticipation of an operation is a new horrible experience to the average patient, and were we to prepare a patient in the usual manner, anesthetise him, and then *not* operate him, we would find we had done enough damage to require some time before he regained his normal state of reserve energy. We are sure you have seen an occasional patient suffer shock out of all proportion to the simple operation that may have been done to him when the fear element has loomed large and uncontrolled. Take the case of the so-called neurasthenic who submits to operation in the restless struggle for relief. His nervous energy or reserve is below normal to start with and the fear element is easily exaggerated. His lessened energy, his fear, and the trauma of operation are together ample cause for the slow recovery this type of patient commonly shows. We frequently observe in gas-oxygen anesthesia how the fear element prolongs the earlier stages of anesthesia. It has been found that the use of gas and oxygen as an anesthetic shields a larger brain area during trauma than ether or chloroform. Therefore it would seem that gas and oxygen is a safer anesthetic than ether or chloroform. After a long trial we believe it to be so, not for this reason

alone, but because of all general anesthetics gas requires gentleness on the part of the operator. Our patients cannot fight back under ether or chloroform, but they may do so at times under gas and oxygen. While this is disturbing to the operator it is an added protection to the patient. We believe gas and oxygen an unusually difficult anesthetic to give properly and it requires efficient team work between the anesthetist and the operator. We believe there are three reasons why gas and oxygen has not been more generally adopted: the difficulty of perfect administration, the necessity of gentle operating, and the expense.

Anoci-association is a word coined by Crile to present a new principle in surgical work and he means by it to use all the means at our hand to keep harmful impulses from reaching the brain from any angle or path. Impulses that would ordinarily reach the brain as an expression of fear are controlled by dulling the perceptive centers with morphine and scopolamin. The patient's brain is as carefully guarded as his body. He neither sees nor hears anything that can set up a fear impulse. The pain from the field of operation is controlled by using novocain or quinine and urea as a local anesthetic to block off the sensitive areas.

The procedure we aim to follow out is briefly this: On arrival, the patient's receptive centers are shielded as much as possible by everyone with whom he comes in contact. Morphine and scopolamin or similar acting drugs are given to quiet them. In the severely injured or very sick patients we give them repeated small doses until they are practically asleep at the time they are to be moved to the operating room. With eyes shielded from seeing anything that might disturb them they are gently moved to the clinic where no one but the anesthetist and the clinic nurse are present. They are placed on the table and the anesthetist very gently starts the gas without rousing them to consciousness. After they are evidently asleep from the gas the surgeons and assistants arrange the towels, etc. around the field of operation. Without waiting for complete anesthesia a local anesthetic is injected into the skin and by the time the tissues are infiltrated the patient is under sufficiently to start the operation. A long incision in most cases obviates the necessity of using much traction. All the necessary traction is done as gently as possible. The operation itself is done with the least amount of force in pulling or tearing of tissues. After the operation the peritoneum is sewn with gut stitches which lie well within a zone of infiltration anesthesia. The other layers are carefully approximated with a running stitch that is only tight enough to bring the edges into contact. The skin is closed with fine silk or gut, keeping these stitches within the zone of infiltration. In carrying out this scheme it frequently happens that a patient will ask some

hours after an operation: "When am I going to be operated on?" Rather different from coming out of another anesthetic groaning with pain and suffering with intense nausea.

If a patient has no fear of an operation, feels no pain from an operation or better has no pain impulses sent to his brain, takes an odorless anesthetic which does not keep them nauseated, and loses no blood they cannot develop shock. To properly carry out these details requires care, time, and tact. If successful we notice an absence of shock. The time ought to come when we can feel that no surgical procedure can be held immediately responsible for a patient's death. These are the simple means and methods of attaining that end.

THE USES OF PLASTER OF PARIS AS A SURGICAL DRESSING.*

By H. F. GILLETTE, M.D.,
CUBA.

IN presenting the subject of plaster of Paris as a surgical dressing, I am constrained to say that it is used by many but understood by few, and while it is not my intention to qualify as an expert in its use, yet its use for nearly thirty years gives an experience which I trust may be useful to discuss.

That department of surgery which treats of deformities and fractures calls for some artificial means of support and from time immemorial various splints and supports have been devised to effect the object desired.

The time honored, dust covered and awe inspiring set of splints which some agent with a ready tongue landed in the office years ago is of but little use except to prevent any purchases in that line.

The correction of deformities and the treatment of fractures is largely a matter of mechanics, and a good surgeon is but a good mechanic, and as such looks upon each case as requiring special treatment, and he spends little time thinking how some other case was treated.

We learn little from easy cases, and the cases which cause us to think and plan, cut and try, are the ones which give us a readiness in the hour of emergency.

A big stock of ready made splints is like a clothing store. A fit may be made occasionally, but the tendency in the majority of cases is to make the case fit the splints, and that kind of expedient results in little profit to the patient or the surgeon.

A few yards of gauze and a few pounds of plaster of Paris is sufficient investment to treat nearly every fracture the surgeon meets, but let me say that one must not treat fractures as this paper instructs, or from any system which you may understand, but instead, each individual

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fracture should be treated as if it was the first case on record, forgetting all about how any previous case was handled and studying how best this case of fracture may be corrected and the limb be restored to its former usefulness.

Now plaster of Paris as a dressing is but a means to this end, and the dressing will never be of any benefit unless it is directed by an understanding and mechanical mind, so do not put a plaster of Paris cast on an extremity and think that by any supernatural power things will be correct when the cast is removed in a month or six weeks.

The injured parts must be placed in as perfect a position as is possible before applying the dressing; the cast only holds the parts in the position in which they are placed, right or wrong as it may be.

Ischemic muscular contracture is a condition occasionally met, as a result of constricting a limb by a cast which is placed on a limb too early, *i. e.*, before the subsidence of the swelling which follows the injury.

Whether a cast is applied early or late, some one of intelligence should be instructed properly so that if congestion of the limb and subsequent pain occurs the cast may be cut open its whole length without delay, for the constriction of the limb by the unyielding cast may destroy the constricted part. This result should properly be called the abuse of the dressing, but it is advanced as an argument against the use of plaster of Paris.

Before applying any dressing the parts should be as clean as possible, and after drying, the skin should be well powdered with talcum powder, after which the limb or part should be bandaged smoothly with a bandage made of outing flannel. The use of cotton batting or other bulky dressings should be avoided, as the plaster should fit the part snugly in order to be of any benefit.

In order to get safe results from the dressing the plaster should be fresh, as old plaster will not harden and will act like sand and water.

Usually a good quality of plaster may be obtained from dentists, but in every instance it should be tested before using. It takes but a few minutes to make the test, by mixing a quantity with a little water. If it forms a firm hard mass it may be accepted as safe to use.

Supply houses put up plaster bandages which are protected in part from deterioration by being placed in hermetically sealed packages, but they are not as reliable as they are expensive.

It takes but a few minutes to make up fresh bandages and the results amply repay the trouble in making them. Plain bleached cheesecloth folded evenly, something after the "Bellevue Roll," may be cut by a serrated bread knife into bandages, suitable widths.

In rolling the bandage the plaster should be rubbed freely into the meshes of the gauze.

If *Crinoline Lining* is used for bandages, the sizing should be washed out of the cloth before using.

Plaster bandages, so made, may be used in making casts and may be used in making splints which are formed to the limb as indicated.

Gutter splints will be found very useful for the whole period of repair of a fracture, as they allow plenty of swelling in the part without danger of constriction as from a quarter to a third of the extremity is exposed in this form of dressing.

If the case is to move about, the gutter splint may be reinforced by thin strips of wood, or strips of tin may be used instead. Usually the gutter splint is succeeded by a complete cast as soon as the period of congestion has passed. In order to explain the uses of various forms of plaster dressings let me give you a few cases in which different forms of dressings were used.

CASE I.—A blacksmith in shoeing a horse slipped and fell upon the floor, frightening the horse, which stepped upon the man's leg at the lower third, and upon the ankle, causing a fracture of the tibia and fibula, and doing much injury to the articulation of the bones of the foot. The deformity was great, but the reduction to normal position was not difficult.

As a preliminary to reduction and to relieve the pain and infiltration, the foot and leg were placed in a tub of water as hot as could be allowed. After several hours of the hot water, the foot and leg were tied up in a large feather pillow and allowed to rest until the next morning, at which time the fracture was reduced, and a plaster gutter applied.

The dressing was applied as follows: Some gauze was cut long enough to reach from the upper part of the thigh down to the heel and up the foot, and three inches was allowed for the end to fold back over the foot when applied.

Three thicknesses of gauze was spread upon a table and some plaster of Paris well mixed to the consistency of cream was used to saturate the gauze. Upon this gauze was placed more gauze and in turn was filled with the creamy plaster. In all, twelve thicknesses of gauze was used and upon this was spread a thickness of outing flannel which was placed next to the skin, without any other covering for the leg. This wet, limp mass was placed under the thigh, leg and heel, and the fracture inspected again for any needed correction. The next step was to mould the dressing to the limb and foot and to retain it in position by applying a gauze bandage over the whole dressing.

This, when hardened, made a very comfortable splint, or support, and it was at all times open to inspection by removing the gauze bandage. The dressing was made of sufficient width so that the anterior portion lacked three inches of closing. With the aid of crutches he moved about the house and was brought to my

office five miles away once a week for inspection. The original dressing was worn for six weeks when it was removed and he went to work in the shop shoeing again. The result was very satisfactory.

In a similar case the deformity was difficult to reduce and control, so the tendo Achillis was severed subcutaneously, which stopped the tendency to knuckle forward at the point of fracture. This tendon will unite about the time the fracture is sound, so there is no harm in severing it in cases where indicated.

CASE 2.—An engineer in a power plant was oiling the engine by reaching under a fast running belt when the sleeve caught and the right arm passed over the pulley. The humerus was twisted and a comminuted fracture was diagnosed at the middle of the bone. The fracture was moulded into shape and the shortening corrected, which amounted to about two inches, and the arm was dressed by applying a gutter splint which extended from the shoulder to the finger tips.

Extension was maintained by suspending a three-pound bag of shot over the dressing at the elbow. On alternate days the dressing was removed and the forearm was extended until some resistance was felt, when the forearm was restored at a right angle with the arm and the dressing reapplied.

After five weeks the dressings were removed and work was resumed as usual, with a very satisfactory result.

CASE 3.—A man was injured by a log rolling upon his right leg, causing a compound fracture at the middle of the leg. The lower end of the tibia was forced three inches through the skin. The leg was placed in a fracture box and extension applied for ten days, at which period a plaster cast was applied from the upper end of the thigh to the tip of the toes. An opening was cut in the cast at the place of fracture for dressing the leg.

He was allowed to move about the house and to go to the closet in the back yard, and one day he fell down the back steps, six in number, but no injury was sustained to the limb. After eight weeks the dressings were removed, and as he walks about town no limp is noticeable.

Pott's fracture is treated in a variety of ways. A very good dressing is that devised by Dr. Stimson, of New York, who uses a posterior gutter splint which extends from the head of the tibia down over the heel and foot, and then a strip is used on the outer side of the leg which at the lower end winds about the foot, making a complete circle.

As in Colle's fracture, Pott's fracture will get along without any dressing if the fracture is properly reduced.

Pott's fracture is easily treated by a gutter splint for a few days until the swelling subsides, after which a plaster cast may be used. If the

cast is reinforced by some strips of tin or thin iron the person can get about by using crutches and it will be found that considerable weight may be placed on the foot without harm or discomfort.

CASE 4.—A child, aged ten, sustained a fracture of the left thigh at the middle. Careful reduction was obtained under ether, and the limb was supported at the sides and at the same time sufficient extension was used to maintain the length and to prevent spasm. After ten days a cast was applied which extended from the umbilicus downward over the pelvis and lower extremity. He was taken out for air every day in a cart and in four weeks all dressings were removed. A good result was obtained.

This form of dressing may be used in selected cases in adults. In fracture of the neck of the femur, the method of Dr. Whitman is proper in suitable cases. This method differs only in placing the thigh at extreme abduction before applying the spica about the pelvis, thigh and leg.

CASE 5.—A track laborer fell from a moving hand car, falling in advance of the car. The car shoved him along the track for a short distance when the body became wedged and doubled up, fracturing the spine at the level of the eighth dorsal vertebra. All sensation was abolished below the level of the crest of the ilium. In order to properly handle the case a cast was applied as follows:

A piece of linen toweling was fastened at the cross rod of the iron bed upon which he was resting. The other end was rolled upon a stick of wood and securely fastened. Pulleys were attached to the stick of wood at the free end of the strip of cloth and the patient was placed on the toweling by sliding it under the body. Traction was then made with the pulleys and the free end of the toweling was drawn over the cross rod at the foot of the bed. By sufficient traction the body was raised a foot free from the bed without pain or discomfort.

Extension was made by securing the shoulders and making traction at the feet, at the same time the hand under the fracture was pressing and molding the deformity. When the deformity was sufficiently reduced a cast was made by the ordinary method, after which when dry the toweling was cut away from the ends of the cast.

The patient was not lowered to the bed until the cast was firm. This method of applying a cast, or by the use of a rectangular frame, to support the cloth upon which the case rests, is much easier and more comfortable than by means of the Sayre's apparatus, besides in feeble persons the long continued suspension is a source of danger not to be overlooked. In the case of spinal fracture the man rested upon the cloth three hours comfortably before he was lowered to the bed.

CASE 6.—Colle's fracture. The whole secret of success in this fracture is to make complete re-

duction and if that is accomplished almost any dressing will answer.

For many years the writer used Moore's appliance with the greatest of satisfaction. The greatest objection to that device is that the subject of the fracture is liable to support the hand with the sling and if the hand is supported a deformity is sure to result.

In looking about for some other plan of support, my attention was directed to the Stimson plaster splint, while visiting at the Hudson Street Hospital in New York City. In my next case the appliance was tried out with great satisfaction.

The splint is made as follows: After proper reduction of the fracture a plaster splint is applied to the flexor surface of the forearm, which extends from the elbow down to the palm of the hand. This splint is at least two inches wide.

Next a splint much the same as the preceding is applied from the elbow along the extensor surface of the forearm to the knuckles, where it takes a turn about the hand, much as the lateral splint in Pott's fracture takes a turn about the instep. Before the plaster strips are applied to the arm and hand, the hand is drawn towards the ulna, after the manner of the old pistol splint. This dressing will be found very comfortable and can be removed and reapplied in a moment. The splint holds the hand in proper position and no fear may be entertained that the sling will do any harm.

There are many ways of treatment for fractures of the clavicle and none of them comfortable for the patient. Allow me to suggest that the fracture be reduced by carrying the shoulder backwards and upward and while in this position applying a plaster cast about the chest above the level of the nipples and a spica about the shoulder and arm of the injured side, and keeping the patient on the back until the plaster is hard. At times, especially in disease of the knee and hip, it becomes necessary to place the joint at rest and to accomplish this the use of plaster of Paris is convenient, also contractures may be remedied by stretching the contracted part and applying a cast to hold the part in the new position, and then in a week or more the cast may be removed and the part stretched again and a new cast applied, and so continued as long as improvement is obtained.

Some three years ago I was asked to treat a case of tuberculosis of the knee joint of three years' standing. Several operations had been done to remove diseased bone from the head of the tibia and fibula and a sinus always resulted with free discharge. The man was a farmer and was upon his feet all day and the sleep was disturbed by pain in the limb and twitching of the muscles, so he was badly handicapped by the diseased joint. There was but little motion in articulation and the leg was carried in a nearly extended position. Some bismuth and vaseline

paste was injected into the sinus twice a week for six weeks which resulted in complete healing of the sinus, which has remained free from discharge and soreness for some three years.

As soon as the case was received a cast was placed upon the limb to keep the joint at rest, and the bismuth paste was injected through a window in the cast.

Under the foregoing plan of treatment the pain and spasm in the limb ceased and after wearing the cast for six months the man was able to work again, with a knee partially ankylosed, but free from any disease.

In conclusion: if some gluten cotton gauze, which is called by the trade super extra, is used to cover the cast it will add to the strength and also will prevent the crumbling of the plaster.

Some specimen dressings for Pott's fracture, and the same for Colle's fracture are presented for your inspection.

THE EINHORN BEAD TEST FOR THE ESTIMATION OF DIGESTION.*

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IN all disorders of the digestive tract it is of great importance to be able to estimate the degree of digestive capacity for the various foodstuffs. This need is felt particularly in cases of achylia gastrica where the gastric digestion is nil and the intestine must assume the duties of the stomach in addition to its own functions. This it is not always capable of doing and so in arranging a dietary it becomes necessary to determine whether, or no, all of the intestinal juices are being secreted in sufficient quantity and quality to digest all the classes of foods.

Again in the diarrhoeas and intestinal disorders without gastric disturbance we desire to know if merely a motor excitability exists or if behind this there is intestinal dyspepsia for one or more of the classes of foods.

The simplest means of making this estimation of the completeness of digestion is to be found in the employment of Einhorn's bead test. This method is of particular value to the general practitioner because of the ease with which it may be used and the fact that no great amount of experience in gastro-enterological work is necessary to obtain accurate results.

The specialist has other means for acquiring the same information, but they entail considerably more time and a certain degree of experience. The use of a stomach tube after a test breakfast and in the fasting condition, enables one to judge of gastric digestion and motility.

The expert examination of the stool, macroscopically and microscopically, while the patient is on the Schmid diet, affords valuable infor-

* Read at the annual meeting of the Eighth District Branch of the Medical Society of the State of New York, at Buffalo, September 25, 1912.

mation as to ultimate digestion by the discovery of poorly fragmented muscle fibres showing plain striations, the presence of starch granules or free fat, etc. Again the presence of indican in excessive amounts in the urine is indicative of poor proteid digestion with resultant decomposition.

When, however, these methods are not available a simple and instructive means of obtaining the desired information lies in the employment of the bead test. The patient is not disturbed when the test is applied. He does not have to be on a special diet and simply has to save all the movements, until the beads have been recovered.

Before presenting illustrating cases I will briefly describe the bead capsule and the technique of its use for those who are not familiar with the test. Six different articles have been chosen by Dr. Einhorn to represent the various food stuffs, two of which, catgut and fish bone, are normally digested in the stomach, while the balance, meat, mutton, tallow, thymus gland and potato are acted upon in the intestines. The connective tissue of the meat and thymus is normally dissolved in the stomach and the meat fibers swelled and softened somewhat but not digested. These articles admirably fulfil their mission as an index for the test of digestion of all the varieties of food.

The test articles are attached to beads of different colors to permit of easy recognition in the stool, excepting for the thymus, which is enclosed in a small gauze bag. All are strung on a loop of thread in order that they may all appear in the same stool and none be lost. The loop with the attached beads is enclosed in a capsule for easy administration.

Those who should desire to prepare the capsules themselves may find directions in one of Dr. Einhorn's articles.† They can be purchased already prepared from Eimer & Amend.

The capsule is swallowed by the patient at the end of one of his meals and all stools are saved until the beads are recovered. The movement is put in the stool sieve and mixed with cold water until only coarse articles are left, the beads being then discovered. An ordinary flour sieve may be used for the purpose. If the movements are thin and watery it is not necessary to use the sieve as the beads can be seen at the bottom of the receptacle.

The time which has elapsed between the swallowing of the capsule and the passage of the stool containing the beads should be noted. By this we have a simple means of estimating the motility of the digestive tract. Usually the beads are passed after 24 to 36 hours. They may just miss appearing in the stool 24 hours after ingestion and, if the patient has but one movement a day, will not then be passed for 48 hours, being held in the lower bowel during the interim. Any time

over 48 hours certainly denotes disturbance of motility and is proof of real or latent constipation, often being the only evidence, if the patient has a daily movement.

The beads are washed in cold water and then examined to note the presence or absence of the attached articles of food. Normally all should have completely or almost entirely disappeared. A part of the thymus may often be recovered with normal digestion, but it will be found that the nuclei have disappeared from the action of the pancreatic digestion.

One point should be emphasized, that the patient should be on a regular mixed diet at the time of the test in order that the results have value. It has been the writer's experience that any patient, if on a liquid or much reduced diet, is capable of digesting the small amounts of the food substances attached to the beads, unless there be complete absence of one of the digestive juices. But the secretions may be deficient in quantity or quality and in this case if the patient is eating all the classes of food, they will be unable to digest any great amount and the larger pieces attached to the beads will not have disappeared.

In achylia gastrica the use of the bead test serves a double purpose. It indicates the state of ultimate digestion enabling the physician to better arrange a rational dietary and at the same time gives important information from a prognostic standpoint. We know that the patient can get along fairly well without the use of his gastric secretory functions, provided the juices poured into the bowel are normal. In many of the patients there is imperfect intestinal digestion for one or more of the food stuffs and the prognosis for relief is proportionately worse according to the number of articles undigested. In these patients the catgut and the fishbone are almost invariably unchanged as these substances are acted upon by gastric juice. Disturbances of intestinal digestion are frequently found also in cases with normal gastric secretion or hyperchlorhydial.

Synopses of the following two histories are given to illustrate the findings of the bead test in achylia:

Mrs. M. had been ill for two years when she consulted the writer. Her symptoms were those of achylia gastrica. She complained of loss of appetite, belching, flatulence, occasional headaches and dizziness, loose bowels and tendency to diarrhoea with pain in the wrists, ankles and finger joints. The beads were passed twenty-four hours after being swallowed. The catgut and fishbone were unchanged, but all the other articles had disappeared. In this case it is evident that digestion in the bowel progressed fairly normally and that the outlook is correspondingly good.

Mr. L. had lost a very large amount of weight in the two years before consulting the writer. He had various dyspeptic symptoms and irregular

† Einhorn: *Jr. A. M. A.*, February 2, 1907.

bowels. The test meal showed that he, also, had achylia gastrica. The beads were passed in thirty-six hours, the catgut and fishbone being unchanged, one-third of the potato being present and part of the thymus, although the nuclei had disappeared. The pancreatic secretion here too seems capable of perfectly digesting a certain amount of tender meat in spite of not having it normally softened and swollen by the gastric juice. On the other hand a slight intolerance for starch is shown. In cases such as this it is well to limit the amount of starch somewhat and insist upon its being well cooked at the same time increasing the amount of fat.

Again there are cases of intestinal indigestion in which there is no disturbance of gastric secretion. In these cases also it is advisable to determine which food substances are concerned. It is also necessary to separate these intestinal functional dyspepsias from the pure nervous affections in which digestion is normal. This may be readily accomplished by means of the bead test.

True intestinal dyspepsia may be partial or universal, affecting all of the three classes of food. The latter is a very serious condition and fortunately rare. The following illustrates a condition of weak starch and thymus digestion:

Mr. V., age 27, had when a boy chronic intestinal catarrh accompanied by chronic diarrhoea of six years duration. He was apparently cured and the condition of his bowels has remained normal until recently when he consulted me, complaining of languor, bad taste in the mouth, movements of offensive odor, though perfectly formed, without mucus and of normal appearance. Examination of the stomach contents one hour after a test breakfast revealed a slight gastric catarrh and lavage six hours after full meal showed poor gastric motility, but the bead test show motility in the intestines to be normal as the beads were passed twenty-five hours after ingestion. A part of the potato and considerable of the thymus with faint nuclei were still present. All the other substances had disappeared.

Mr. W. came to my office February 5, 1912, with symptoms suggestive of a universal intestinal dyspepsia. He had lost twenty-five pounds in six months and had constipation alternating with profuse diarrhoea, often having twelve movements a day. There was flatulence and pain in the stomach and bowel. The bead test, however, showed everything digested excepting a trace of thymus in spite of low gastric acidity, and considerable mucus. Examination of the feces then revealed amœbæ. Diagnosis: amœbic dysentery with gastro-intestinal catarrh.

Dr. W. had one month before consulting me been seized with diarrhoea and colicky pains in the abdomen. He had lost considerable weight and had a sallow look suggestive of sluggish secretions. The bead test, however, revealed perfect digestion and treatment directed toward building the patient up with plenty of mixed food

and toward diminishing the irritability of the bowel resulted in a cure.

Miss B. suffered from innumerable dyspeptic symptoms. Among other troubles she seemed to be unable to take the smallest amount of meat or any of its preparations without experiencing violent indigestion. Her trouble was diagnosed as a psychoneurosis and the diagnosis confirmed by the bead test showing perfect digestion.

Mr. L. had gastric ulcer with intestinal symptoms. All of the substances had disappeared from the beads, which appeared in normal time. Although the beads passed the pylorus perfectly, the duodenal bucket failed to pass, the test in this case enabling us to judge of the size of the pyloric opening, it being larger than the largest bead, but smaller than the bucket. Stenosis of the pylorus was not suspected in this case or the capsule would not have been given. Strictures afford about the only contraindication to the use of the test.

These few cases have been chosen to illustrate a few of the conditions in which the bead test affords us useful information. It has been, in my experience, valuable in all instances where it is desirable to know the degree of the ultimate digestion.

A CONSIDERATION OF DIET IN ACUTE DISEASE.*

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THE principles of food economics are by no means new. In the time of Moses certain laws were in force, governing the use of food, the flesh of fish, meat and fowl. These laws although religious in character carried an underlying hygienic truth and value. Through succeeding centuries, the tenets of law and religion crudely safeguarded sects and selective peoples in the regulation of various articles of food, the manner of its preparation and the time it should be eaten.

This early knowledge, although rudimentary, had its influence, but it has been for our generation to perfect in detail the practical application of the value of foods, as to their quantity, quality and heat producing elements as applied to the even sustenance of the individual.

European investigators were the pioneers in this line. Today, however, through the work of the United States Department of Agriculture, the Carnegie Nutrition Laboratory and various educational institutions, we are well in the vanguard of progress. To attempt an extended description of food values, and the means used to prove minutely their relative worth to the human system, is not within the scope of this paper. But to properly introduce the subject, "Diet in Acute

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Disease," it will be necessary to review in a brief manner the general question of modern dietetics.

Mankind requires and draws upon a large variety of food, and the modern methods used to prepare it, increase its value and ease of assimilation. The food which sustains us in good health has the same chemical constituents as the body, and to maintain the normal equilibrium, the balance of intake should equalize as near as possible the requirements of the individual. Atwater defines a food as "a material which when taken into the body serves to either form tissue or yield energy or both." Atwater's definition embraces all ordinary food materials that yield energy as well as build human tissue.

Foodstuffs are divided into three groups: Carbohydrates, fats and proteins. They furnish the energy of the tissues, and also by their combustion the heat needed for normal vitality. The dormant force in the food is oxidized in the body, and various forms of food develop through their combustion varying degrees of energy. The inorganic salts are in a strict sense not foods, but they are necessary for cell life.

Carbohydrates are important to the welfare of the human subject, and in the form of starch and sugar are very abundant in ordinary food. The fats of plants, animals and fish are needful for the body growth. Proteins include the principal nitrogenous compounds of food.

Taylor states that the human body contains two stock sero albumen proteins, and it is immaterial to the growth of the body whether the sero albumen comes from plant or animal life.

Atwater divides proteins into albumenoids, gelatinoids, and extractives. Albumenoids include substances similar to white of egg, lean of meat, curd of milk, and gluten of wheat. Gelatinoids occur in the connective tissue of meat. Extractives are the principal ingredients of meat extracts, beef tea, etc.; they are believed to neither build tissue or furnish energy, but act as stimulants. The deductions of recent investigations prove to us, that the protein tissues of the human body are not alone the result of protein food, but living protein tissue can be built up and supported by both protein and carbohydrate elements. It is also shown that the production of fat in the individual is not entirely due to an over intake of carbohydrates and fats. There is reciprocity of food combustion in the body, and in the appropriation of the end products of digestion.

It is proven that the protein tissues are not exhausted more rapidly by overwork, than when the body is at rest, but on the contrary intensified physical energy means a greater demand and consumption of the stored up body fat. The combustion of food material and its change into force and energy in the body, are now measured in the chemical laboratory by the bomb calorimeter. The amount of heat set free in the combustion of a given quantity of food material, is

called the heat of combustion, and is the measure of its potential energy, the unit is the caloric.

The caloric equals the amount of heat which would raise the temperature of one kilogram of water one degree, Centigrade, or what is the same thing, one pound of water four degrees Fahrenheit.

The standard value of various food stuffs necessary to maintain the normal equality in the human body between ingestion and consumption, has been tabulated by Professors Voit and Atwater, after many experiments upon human beings and animals. The value of various forms of food as worked out in the tables of Voit and Atwater, are made according to the normal requirements of the normal man. But when we are dealing with abnormal conditions, as acute fevers, our dietetic estimate is by necessity qualified.

In acute disease there is a greater demand for food and a varying diminished power in the digestion. To enable us to fully appreciate the individual nutritive requirements in febrile conditions, we must consider briefly the metabolic changes that takes place in the body.

Metabolism represents two processes. Anabolism where the food is transformed and organized into cells and tissue. Catabolism where the used protoplasm and the constituents of dead cells are broken down and eliminated. In conjunction with these processes are the reactions of combustion by which the heat needed for cell life is continued, and the force required for energy is augmented. Normal health represents a perfect equilibrium of both anabolism and catabolism heat and body energy. In acute fevers the catabolic processes are much more rapid than in health, and to offset this extreme wasting careful estimates of food requirements as applicable to our patient are important.

As Kean states, we do not appreciate how much a continued high temperature alone exhausts our patient. If the body were composed of water, imagine the amount of caloric force necessary to raise the temperature of a person weighing one hundred and fifty pounds from 98.3 degrees to 105.3 degrees, to say nothing of the expenditure of power needful to keep it there.

When we reflect upon fever, its frequency, and the subtle power it exerts, we are surprised at our meagre knowledge of its cause. Recent investigation with the use of the caloric estimate, is gradually bringing out a better interest in the question. Taylor tells us, causation of fever is probably due to chemical substances elaborated through bacteria or protozoa on the cells or associated with their life or death in the body. Taylor suggests two prominent causes that are supposed to produce heat in fever. First, toxic exaggeration of protein catabolism. Second, exaggerated catabolism due to depletion of glycogen.

In protein catabolism in prolonged fever, the

cells of the muscles and glands are especially drawn upon, and the emaciation under these conditions is unusually rapid. It has been demonstrated that this loss can in a degree be held in check by supplying the patient with sufficient food calories, calculated to meet the added demands of fever and tissue waste. Experiments have proven, that acute fever patients frequently suffer from glycogen starvation, and that the extreme waste of protein in the muscles and glands is owing to the absence of carbohydrates.

The importance of supplying the carbohydrates in protein loss is important, and worthy of our thoughtful consideration in all acute diseases. A large ration of sugar in an infectious fever will often hold the nitrogen output to the normal. In a certain proportion of our cases febrile dyspepsia will so influence the patient that tests become far from positive. We have a reasonable index, however, for our guide in appreciating what our fever patients are losing and strive to meet the loss through quickly digested foods, which will meet the caloric requirements. A most careful estimate must be made of each individual, appreciating that the perverted secretions and functional inactivity render proper assimilation and metabolism of nourishment sufficient to sustain the proper balance a difficult matter.

It is apparent in acute fevers that the fats, albumens and proteins of the tissues are under a heavy tribute to sustain the patient in a long serious sickness. The diet in a prolonged fever case in not a very remote past, was grossly inadequate to make up for the call upon the stored up resources of the patient, and absolute starvation with tedious convalescence was evidenced in many instances.

Even today the criticism of under feeding can be made in many cases of acute disease. No matter how skillful the treatment, no matter how careful the nursing, an acute fever patient approaching convalescence often presents a picture of extreme emaciation and dangerously lowered vitality, and reflects the results of under feeding.

We will consider typhoid fever as a type in the application of modern diet in acute disease. Typhoid fever from its duration and the consequent drain upon the body fluids and tissues with the accompanying perversion of the digestive and assimilative processes, imposes upon us a special responsibility in making a proper adjustment of food to meet the varying changes produced by prolonged pyrexia. We have two conditions constantly present in typhoid, increased combustion, and diminished assimilation. Our adaptation of nourishment must therefore be influenced by the age of the patient, the intensity of the fever, and the condition of the digestive and excretory organs. Each case should be carefully studied and individualized, and the physician should be as solicitous to food requirements as to symptoms.

In typhoid fever Edsall suggests that all milk be pasteurized, so as to eliminate any possible typhoid bacilli, as well as other bacteria causing gastro-intestinal disturbance. It is held that the caloric value of a pure milk diet is too small, and in consequence the body consumes a large amount of its fat and protein. Two quarts of milk represent only one thousand three hundred calories, while the average fever patient needs at least three thousand in the twenty-four hours to make up loss in energy. Shaeffer and Coleman show that the destruction of body protein may be checked or prevented with a diet composed of a small amount of protein and a large amount of carbohydrates. Lactose is the most practical carbohydrate to use in equalizing the loss. By adding six ounces of lactose, which represents seven hundred calories, to two quarts of milk, the total caloric value of the diet is raised to two thousand calories, and by adding a little cream the heat value of the food is further improved. Coleman's maximum diet for the twenty-four hours is milk, one and one-half quarts, or one thousand calories; cream, one pint, or one thousand two hundred calories; lactose, ten ounces, or one thousand two hundred calories; and one egg, or eighty calories, a total of three thousand four hundred and eighty calories.

Coleman's plan of nourishing the patient in typhoid represents the modern trend in feeding. The plan with judicious modifications can be applied to all acute diseases. It is evident sufficient calories would be given the patient to maintain as far as the digestion will allow, an equilibrium between the body waste and food intake. The food should in any plan of feeding be liquid, or semi-solid, as solid nourishment frequently excites nausea and vomiting, and is apt to cause serious irritation in the ulcerated intestines.

I have found the caloric requirements are reasonably met by giving one or more raw eggs with lactose every four hours, and in the interval as much milk as the patient can digest. The eggs are administered in water without being whipped, and six or eight are taken in the twenty-four hours, and as a rule are easily digested. Eight eggs equal six hundred and forty calories; one and one-half quarts of milk, one thousand calories; lactose ten ounces, one thousand two hundred calories; total in twenty-four hours, two thousand eight hundred and forty calories, which nearly meets the maximum of three thousand calories.

It is impressive how many typhoid patients are able to digest the amount of nourishment necessary to approach the caloric requirements. It is important to remember that our typhoid cases require about thirty-five calories per kilogram of weight, and in determining the exact amount of nourishment, it is only necessary to know the approximate weight of the individual. From personal observation, all acute diseases respond well to the caloric standard of food requirements, ap-

plying, of course, judicious qualifications as the case demands.

Emaciation is usually restricted, and the vital energy well sustained. A plan of feeding that will shorten convalescence, conserve the patient's strength and vitality, enabling us to combat symptoms from a better standpoint, is surely worthy of our thoughtful appreciation.

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ANOTHER CASE OF GONORRHEAL CONJUNCTIVITIS ABORTED BY A TWO PER CENT. SOLUTION OF NITRATE OF SILVER.

By J. HERBERT CLAIBORNE, M.D.,
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IN the "American Medicine," 1910, New Series, August issue, Volume 5, No. 8, I reported my first case of gonorrhoeal conjunctivitis aborted by a 2 per cent. solution of nitrate of silver. The case was similar to this one in many respects and the treatment was commenced within 24 hours after the appearance of the first symptom. In both first and second cases there was redness of the eyeball, slight chemosis, with slight œdema of the upper lid, while the pus was flowing freely. As in the second case, the process was easily in hand within twenty-four hours and the treatment was almost exactly the same, except in the first case the conjunctiva was first washed out with bichloride solution, 1 to 3,000, and the nitrate of silver was allowed to remain fifteen seconds by count, and normal salt solution used immediately afterwards. In the first case likewise the patient was treated in the hospital with a night and day nurse and ice applications were made continuously. As will be stated, in the second case no bichloride was used, no salt solution after the application of nitrate of silver, and the latter was allowed to remain thirty seconds in each eye; moreover, owing to the financial condition of the patient, treatment which he received after the application was desultory and irregular. Bichloride 1 to 3,000 was used in both cases after the application of nitrate of silver. The successful outcome of these two cases for me personally robs conjunctival infection by this microbe of its terrors.

A young man, age 29, married, called on me at 5 P. M., February 21st, on account of his left eye. He said he awoke the night before at 3 o'clock and found his eye running; by morning

it was worse, and when he came to me at the hour mentioned above, his condition was the following:

A string of yellowish pus was lying across the cornea, and in the cul-de-sac, lashes stuck together with yellowish pus, upper lid slightly swollen and reddish; on turning upper lid, slight thickness of the mucous membrane, with redness; cornea clear, eyeball pink, particularly around the cornea, very faint chemosis; right eye apparently not affected at all. Patient was immediately sent to Higgins Laboratory and the pus was put under the microscope at 5.30. The following report was telephoned me: "Smears from the left eye" *mostly pus cells with a scanty amount of mucus. Gonococci present in large number—Intracellular.* (Signed, W. M. Higgins.)

As soon as this information was received, the patient was made to lie down with head low, and all secretion was wiped from lashes and mucous membrane with gauze; upper lid was then turned, and the lower one being retracted, they were both held in their position by index and thumb of left hand. The whole sac was then filled with a 2 per cent. solution of nitrate of silver, so that cornea and mucous membrane were completely submerged by the solution. This was allowed to remain for thirty seconds and then was wiped away with gauze. There was considerable coagulation of thin pus which was removed. The upper lid was then turned down, and immediately afterwards it commenced to swell, and the eye became fiery red. I ordered atropine, solution of 1-3,000 bichloride of mercury to be used every two hours throughout the night, together with constant ice applications, if possible. The right eye was covered with a watch glass, hermetically sealed. The patient preferred to go to his own home, rather than a hospital, and the treatment was continued by himself and wife. He was seen at 9.50 A. M. the following day, February 22nd. He stated that the treatment had been carried out throughout the night.

Condition of left eye: a little whitish pus on the lashes, a small streak of pus in the lower cul-de-sac, eye moderately red, no chemosis, cornea clear, no swelling of the lid, no redness of the lid, no pain, eye remarkably improved.

Condition of right eye: still covered by watch glass, through which it could be seen that the eye was slightly pink; whitish discharge on the cornea, and along the edges of the lashes. Patient was sent to the laboratory at once for examination of the right eye. The following report was returned to me the same day, February 22nd:

"Smears from right eye": *Thick mucopurulent secretion with a few red blood cells and small superficial epithelial cells. The bacteria are numerous, and are, in the main, small elon-*

gated, gram positive diplococci. No gonococci present.

"Smears taken from the left eye" at the same time were of the same character, but no bacteria were seen. (Signed, W. M. Higgins.)

Although the bacterial examination was negative, I nevertheless was convinced that the eye was infected, and with that in view, I instructed the patient to telephone me toward night, as to his condition. In the mean time, the ice applications and the bichloride were continued in the left eye, the originally infected eye, but not quite so energetically. The patient finally got me on the 'phone by 7 o'clock saying that his right eye was in about the same condition as the left one was originally.

I saw him at 12 o'clock that night, February 22nd. The left eye was still improving, no pus, and it simply had the appearance of an eye with ordinary conjunctivitis. Status of right eye at 12 o'clock, P. M., February 22nd: sac containing streaks of yellow pus, lashes matted together, upper lid markedly swollen, chemosis commencing, eyeball quite red, cornea not affected. Treated the right eye exactly as the left was treated, allowing the nitrate of silver to remain a little more than thirty seconds, because the infection was apparently greater than in the left eye; the threads were wiped out afterward with wet absorbent cotton, and ice applications and bichloride every two hours throughout the night were ordered, likewise atropine t. i. d. Treatment in the left eye to be less strenuous, but to continue.

Saw the patient the following morning, February 23rd, about 11 A. M. Condition of eyes: Right eye: swelling of upper lid and redness much better, chemosis diminished, eye very red, but the inflammation apparently well in hand. Left eye continuing in improvement.

February 24th, 9.50 A. M.; patient states that he continued his cold applications all day yesterday until eleven o'clock last night, when he fell asleep, but was awakened every three hours by his wife who applied the bichloride drops. Swelling of lids gone, few small strings of mucus in the lower sac, eyeball fiery red, but chemosis gone, no pain. At 4.50 P. M., the same day, February 24th, improvement still greater, no secretion, eyeball less red.

The following day being Sunday, the patient was not seen. On February 26th, eye had improved still more, both eyeballs whitening fast, no secretion. From this time, improvement in both eyes continued. On March 6th, the patient was discharged cured. Throughout the whole course of treatment the right eye followed exactly in the track of the left, being about one day behind.

There are several points in this case that are worthy of comment.

I think it may be said with fair certainty that the diagnosis of gonorrheal conjunctivitis, when

once the pus has commenced to flow freely, may be made without the aid of the microscope. Nevertheless, for the sake of scientific certainty the microscope should be employed. My diagnoses were based upon the well known symptoms: commencing chemosis, swelling of the upper lid, and yellow character of the secretion. The patient did not have gonorrhœa himself—on this point I satisfied myself by examining him personally. He had been married two years, admitted having had gonorrhœa antecedent to his marriage, and said that a physician had told his wife she had leucorrhœa.

When I found his second eye inflamed under the watch glass crystal, I was convinced that that eye also was infected, although it had been closed by myself with the strictest antiseptic precaution. The character of the pus was white, not yellow, and I did not think that the process had become well established. I thought the character of the pus would change within a few hours. I was not surprised at the report that no gonococci were found in the secretion, but I was confident they would be there by night time. I saw the patient, as will be remembered, that night at 12 o'clock, when of course it was impossible for me to have a bacteriological examination made.

The clinical picture has been described, and there is no question that the eye was infected by gonococci. The symptoms were unmistakable, though the bacteriological proof was lacking. In less than 24 four hours from the application of the nitrate of silver, the process in each eye was well in hand, and I believed the eyes were practically saved.

It is difficult to imagine anything more fortuitous that the outcome of the treatment of these two eyes. It is only necessary to recall to one's mind the lamentable and pitiable scenes in the treatment of gonorrheal conjunctivitis which has gotten beyond control, for such a result to be appreciated: pain, mental anguish, expense, loss of time, disfigurement, loss of the eye in great majority of cases, and finally despair, are the usual scenes in the drama.

IMMUNO-THERAPY IN OPHTHALMOLOGY AND OTO-LARYNGOLOGY.*

By R. L. CROCKETT, M.D.,
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FOR some time I have been trying to discover what place (if any) vaccine therapy or, as I prefer to call it—immuno-therapy—had in the branches to which I limit my practice and, after applying this method of treatment to a large number of cases, I have arrived at certain conclusions which I find correspond in the main with those of others who have worked along the same line.

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oswego, October 3, 1912.

I am aware that my experience is limited compared with that of some who have larger fields, but believe that conclusions formed as the result of practical work in this locality may be of some value to you who have the same types of people as patients and the same forms of disease to wrestle with.

First, it might be well to briefly state the principles which govern immuno-therapy and the varieties of disease wherein we may expect benefit.

The treatment of disease by active immunization originated as a result of the experimental work on animals conducted for the purpose of studying the action of various bacteria and of trying to produce antitoxins.

To Wright, of London, we owe, not the discovery of active immunization but the practical and extensive application of this measure to the treatment of disease in human beings.

According to certain laws of nature the introduction into the human body of toxins produced by bacteria (or the bacteria themselves) stimulates the body cells to the production of anti-bodies which tend to destroy the bacteria or neutralize their toxins.

According to the manner in which they produce their toxins bacteria may be divided into two classes—first, those which produce toxins which are excreted from the bacterial cell and dissolved in the surrounding medium (extra-cellular toxins) such as those produced by the Klebs-Loeffler or the tetanus bacillus; and second, those in which the toxin is an endotoxin or intra-cellular toxin and remains an integral part of the bacterial cell until that cell is broken down and disintegrated, as in the case of bacillus typhosus.

Toxins produced by bacteria of the first class may be separated from the bacteria and will stimulate the production of antitoxins when injected into animals with the appropriate technique and these antitoxins may be used to produce a passive immunity in other animals or the human body.

On the other hand, toxins of the second class remain as an integral part of the bacterial cell, do not stimulate the production of antitoxins which are of much practical use in therapeutics, and (when dealing with this class of organisms) our only available method of specific treatment is to produce an active immunity in the body of the patient.

In doing this we are following nature's plan and are imitating her methods.

In infectious disease we have two factors to consider—the virulence of the infecting organism and the resistance of the patient.

It is the latter which we strive to increase by immuno-therapy.

In an acute infectious disease such as pneumonia the tissues of the patient rapidly pro-

duce antibodies with the result that ordinarily in about a week the effect of the invading organisms has been overcome, the temperature drops and the patient gets well.

If the resisting power, or more exactly—the antibody—producing power, of the patient is below par, the disease does not clear up as quickly; complications set in or it may be that the patient is overwhelmed and falls a victim to the toxins.

Chronic infectious diseases are chronic because, for some reason the body has not reacted to the organisms and produced the antibodies necessary to destroy them.

Our efforts heretofore have necessarily been confined to improving the patient's appetite, assimilation and metabolism, and taking care of the elimination of all waste and toxic products thus striving to put him in the best possible condition to combat the disease.

Immuno-therapy gives a means of directly stimulating the production of antibodies and advances us one more step in the direction of our goal—the conquest of disease.

For example, we know that an uncomplicated case of typhoid will run a fever for three weeks more or less and then get well.

Why does it get well then?

Because the liberation of toxins from the bodies of the typhoid bacilli have stimulated the production of antibodies which make it impossible for the bacilli to live any longer in the body of the patient.

Also, you notice that it requires about three weeks for this proceeding to take place.

In addition we have noticed that a person who has had typhoid is generally immune to that disease for some time.

To make a practical application of these observations, we inject into a normal individual a quantity of a killed culture of bacillus typhosus.

The toxins are liberated from the dead bacilli and stimulate the body cells of the patient to the production of antibodies.

In a week or ten days we repeat the procedure with an increased amount of the culture and in another week or ten days we make a third and last inoculation.

We get reactions both local and general, but the bacteria being dead cannot multiply, the reaction soon subsides and we have produced immunity to the disease.

As regards the curative application of these principles, there are certain requirements which are of importance.

In the first place the disease must be in a considerable measure a local one—if it be general the body cells are apt to have all the stimulation to antibody production they can utilize and we are only adding fuel to the fire by introducing more toxins.

Next, the disease must be sufficiently chronic to allow time for the formation of antibodies—it takes at least a week for the formation of an amount of antibodies sufficient to be of much use.

So, in a disease which accomplishes its destructive work in less than a week, we have not much to hope from immuno-therapy.

Now, diseases of the eye, ear, nose and throat seem to furnish especial indications for this form of treatment.

They are local and are often chronic and it is the chronic cases, which have heretofore been hardest to treat successfully, which seem to respond best to this method of treatment.

First let us consider tubercular troubles.

The cases along this line which I have to report are all confined to the eye—tuberculosis of the conjunctiva and sclera.

During the last eighteen months I have had four cases of this sort under observation long enough to form some idea of the result of treatment. All were of several years' duration; had symptoms practically constantly, and had been subjected to long continued treatment by competent men.

The first case has been free from symptoms for over a year, the second about a year, the third nine months, and the fourth four months.

Other cases are under treatment and apparently doing well, but sufficient time has not elapsed to render them of any use as statistics.

A typical case was that of F. H., aged twenty-one. He had had nearly constant inflammation of his eyes since the age of two and one-half years. The trouble was of the phlyctenular type and the cornea was scarred as the result of the long continued inflammation.

There was a family history of tuberculosis, his mother having died of that disease when he was three years old.

A Wasserman reaction was negative and a von Pirquet skin reaction strongly positive.

I began with a dose of 1/1000 of a milligram of tuberculin B. E. and treated him weekly, rapidly increasing the dose until he was receiving 1/2 mg. when he had quite a severe general reaction. The dose was then dropped to 1/10 mg. and again gradually increased until he was taking 1/2 mg. without reaction, which dose was arrived at in about two months.

After the second dose the eyes began to clear up and by the end of the third month there was no sign of the trouble remaining except, of course, the corneal scars. The vision, which had been decidedly poor (about 15/70), improved until he had 15/20 in the right eye; the left, however, on account of extensive scars, remaining very poor.

After the eyes had cleared up the intervals

between the doses was gradually increased until treatment was stopped on October 3, 1911, six months from the time treatment was begun. I saw the patient in August of this year and he reported that his eyes had been entirely free from trouble during the entire interval, so I believe that I have a right to consider this case as cured.

The histories of the other cases are similar—treatment consisting in rapidly increasing the dose until a general reaction was obtained and then giving a dose just short of one which would produce a general reaction.

Probably the organism against which immuno-therapy is most efficient is the staphylococcus and infections of this sort affecting the eye, ear and nose are no exception to this rule.

To illustrate such a case: I was called to see Mr. A., a man in the neighborhood of sixty years of age, who had been suffering from a corneal ulcer for over six weeks.

The ulcer seemed to resist all of the treatment applied and caused the patient a great deal of pain.

A culture which I made showed staphylococcus albus and a vaccine was immediately prepared.

Meanwhile I gave him 500 millions of a stock culture of staphylococcus albus.

The pain was considerably relieved by the end of the week when he received 1000 millions of the autogenous vaccine—improvement continued rapidly and the eye became quiet and made an uneventful recovery with only one or two more doses of the vaccine.

Mr. P. came to me with an iritis which resisted local treatment and for which it was very difficult to find a cause.

Finally I learned that he had been having a number of boils from one of which we recovered a pure culture of staphylococcus aureus from which an autogenous vaccine was made which cleared up the trouble.

Perhaps the most interesting case of metastatic staphylococcus eye infection in my experience was that of a man who had a cataract removed from his left eye in the early part of 1912.

About three weeks later he developed an irido-cyclitis.

He was treated by the usual measures but without much success, as the eye remained inflamed and very painful.

Owing to his weak condition and the exceedingly inclement weather it was not until spring opened that he was able to come to Oneida where I could observe him more closely.

Subconjunctival injections of normal saline solution gave some relief which, however, was only temporary.

He complained of some trouble with his

bladder and a culture revealed staphylococcus albus.

I immediately gave him an injection of a stock culture of staphylococcus albus and proceeded to make an autogenous vaccine.

When he reported for the second injection he showed considerable improvement, and a week later the pain was all gone and the eye clearing nicely.

He had a slight attack of pain a couple of weeks later which, however, lasted less than a day and then the eye proceeded to become entirely quiet and free from inflammation.

The above mentioned results are typical of those obtained in a number of similar cases.

Chronic staphylococcus conjunctivitis seems to be dependent on a lowered resistance of the conjunctiva to that organism and in two cases of that sort I found that a staphylococcus vaccine cleared up the lesions when local treatment was without avail.

Inflammatory troubles of the eye seem to be especially adapted to this line of treatment on account of the free anastomosis of blood-vessels and consequent easy access of the protective antibodies to the lesions.

Staphylococcus infections of the nasal sinuses are favorably influenced by immuno-therapy and a number of cases have cleared up under such treatment; some with no other treatment at all; while others required removal of middle turbinates and opening up of the ethmoid cells before complete recovery ensued.

In these cases we must remember that, in addition to the lowered immunity against the pathogenic organism, we have often deficient drainage and accumulation of inflammatory products; so, until drainage is properly established and the pathologic products removed, we have no right to expect complete relief.

One case of chronic staphylococcus otitis media of three or four months duration yielded to two treatments.

After mastoid operations where the organism has been found the administration of vaccines is apparently of benefit. One of the first cases in which I tried this method of treatment was an old soldier, Mr. B., who had an ulcer of the cornea which gave a culture of an organism showing the characteristics of *B. coli*. I treated it faithfully for about six weeks by every method I could think of but only to see it steadily progress.

One injection of an autogenous vaccine stopped the pain and the extension of the ulcer and only three more were required to complete the cure.

A young boy with a chronic suppurative otitis media of over a year's duration was given an autogenous vaccine with the result that after the third injection the discharge

dried up and remained so and the hearing improved considerably.

Certain ulcers of the cornea yield on culture nothing but the xerosis bacillus which is generally considered only a harmless saprophyte but I have found that in these cases, which are apt to be very obstinate, that an autogenous vaccine greatly hastens the recovery.

Atrophic rhinitis has always been a bugbear to those engaged in rhinologic work and it is only since it has been recognized that the condition is the result of chronic sinus suppuration, that much real progress has been made in its treatment.

In that treatment immuno-therapy is destined to play a considerable part but right here is where we strike one of the limitations of this line of treatment which if not recognized is liable to cause disappointment and loss of faith.

In these cases we do not have a simple infection—we have a complex one. The organism which causes the odor is a saprophyte—lives in the secretions and does not come into contact with the blood stream and therefore is not influenced by any vaccine.

I have repeatedly tried vaccines made from the (so-called) "bacillus ozenæ" and have never seen the slightest improvement result from the treatment.

In order for antibodies to destroy bacteria they must be able to reach them.

However, associated with this bacillus ozenæ we find others, such as the streptococcus, staphylococcus, pyocyanus, etc., which are the original causes of the lesion and which can be influenced by appropriate vaccines.

I have already spoken of staphylococcus sinus infection—in addition to that, my records show cases of streptococcus and pyocyanus infection which have yielded to treatment by killed cultures.

The pseudo diphtheria bacillus occasionally produces a sinus infection which may become quite chronic—I have had two such cases during the year past.

One, Miss S., discovered, after an attack of tonsillitis which was pronounced to be non diphtheretic, that there was a discharge of pus from her left nostril. Six weeks later, when she came under my observation, the nose was considerably stopped up and pus was coming from under the middle turbinate on the left side.

A culture gave a very luxuriant white growth which consisted of bacilli resembling Klebs-Loeffler. From their cultural characteristics I concluded them to be pseudo diphtheria.

An autogenous vaccine was made and administered. Two doses with an interval of a week between were all that were needed. The

discharge stopped and has not returned since, and the nose rapidly regained its normal appearance.

The other case was a school teacher residing in a western state, who consulted me while spending a vacation in the east. She had a history of chronic nasal suppuration for nearly twenty years.

Cultures from the pus gave bacilli similar in every respect to those found in the other case.

I have not seen her since giving her the second dose of vaccine, but she wrote me in the spring that she had been practically free from nasal trouble all winter and could not say too much in favor of the treatment.

These cases were selected from a large number as typical of certain conditions wherein the induction of active immunity to certain organisms exercises a curative effect on disease. However, in order to obtain the full benefit from this method of treatment, we must remember its limitations.

The disease must be local; it must be chronic, or at least sub-acute; it must be caused by an organism producing endotoxins; and the antibodies formed must have access to the organism.

Finally, we must be sure that we have discovered the organism which causes the disease for oft-times other bacteria creep in as contaminations and may be mistaken for the causative factor where really they are a mere accident.

HYPERTROPHY OF THE PHARYNGEAL LYMPHATIC RING AS A CAUSATIVE FACTOR IN THE PRODUCTION OF EPILEPTIC EQUIVALENTS.*

By WALTER S. DALY, M.D.,
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AS far back as history shows and tradition indicates, epilepsy has afflicted man. Methods without number, drugs beyond estimate, have been employed for its cure. Yet epilepsy is ever with us, and still no specific so far has been found. In view of this fact the great importance of preventing epilepsy becomes apparent, and to prevent it in one group of persons we must be able to recognize a tendency before it eventuates in a habit, and in another realize the enormous importance of certain peripheral irritations as a cause.

A child of neurotic heredity is especially prone to motor nerve storms, and the first indication of an epileptic tendency is often an attack of infantile convulsions. It is not assumed that such an outbreak invariably precedes epilepsy, but it

is unquestionably the fact that a large majority of epileptics of whom an accurate history is obtainable, have had these convulsions in infancy.

Furthermore, epilepsy, from the viewpoint of modern neurology, is not necessarily characterized by convulsions, for, it is an indisputable fact that an attack of epilepsy may occur without a convulsive seizure, the convulsion being substituted by certain mental disturbances called epileptic equivalents. Such attacks in childhood exhibit a morbid sensibility to peripheral irritations, and should be esteemed a preeminent indication for years of watchful care, our aim being to prevent the occurrence of other convulsive seizures and the formation of a habit of convulsion or epilepsy.

An epileptic equivalent, therefore, is a certain state of consciousness differing not only from normal consciousness, but from the state of consciousness that usually occurs in epileptic attacks. The term really signifies a psychical state that in some degree takes the place of an epileptic seizure.

These phenomena present many points of interest, are of rarer occurrence than true epilepsy and are more difficult to diagnose.

CASE.—Harry P., aged ten, was a farmer's lad, whose family history was negative, and whose relatives on both sides were long lived and healthy.

PERSONAL HISTORY.—Patient developed naturally as a baby, but at the age of two years had what was called a "worm fit," which came on quite suddenly with nausea and vomiting, followed by an attack of what was undoubtedly a seizure of the grand mal type of epilepsy, presenting the classical symptoms, general tonic and clonic spasms, cyanosis and loss of consciousness. Following the attack, which lasted five minutes, the patient urinated very freely. During the next three years the child averaged about three of these attacks a year; the attacks, however, gradually increased in severity and duration. At the age of five the attacks suddenly ceased, to be followed by a period of quiescence, lasting five years, during which, the boy, to all appearances, acted like other boys, was very quick to learn, and showed no abnormal traits.

Suddenly, during the night of February 18, 1906, the patient was taken with a spell, during which he complained of being afraid, wanted to leave the house, cried out spasmodically, putting his hand to the right side of his head, as if his ear, on that side, were aching. When the pain was at its height, the boy appeared dazed and aimlessly moved about the house. This spell of insane manifestations lasted nine days, then gradually subsided, and for a period of two weeks the boy was, apparently, as well as ever.

He then had a second attack, which came on suddenly while in the barn helping his father remove a calf from one stall to another. The first thing noticed was that he began asking his father

* Read at the annual meeting of the Fourth District Branch of the Medical Society of the State of New York, at Glens Falls, October 8, 1912.

where his calf was; he apparently did not comprehend his surroundings, and had forgotten what he had been doing just a few minutes before. With expression vacant, and ideas confused, he wandered from one person to another, finding nothing to please him, nothing to pacify him.

Shortly afterwards, he complained of pain, now in the left side of his head, and frequently cried out: "Oh, my ear." This condition lasted for a period of seven days and then ended abruptly, when the patient cried out: "There, it has gone." After three or four days of sluggish mentality, he gradually brightened up and appeared well for about two weeks, at which time he was visiting his aunt, who noticed, about the noon hour, that he began to talk strangely, to sing, and to fear being left alone. At two o'clock he complained of severe pain in both sides of the head accompanied by the usual insane manifestations of the previous attacks.

The attack lasted nine days, gradually subsiding in three of four days, to be followed by a fourth attack two weeks later. The fourth attack suddenly began about nine o'clock in the morning, when the boy rushed out into the road and, looking up the hill nearby, began calling: "Hello, Frank," and shook his hand over his head. There was no one in sight—evidently hallucinations of vision. In a few hours pain in the head supervened, and he appeared dazed and confused. He did not seem to recognize the presence of his parents, even though they were by his side; and would frequently call his mother, even while she was trying to quiet him. Evidently illusions of identity.

During all these attacks, there was entire oblivion on the part of the patient of all that had happened.

It was during this last attack, and on account of some possible mastoid implication, that the writer first saw the case with the family physician, to whom I am indebted for much of the early history. On our arrival at the house, the boy, crazed and delirious, ran away, and it was with difficulty that he was apprehended. A thorough examination was impossible; so, the parents were advised to bring the boy to our office when a lucid interval would occur, which we had every reason to believe would come in about ten days.

About two weeks afterward, on June 2nd, he was given a thorough examination with the following findings: The patient is a well developed boy of ten years, light complexion, light hair, lips slightly thickened and gaping, mouth breather, with a lack of resonance of the voice, obliteration of the normal lines of expression of the face, pupils moderately and equally dilated, the special senses normal and unimpaired, nothing abnormal about the ears or mastoids, a coarse tremor of the tongue and fingers, the other parts of the body being steady. The patient has con-

trol of the various muscles of the body, showing good strength; nothing abnormal was found in the chest and urinary organs; temperature and pulse normal, the roof of the mouth is narrow and highly arched. Examination of the throat showed marked hypertrophy of the pharyngeal lymphatic ring. Finding nothing, beyond an hypertrophy of the tonsillar ring, to account in a causative way for the several attacks of which the boy had been the victim during the past four months, a neurologist was called in, who, after careful inquiry, diagnosed the attacks as epileptic equivalents. It was brought out that these epileptic manifestations, in a boy epileptically inclined, might be produced by some peripheral irritation, such as in this case, hypertrophy of the pharyngeal lymphatic ring.

So, accordingly, on June 4th, the hypertrophied condition of the tonsillar ring was removed, with the result that all the epileptic manifestations have disappeared and have remained so to the present day.

In view of the striking results here obtained, it must be concluded that this case of epileptic equivalent was either wholly or largely due to the irritation in connection with the hypertrophied tonsillar ring. As would be expected, his mental condition has also improved very much since the removal of this peripheral irritation. The case, from early childhood, was evidently one of epilepsy, the manifestations of which were caused by some peripheral irritation, which, if removed, would, in all probability, safeguard the child for a time against future and more serious attacks.

Up to within a few years, because the symptom-complex of certain types of minor epilepsy occurring in early childhood did not bring out prominently those classic symptoms of epilepsy, tonic or clonic convulsions with loss of consciousness, the medical profession has passed them by, entirely overlooking and ignoring their importance and gravity. Allow incipient manifestations such as "worm-fits," "teething fits," "stomach fits," "lapses," "faints," "night horrors," "sleep walking," "absentmindedness," and other apparently innocent phenomena, which are nothing more than epileptic equivalents, to pass unnoticed and uncared for, and you may have, thoughtlessly, launched your little patient upon the full tide of epilepsy.

If there is one disease in which early recognition is desirable, it is epilepsy. The early recognition of these obscure epileptic manifestations of early life, which present themselves under so many and so diverse forms, is really a difficult problem. For unless we are constantly on the lookout for them, we are very apt to view them rather as the innocent mannerisms of childhood life than the true landmarks of a disease so full of torment for the body and so disastrous to the mind.

Epileptic equivalents in childhood commence so insidiously that they are hardly noticed at first. Look at the little child of two or three years drumming away on its plate at meal time, and, all of a sudden, stops, strikes some peculiar dazed attitude for a short time and then resumes its play with a smile. At first the parents regard these spells as cute, but when the child reaches the age of five or six, they think it is high time for the child to discard its baby cuteness; so, in the effort to correct these hitherto cute, but now, annoying mannerisms, the parents resort to all kind of discipline and even punishment.

The convulsion tendency of a child in whose life we find such mother-named spells as "worm-fits," "teething fits," "stomach fits," "faints," "lapses," or any other convulsive manifestations of similar nature, should be a matter of solicitude to the attending physician as long as that child lives. It should be an invariable rule to search thoroughly every such individual for points of irritation. Wounds of the head or other parts of the body, astigmatism and other imperfections of the eyes, diseases or malformations of the throat and nasal cavity, carious teeth and retained milk teeth, aural disease, adherent prepuce or other irritation of the genital organs are among the irritations which in very many cases provoked epileptic manifestations.

The importance of thorough examination is increased by the fact that the reflex epilepsy may engender the epileptic habit.

Even with the passing of infancy there still remain certain critical periods such as the first and second detention and at puberty, during which that same convulsive tendency of former days must be guarded against. Epilepsy, in its development, occurs with greatest frequency between the ages of ten and sixteen.

"The keynote of the whole situation," as Sprattling says in his article on "Unrecognized Epilepsy," "is in mistaking apparently innocent phenomena for phenomena of the gravest import. Muscular contractions and distortions are nothing in the prognosis of epilepsy compared to the disastrous form of the disease that may be so silent in its appearance, course and termination as wholly to escape unskilled observation. We are just beginning to learn a great truth in the treatment of epilepsy, similar to the one it took us hundreds of years to learn about tuberculosis, and that is, that freedom from the disease is often but little more than a matter of right living."

It is not my intention to convey the impression that this young boy was cured of his epileptic manifestations, by the simple removal of his hypertrophied tonsillar ring, rather, that another blow at the mentality of this epileptically inclined boy was warded off. For it has been well said: "The convulsive tendency of an individual must be respected so long as that individual lives." But I do make a plea for the early recog-

nition and proper treatment of epileptic equivalents, of whatever nature, as they occur in the practices of the fellows of this society, so that hand in hand with the neurologists of today, no obscure nervous disease due to a peripheral irritation whether it be in the eye, ear, nose or throat, may be allowed to pass unrecognized and uncared for.

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"TAKING THE CURE" IN CALIFORNIA.

By CHARLES B. SLADE, M.D.,
NEW YORK.

IN recent years we have piled up such a vast amount of literature, dealing with tuberculosis in its various phases, that it would seem impossible for a clinician to bring anything on this subject to the attention of the medical profession which it has not already heard or read. Nor is it my desire to contribute further to an ever-increasing supply of low-grade ore. I have, however, recently come upon a "nugget" in this line which I think should be shared with my professional colleagues. It is in the form of a letter received from a patient (a physician) whom I saw for Dr. Richardson in December, 1911, and whom I found to be suffering with pulmonary tuberculosis. The stage of his disease, which involved the apices of both lungs, was on the border line between "early" and "moderately advanced." He had had a pulmonary hemorrhage six weeks previously, had lost about six pounds in weight, and was running a subnormal temperature every morning, with one to two degrees above the normal every afternoon.

I quote from the letter, which was dated at Redlands, Cal., May 14, 1912:

"A word in regard to the accommodations here for tourists: The laws of California bar tuberculosis from all hotels, and many boarding-houses and mountain resorts absolutely refuse to take them in.

"Therefore, one will find many bungalows and tent settlements at prices ranging from \$15 to \$25 per month. If furnished, add 50 per cent. (with servants and food about the same as in New York).

"The sanitoriums range from \$25 or \$50 and up per week. There are very few charity provisions.

"If any one can pass criticism, as in my case, for instance, can get good board and lodging for \$9 per week in boarding-houses; very good hotels and mountain resorts for \$12 per week. Best hotels, \$3.50 per day and up.

"We came from New York to Redlands, Cal., 60 miles inland from Los Angeles, in the San Bernardino Valley, altitude 1,300 feet, being told it is drier there and less dusty, and considered, by many, the healthiest climate in California.

"We made the mistake of most strangers to this *hot* climate (by day) of disregarding the freezing nights, and engaged a very charming room a month in advance (\$12) with *no heat* (as most of them are).

"It took us two weeks of going to bed nights right after supper, in order to keep warm, before we learned the *necessity* of a fire night and morning. As there was no place for a stove in the room we moved out.

"To my mind, the most important thing to be told a patient coming anywhere to this southwest is: 'Whatever else you do, see that you have *heat* in your room.'

"Out here one has to *learn* this by experience, possibly at the cost of their lives. Even at the summer resorts, where the temperature is 100 degrees in the shade by day, people wear sweaters and overcoats at night, and, also, fires are built in the reading-rooms.

"It is so different from our eastern climate that one cannot believe it until one has experienced it for some months.*

"I suffered at first from the almost universal delusion of strangers here for their health that the California climate would mysteriously cure lung trouble without any worry or trouble on my part. But after two weeks I came to realize that Redlands air is hardly as good as New York City, because of the dust that blows from all around, excepting where man, by irrigation and fertilizers, has caused grass to grow. In fact, there is more dust indoors in southern California than in New York, excepting in the higher altitude in the mountains.

"The advantage of the climate over New York in the winter lies in the warmth of its *days*, which makes one nice and comfortable *out-of-doors* all day, whereas, in New York, it makes one chilly to be out all day if one lacks energy, and the chill spoils the good effect of the purified air.

"It takes some energy and will power, even here, to be out all day, and until I realized the importance of it I stayed in my room much of the time, with a window or two open, and read, as so many of them do who believe in the magic of California to cure them, without realizing that it is necessary to be *out-of-doors all of the time*,

* The climate in the southwestern part of the United States, as referred to above, is quite similar to that over the entire table-land of Old Mexico.

with the proper amount of exercise and rest, to get the good of the climate.

"During the two weeks in Redlands my appetite failed, and at last each attempt to eat would cause cramps, which immediately disappeared at the first meal in the mountains. (Might this have been caused by the water?)

"Meanwhile, we had occupied ourselves driving (a single rig costing but \$1.50 for half a day), visiting ranches in the foot hills, Board of Trade, and making inquiries in all directions, and at the end of the two weeks we left Redlands, with its 10,000 people (an *up-to-date city*), and settled on a ranch 12 miles up hill in the mountains, at an altitude of 3,800 feet, where we *made a place* for a fire in our cabin (Mrs. Kate Harvey's, room and board \$9 a week, will not take tuberculous patients).

"It is only since then that we have gained. For all the pure air and food and balancing of exercise and rest do not help *me* if I am chilly and my feet are cold!

"In regard to temperature, etc.: Below us are orange groves and roses, while above, shining through the clouds, glisten the snow-covered peaks of Mt. San Bernardino, some 5,000 feet higher than we. It's a two hours' drive from snow shoes to orange groves, and up hill about eight hours.

"If I put a thermometer on my coat in the sun it registers 100 degrees; hung in the wind *in the sun*, 80 degrees; in the *shade*, 60 degrees; at dark, 40 degrees and below.

"The daily range in variation is from 40 to 60 degrees, so that if one can stand *this* climate, he should stand anything.

"The sudden drop at night (about 5 P. M.) catches many, so that colds and muscular rheumatism are very common; however, this is easily avoided, if one carries an overcoat, if he is to be out after 5 P. M. and has heat in his room.

"On April 19th, after staying at the ranch ten weeks, we came still higher, to Forest Home, 5,200 feet elevation, where we are at the present for a month's trial, when we go to Camp Cherry, Yosemite Valley, Cal., for the summer.

"We have a two-room cottage a quarter of a mile from the hotel dining-room, \$25 per week for two, including board. At night we have our bed on the porch, amid the pines and under the stars, surrounded by high mountains, and it has spoiled us for sleeping indoors already.

"The canyon here is about one mile wide, and mountains extend a mile higher in altitude on either side.

"For diet: Am eating three meals a day, nothing between, as that is as much as my susceptible liver will stand without making me sore under the ribs.

"Have a pint of whipped cream (30 per cent. fat) on the cereal every morning, with the result

of turning dry hairs into oily ones in three weeks.

"Find, by experimenting, that one egg for breakfast every day makes my liver tender and congested in 7 to 10 days, and impairs my appetite. Since this discovery, the last two months, by leaving out eggs, have had no indigestion of that kind.

"Also found by having milk *warmed* can take two glasses, '*cum cibum*,' t. i. d., the same as, and instead of, water.

"Strange my palate will not stand cold milk in that amount for very long.

"In the last fourteen weeks have gained a pound each week, making 138 instead of 124 pounds, and 'am still going strong.' Of what never-failing interest is a 'pound of flesh' more or less. Even without the scales know I have gained weight, for my old roomy camping trousers have had to be ripped down the back and a V-patch inserted 6½ inches at the waist, and my coats bind at the arms; flesh very much firmer.

"Fourteen weeks ago, to take a decent breath made me cough. Last week climbed a mountain to an altitude of 8,000 feet and felt nothing from puffing and blowing with all my might.

"Have no temperature and no expectoration.

"Since coming to Forest Home, appetite has increased, and am eating more heavily than ever. Undoubtedly on account of the dainty and digestible food served."

Throughout all of the above there stands, in bold relief, evidences of the well-recognized necessity of conducting the management and treatment of each case according to the patient's own personal peculiarities, if we are to obtain the best results. No set rules in diet or otherwise will apply to all, with good results, in any climate.

How often we eastern physicians are called upon to give advice, or answer questions, regarding conditions to be met in the great southwest, by one who is going there to try to recover from pulmonary tuberculosis. The above is an intelligent, interesting and cheerful answer, by physician and patient in one, a source of information of rare reliability. I would like to mention herein the doctor's, the patient's name, but do not feel at liberty to do so. However, should any physician care to know his name, I will gladly give it to him upon request.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

The Proposed Change in Name.

By GEORGE H. SIMMONS, M.D., LL.D.,
CHICAGO.

[EXPLANATORY NOTE:—This abstract of an address before the Conference of State Secretaries is republished from the American Medical Association *Bulletin* of Nov. 15, 1912, on the request of the Judicial Council.

The House of Delegates referred the report of the Committee to Formulate Amendments to the Constitution and By-Laws to Extend Membership, presented at the 1912 session (*Journal*, June 15, 1912, p. 1899), to the Judicial Council with power to confer with constituent Associations. The Council, after careful consideration, endorses the proposed change and takes this means of bringing the subject to the constituent associations as well as directing to it the attention of the members.]

I have been asked to discuss the present conditions of membership in the American Medical Association and the proposed change, which has been under discussion recently. While this is not directly related to the object of this conference, the discussion of uniform regulation of state membership, it is so closely connected with it that I cannot refuse to take advantage of the opportunity of discussing the question before such a large representation of state secretaries.

To get a clear understanding of what the present term "members" of the American Medical Association means, it is necessary to go back a little in the history of the Association.

The American Medical Association always has been a delegated body; only "delegates" ever had a right to take part in its proceedings.

"Permanent members" was a term originally applied to those delegates who connected themselves permanently with the Association after they had served as delegates. "Permanent members," however, had no rights except those of attending the meetings and taking part in the scientific work. In 1883, *The Journal* was started and the following year, for the purpose of increasing the circulation of *The Journal*, there was created another class: "Members by Application." A member of any so-called affiliated society could become a "member by application" simply by making application for membership and paying the annual dues. The difference between "members by application" and "permanent members" was that the latter had been delegates, whereas the former became members simply by making application. Neither "permanent members" nor "members by application" had vote or voice in business meetings.

MEMBERSHIP IN THE A. M. A. TO-DAY ON THE SAME BASIS AS THE FORMER "MEMBERS BY APPLICATION"

Briefly, we have the following situation:

1. The voting membership of the organization is the combined membership of all the 2,000 (more or less) component county societies, amounting approximately to 70,000 members. These elect the delegates to the House of Delegates of the state associations; they in turn elect the delegates who form the House of Delegates of the American Medical Association. Before 1901 the delegates to the American Medical Association were elected, or appointed, by the "affiliated" societies, which included local, district and state societies. Since 1901, that is, since the reorganization, the delegates to the national body are elected not by local district and state societies, but by the state societies alone.

2. The so-called "members of the American Medical Association" are the direct successors of the old "members by application." By their payment of dues and their subscriptions to *THE JOURNAL*, they were and are to-day the supporting or contributing group of the members of the organization.

3. The House of Delegates is composed of approximately 150 members, who are elected by the various state Houses of Delegates, which are in turn composed of delegates elected by the members of the component county societies. The House of Delegates of the American Medical Association, therefore, is created by, and represents the combined membership of all the county societies of all the states; it is not elected by, nor does it represent, the present "members of the American Medical Association" as such, it never has.

The result is that we have two classes which could be called members. First, the actual, logical member-

The Present Situation



Chart 1

ships of 70,000, usually designated as "the membership of the organization," Second, the 36,882 contributing or supporting members, who are designated as "members," although these "members of the American Medical Association" have no more privileges than have all members of the organization, except the right to take part in section work. This present situation I have had shown on the accompanying chart (Chart I). The membership of the American Medical Association, at present 36,822, is an inner circle of the membership of county societies, while the House of Delegates is a still smaller circle composed of those who have been elected to represent the members of the organization of the whole country.

Now the situation itself is perfectly logical and is in every way to be commended. The trouble is that we have not named our groups accurately. Those whom we now call "members of the American Medical Association" are really those members of the organization who, in addition to supporting their county and state associations, also contribute to the support of the American Medical Association, while for the actual membership of 70,000 members we have no distinctive name.

The change that has been proposed is not a change in condition at all. It is simply a change in name. It is proposed to designate the 70,000 members included in the large outer circle (Chart 2) as "members of the American Medical Association," which they really are and always have been, while those included in the inner circle (that is, those members in good standing of their county and state societies, who also pay \$5 a year to support the work of the American Medical Association) are to be called "fellows of the American Medical Association" instead of "members." This will make no change in the membership standing or relations of any man. If this suggestion is adopted, all

members in good standing in their state organization will be designated as "members of the American Medical Association," while those members who contribute \$5 a year to support the work of the Association be designated as "fellows of the American Medical Association." In other words, those who are now known as "members" of the American Medical Association be known as "fellows" of the American Medical Association, while the term "members" will be applied to the entire, combined membership of the component county societies of the whole country.

This plan has several advantages. In the first, it will give us a name for the entire membership of the organization, which we have never had before. Before 1901 they were referred to as members of "affiliated" societies, and since then they have been called, for lack of a distinctive name, "members of the organization." Another advantage will be that it will make clear that the voting power lies with the 70,000 members and not with the 36,822 "fellows." When this plan was first proposed, some got the impression that the intention was to compel the 70,000 members of the county societies to become "supporting members" of the American Medical Association, as the term is now understood. This, of course, would be a ridiculous proposition. The proposed change contemplates leaving membership conditions exactly as they are; it contemplates changing the name, and no other relation.

One great disadvantage prior to the reorganization of the American Medical Association in 1901 was the fact that we had no name by which to designate delegates. As soon as the name "House of Delegates" was adopted, then the function of the delegates became clear at once. The Association also has labored under the disadvantage, ever since its reorganization, that there has been no name by which to designate

The Proposed Change



Chart 2

actual voting membership, because the term "members" had been applied to the supporting body. The proposed change simply recognizes this fact, designating as "members" those who really are members, and designating the supporting members as "fellows."

I have already given some reasons for making the change, but there is another and more important; in fact, it is the paramount reason. Up to the present time, the members of the organization have not realized that they are, in reality, members of the American Medical Association. They regard the American Medical Association as something entirely apart from them, something in which they have no interest. These members of the organization are through their elected representatives responsible for what the American Medical Association is doing, or what it ought to do and is not doing, but they do not realize this, hence they are not interested. They do not appreciate that the House of Delegates of the American Medical Association, which they elect, is the body that is doing the work through the officers, trustees, councils, etc., which they, through their representatives in the House of Delegates of the American Medical Association, select. While only a change in name, I think the subject is of the utmost importance. I hope that all of you will look into it carefully, so as to understand exactly what is intended, and then will explain it to your members at the first opportunity.

LEGISLATIVE NOTES.

To the Editor of the
New York State Journal of Medicine.

The Committee on Expert Medical Testimony of the Medical Society of the State of New York has caused to be introduced into both houses of the State Legislature the following proposed bill:

"AN ACT to amend the Judiciary Law, in relation to examining physicians.

"*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

"SECTION 1. Article two of Chapter thirty-five of the Laws of nineteen hundred and nine, entitled 'An act in relation to the administration of justice, constituting Chapter thirty of the Consolidated Laws,' is hereby amended by adding at the end thereof a new section, to be Section thirty-one, to read as follows:

"SEC. 31. EXAMINING PHYSICIANS. In a criminal action or proceeding or in a special proceeding instituted by the state writ of *habeas corpus* or *certiorari* to inquire into the cause of detention, in which the soundness of mind of a person is in issue, the court in which or the judge or justice before whom the action or special proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of the examination. Any such examining physician may be sworn as a witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying when certified by the presiding judge or justice of the court or judge or justice making the appointment, shall be paid out of any funds available for the payment of and in the same manner as other court expenses.

"SECTION 2. This act shall take effect immediately."

This bill has been most carefully drawn by an expert on constitutional law at the instance of the Committee. The expert who drafted the bill has taken into account the laws of all the other states and the decisions regarding them where declared unconstitutional.

It is his opinion that this bill will stand the constitutional test. He further believes that it is wiser to use it as an amendment to the Judiciary Law than to have it enacted as an entirely new legislation.

It is sincerely hoped by the Committee of the State Society that the profession of the State of New York

will endorse this bill and stand back of it with a solid front. The abuses of medical expert testimony have been and are shameful. The Committee deem it the better part of wisdom to confine its efforts to having the bill enacted covering only criminal cases.

The bill was introduced in the Senate on March 17th by Senator Walters of Onondaga, and in the Assembly on the same date by Assemblyman Daly.

Again bespeaking the united support of the medical profession, we beg to remain,

Very truly yours,

DWIGHT H. MURRAY,
Chairman.

BILLS INTRODUCED INTO THE LEGISLATURE.

FEBRUARY 22 TO MARCH 21, 1913.

IN SENATE.

Amending Section 1241, Greater New York Charter, by striking out the limitation that an application to record a birth, in the bureau of records of the health department, in case of neglect or failure to find the physician or midwife, must be made within ten years of the date of birth. (Same as A. 1373.) By Mr. Sanner. To Cities Committee. Printed No. 1134. Int. 1007.

Amending Section 1746, Penal Law, making it unlawful for a manufacturer or dealer in drugs or a licensed pharmacist or druggist, to sell or furnish alkaloid cocaine or its salts except directly to a licensed physician, veterinarian, dentist, pharmacist or druggist. The manufacturer or dealer must label the outside wrapper of the package with the name and quantity of cocaine or its salts and the word "poison" as well as the name and place of business of the manufacturer or dealer; and must keep a book record of the sale open for inspection by any police or sanitary authority. (Same as A. 1436; A. 1443.) By Mr. Boylan. To Codes Committee. Printed No. 1137. Int. 1010.

Providing for the acquisition by the Commissioners of the Land Office, of a farm site for the hygienic and antitoxin laboratories of the State Department of Health, appropriating \$10,000 and providing for the disposition of property now occupied for such purposes. (Same as A. 1470.) By Mr. Sage. To Finance Committee. Printed No. 1229. Int. 1070.

Amending Section 138, Public Health Law, by extending the provision that the expenses, services and charges of the Health Officer of the Port of New York, shall be a lien on the vessels, merchandise or other property in relation to which they have been made and incurred, to the charterer or agent of the vessel where the owner does not reside within the United States. (Same as A. 1533.) By Mr. Blauvelt. To Public Health Committee. Printed No. 1278. Int. 1111.

Amending Sections 239, 318, Public Health Law, authorizing the State Board of Pharmacy to revoke the license of pharmacists in cases where the licensee becomes an habitual drunkard or becomes habitually addicted to the use of morphine, opium, cocaine or other drugs having a similar effect, and providing for the preparation and distribution to local boards of health by the State Commissioner of Public Health of official prescription blanks. By Mr. Boylan. To Public Health Committee. Printed No. 1329. Int. 1147.

Permitting the Board of Trustees of the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis at Ray Brook to grant for public school purposes in perpetuity one acre of land for School District No. 5, town of North Elba, Essex County. (Same as A. 1594.) By Mr. Emerson. To Finance Committee. Printed No. 1353. Int. 1171.

Creating a commission to investigate and report the present extent in this state of the practice of experimentation by inoculation or otherwise upon human beings in hospitals, public institutions and elsewhere, without their consent, and to report what laws are

necessary to prevent unjustifiable interference with the rights of such persons by such process. By Mr. Herrick. To Judiciary Committee. Printed No. 1374. Int. 1189.

Amending Subdivision 7, Section 160, Public Health Law, by striking out the definition of "the practice of medicine" the qualification reading, "who shall either offer or undertake, by any means or method, to diagnose, treat." (Same as A. 1715.) By Mr. Torborg. To Public Health Committee. Printed No. 1386. Int. 1201.

Amending Insanity Law, by adding four new sections, 173 to 176, authorizing any licensed private institution for the insane to receive inebriates for commitment and care. By Mr. Seeley. To Judiciary Committee. Printed No. 1430. Int. 1240.

Amending Sections 2, 3, 4, 11, 13, 14, 20, 21, 23, 25, 27, 31, 34, 35, 38, 320, 322, 324, 328 and 329 of Public Health Law, and adding new Sections 2-a, 3-a, 4-a, 4-b, 4-c, 21-a, 21-b, 21-c, and 326-a, relative to public health councils, to divisions in the State Department of Health, sanitary districts, contagious diseases, powers and duties of local boards of health, reports of tuberculosis cases, commitment of dangerous and careless patients. (Recommended by Advisory Health Commission appointed by Governor.) (Same as A. 1665.) By Mr. Seeley. To Public Health Committee. Printed No. 1432. Int. 1242.

Amending Sections 45, 47, 48, 49-a and 49-e, County Law, by providing that no county tuberculosis hospital authorized by this chapter shall hereafter be located on the grounds of an almshouse, and relative to improvement of hospital buildings and the maintenance of patients. (Same as A. 1740.) By Mr. White. To Internal Affairs Committee. Printed No. 1545. Int. 1308.

Amending the Public Health Law by adding new Sections 336-a and 339-a, providing for licensing by the State Health Commissioner, after examination of the sanitary condition of the plants, of all cold storage warehouses, the annual license being fixed at \$25. The Health Commissioner may seize and condemn any articles of food in such warehouses which are found to be unfit for use. (Same as A. 1804.) By Mr. Seeley. To Public Health Committee. Printed No. 1587. Int. 1345.

Amending Section 1571, Greater New York Charter, providing for the appointment by coroners in each borough, of so many coroner's physicians as shall be provided for in the annual budget, their salaries to be fixed by the Board of Estimate and Apportionment, and repealing Sections 1769 and 1770, Chapter 410, Laws of 1882. (N. Y. City Consolidation Act.) (Same as A. 1851.) By Mr. Patten. To Cities Committee. Printed No. 1589. Int. 1347.

Repealing Section 121, Penal Law, so as to remove the prohibition against forming new corporations for prevention of cruelty to animals. By Mr. Stilwell. To Judiciary Committee. Printed No. 1592. Int. 1350.

Amending the Public Health Law generally, in relation to vital statistics. (Same as A. 1852.) By Mr. Seeley. To Public Health Committee. Printed No. 1603. Int. 1358.

Amending Section 1571, Greater New York Charter, and repealing Sections 1769 and 1770, Chapter 410, Laws of 1882, by providing that the coroners in each borough shall appoint as many coroner's physicians as shall be provided for by the annual budget. (Same as A. 1851.) By Mr. Sanner. To Cities Committee. Printed No. 1632. Int. 1363.

Amending Section 4, Public Health Law, and inserting new sections, 17 to 19-d, inclusive, providing for the medical examination by the State Health Department of all persons engaged in the production or handling of milk or milk products, and for an inspection of the sanitary condition of the dwellings and surroundings where such persons are employed. (Same as A. 1888. By Mr. Seeley. To Public Health Committee. Printed No. 1661. Int. 1392.

IN ASSEMBLY.

Amending Section 1746, Penal Law, making it unlawful for a manufacturer or dealer in drugs or a licensed pharmacist or druggist to sell or furnish alkaloid cocaine or its salts except directly to a licensed physician, veterinarian, dentist, pharmacist or druggist. The manufacturer or dealer must label the outside wrapper of the package with the name and quantity of cocaine or its salts and the word "poison" as well as the name and place of business of the manufacturer or dealer; and must keep a book record of the sale open for inspection by any police or sanitary authority. This record must be preserved until five years after the date of the last entry made in it. (Same as S. 1010; A. 1443.) By Mr. Kerrigan. To Codes Committee. Printed No. 1578. Int. 1436.

Repealing Section 1746, Penal Law, and adding new section 1746, making it unlawful for a manufacturer or dealer in drugs or a licensed pharmacist or druggist to sell or furnish alkaloid cocaine or its salts except directly to a licensed physician, veterinarian, dentist, pharmacist or druggist. The manufacturer or dealer must label the outside wrapper of the package with the name and quantity of cocaine or its salts and the word "poison" as well as the name and place of business of the manufacturer or dealer; and must keep a book record of the sale open for inspection by any police or sanitary authority. This record must be preserved until five years after the date of the last entry made in it. (Same as A. 1436; S. 1010.) By Mr. Campbell. To Codes Committee. Printed No. 1600. Int. 1443.

Amending Sections 238, 239, Public Health Law, prohibiting, except upon the written or verbal order of a physician, the refilling more than once of prescriptions containing chloral in which the dose of opium exceeds ten grains, dimethyl morphine in which the dose of opium exceeds one-twenty-fourth of a grain, codeine in which the dose of opium exceeds one-eighth of a grain, or derivatives of opium or morphine. By Mr. Bush. To Public Health Committee. Printed No. 1659. Int. 1501.

Amending Section 1745, Penal Law, prohibiting except upon the written or verbal order of a physician, the refilling more than once of prescriptions containing chloral in which the dose of opium exceeds ten grains, dimethyl morphine in which the dose of opium exceeds one-twenty-fourth of a grain, codeine in which the dose of opium exceeds one-eighth of a grain, or derivatives of opium or morphine, violation to constitute a misdemeanor. By Mr. Bush. To Codes Committee. Printed No. 1660. Int. 1502.

Amending Public Health Law, by adding new section 22-a, requiring that every physician, coroner or coroner's physician shall state in the certificate relating to the death of an infant under one year of age, what the mode of feeding of the infant was, to the best information and belief of the physician or coroner. By Mr. Gibbs. To Public Health Committee. Printed No. 1688. Int. 1519.

Amending the Public Health Law, by adding new Section 51, providing that no artificial or patented infant food shall be sold until samples, duly proven, shall have been analyzed and have received the approval of the Health Commissioner. Violation of this provision or adulteration of food of which samples have been submitted shall constitute a felony. By Mr. Gibbs. To Public Health Committee. Printed No. 1689. Int. 1520.

Amending Section 138, Public Health Law, by extending the provision that the expenses, services and charges of the Health Officer of the Port of New York shall be a lien on the vessels, merchandise or other property in relation to which they have been made and incurred, to the charterer or agent of the vessel where the owner does not reside within the United States. (Same as S. 1111.) By Mr. McKee. To Public Health Committee. Printed No. 1702. Int. 1533.

Permitting the Board of Trustees of the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis at Ray Brook to grant for public school purposes in perpetuity one acre of land for School District No. 5, town of North Elba, Essex County. (Same as S. 1171.) By Mr. Prime. To Ways and Means Committee. Printed No. 1777. Int. 1594.

Amending Sections 2, 3, 4, 11, 13, 14, 20, 21, 23, 25, 27, 31, 34, 35, 38, 320, 322, 324, 328 and 329 of Public Health Law, and adding new Sections 2-a, 3-a, 4-a, 4-b, 4-c, 21-a, 21-b, 21-c, and 326-a, relative to public health councils, to divisions in the State Department of Health, sanitary districts, contagious diseases, powers and duties of local boards of health, reports of tuberculosis cases, commitment of dangerous and careless patients. (Same as S. 1242.) By Mr. McDaniels. To Public Health Committee. Printed No. 1862. Int. 1665.

Amending Subdivision 7, Section 160, Public Health Law, by striking out the definition of "the practice of medicine" the qualification reading, "who shall either offer or undertake, by any means or method, to diagnose, treat." (Same as S. 1201.) By Mr. Monahan. To Public Health Committee. Printed No. 1933. Int. 1715.

Amending Sections 45, 47, 48, 49-a and 49-e, County Law, by providing that no county tuberculosis hospital authorized by this chapter shall hereafter be located on the grounds of an almshouse, and relative to improvement of hospital buildings and the maintenance of patients. By Mr. Telford. To Internal Affairs Committee. Printed No. 1967. Int. 1740.

Amending Section 1571, Greater New York Charter, providing for the appointment by coroners in each borough, of so many coroner's physicians as shall be provided for in the annual budget, their salaries to be fixed by the Board of Estimate and Apportionment. (Same as S. 1347.) By Mr. Willmott. To Cities Committee. Printed No. 2004. Int. 1763.

Amending the General Municipal Law, by adding new Section 135-a, authorizing any municipal corporation maintaining a hospital or sanatorium for the treatment of tuberculosis to establish and maintain workshops in connection therewith for the production of articles or supplies required by such hospital or sanatorium and by any other institution or department of such municipality. (Same as S. 1359.) By Mr. Evans. To Cities Committee. Printed No. 2077. Int. 1812.

Amending Chapter 465, Laws of 1910, by providing for a board of seven trustees to manage the tuberculosis hospital in the City of Poughkeepsie, and providing for the admission thereto of persons from Dutchess County, outside the city. By Mr. J. A. Kelly. To Public Health Committee. Printed No. 2084. Int. 1819.

Creating a commission to investigate the present condition and extent of the practice of experimentation upon living animals, such commission to consist of five members, to be appointed by the Governor, two of whom shall be physicians or persons experienced in the practice of vivisection, two to be active members of some organization for the prevention of cruelty in animal experimentation, the remaining member to be appointed at large. (Same as S. 153.) By Mr. McKee. To Judiciary Committee. Printed No. 2088. Int. 1823.

Amending Section 4, Public Health Law, and inserting new Sections 17 to 19-d, inclusive, providing for the medical examination by the State Health Department of all persons engaged in the production or handling of milk or milk products, and for an inspection of the sanitary condition of the dwellings and surroundings where such persons are employed. (Same as S. 1392.) By Mr. Carroll. To Public Health Committee. Printed No. 2188. Int. 1888.

Inserting new Article 20-a in Education Law, providing for medical inspection of pupils attending public schools in this state, such inspection to include the service of a trained and registered nurse, if one is employed, and for the examination of pupils for the existence of diseases or physical defects and for testing the eyes and ears. Medical inspectors are to be em-

ployed by the Board of Education in each city and union free school district. (Same as S. 1415.) By Mr. McKee. To Public Education Committee. Printed No. 2197. Int. 1897.

Adding four new Sections, 173 to 176, to Insanity Law, authorizing any licensed private institution for the insane to receive inebriates for commitment and care. By Mr. Kelly. To General Laws Committee. Printed No. 2475. Int. 2094.

The Medical Society of the State of New York

17 West 43d Street, New York

March 15, 1913.

The regular annual meeting of the Medical Society of the State of New York will be held on April 29, 1913, at 11 A. M., in Convention Hall, Rochester, N. Y.

JOHN F. W. WHITBECK, M.D., *President*.

WISNER R. TOWNSEND, M.D., *Secretary*.

BY-LAWS. CHAPTER II.

Meetings.

SECTION 1. Each member in attendance at the annual session of the Society shall enter his name and the name of his county society in the register to be kept by the Secretary of the Society for that purpose. No member shall take part in any of the proceedings at an annual session until he shall have complied with the provisions of this section.

SEC. 2. All registered members may attend and participate in the proceedings and discussions of the general meetings of the Society and of the sections.

REGISTRATION.

The Bureau of Registration and Information will be located in Convention Hall. It will be in charge of the Committee on Arrangements. All desiring information or assistance of any kind should apply to the Bureau.

March 15, 1913.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York will be held on April 28, 1913, at 8.00 P. M., in Convention Hall, Rochester, N. Y.

JOHN F. W. WHITBECK, M.D., *President*.

WISNER R. TOWNSEND, M.D., *Secretary*.

SCIENTIFIC PROGRAM.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.

Thomas J. Harris, M.D., Chairman, New York.
Henry L. Elsner, M.D., Syracuse.
Parker Syms, M.D., New York.
And the Officers of the Sections.

BY-LAWS, MEDICAL SOCIETY OF THE STATE OF NEW YORK,

CHAPTER X.

SECTION 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by consent.

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in THE NEW YORK STATE JOURNAL OF MEDICINE.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

The order of reading papers will be in accordance with the printed program.

TUESDAY, APRIL 29TH.

Convention Hall, 11 A. M.

107th Annual Meeting of the Medical Society of the State of New York.

Invocation by Rev. R. R. M. Converse, LL.D.

Calling the Society to order.

Address of welcome by the Chairman of the Committee on Arrangements.

Reading of the minutes of the last meeting by the Secretary.

Address of welcome by Hon. Hiram H. Edgerton, Mayor of Rochester.

Address, by Hon. Robert M. Searle, President, Chamber of Commerce.

Annual Oration on Medicine, "Certain Elementary Concepts in Education Applied to Medicine," Prof. John G. Adami, M.D., F.R.S., McGill Univ., Montreal.

Address by the President, John F. W. Whitbeck, M.D., Rochester.

2 P. M.

Meeting of Five Sections.

Section on Medicine—Headquarters, Powers' Hotel; meeting at same place.

Section on Surgery—Headquarters, Hotel Seneca; meeting at Convention Hall.

Section on Eye, Ear, Nose and Throat—Headquarters, Whitcomb Hotel; meeting at same place.

Section on Pediatrics—Headquarters, Hotel Rochester; meeting at same place.

Section on Obstetrics and Gynecology—Headquarters, Hotel Seneca; meeting at same place.

8.30 P. M.

General Meeting, Convention Hall. Open to the public.

"Prevention and Cure of Cancer," Parker Syms, M.D., New York.

SECTION ON MEDICINE.

Chairman, DeLancey Rochester, M.D., Buffalo.
Secretary,
Place of Meeting—Powers' Hotel.

TUESDAY, APRIL 29TH.

2 P. M.

SYMPOSIUM ON DISEASES OF THE CIRCULATORY SYSTEM.

1. "Etiology of Cardiac Diseases," Henry C. Bushwell, M.D., Buffalo.

2. "Pain and Other Clinical Manifestations of Myocarditis," Alexander Lambert, M.D., New York.

3. "The Symptomology and Diagnosis of Cardiac Involvement in Syphilis," Harlow Brooks, M.D., New York.

4. "The Relation of Internal Secretions to the Circulation," Nelson G. Russell, M.D., and Carroll J. Roberts, M.D., Buffalo.

5. "The Polygraph," George W. Ross, M.D., Toronto, Ont., by invitation.

6. "Prevention and Treatment of Cardiac and Arterial Decompensation," Louis Faugères Bishop, M.D., New York.

Discussion of these papers to be opened by Robert H. Halsey, M.D., New York, Hubert Schoonmaker, M.D., Clifton Springs, and Benjamin W. Stearns, M.D., Unadilla.

7. "Association of Uterine Growths with Goitre; typical and atypical Exophthalmic Goitre," Henry L. Elsner, M.D., Syracuse.

8. "Treatment of Leukæmia by Benzol with Results in a Case of the Splenomyelogenous form," Jerome Meyers, M.D., Albany, and Thomas W. Jenkins, M.D., Albany.

WEDNESDAY, APRIL 30TH.

9 A. M.

Place of Meeting—Convention Hall.

JOINT SESSION OF THE SECTION ON MEDICINE WITH THE SECTION ON SURGERY.

SYMPOSIUM ON DUODENAL ULCER.

"Etiology and Morbid Anatomy," Marshall Clinton, M.D., Buffalo.

9. "Diagnosis and Prognosis," James T. Pilcher, M.D., Brooklyn.

"Complications," John B. Harvie, M.D., Troy.

10. "Non-Surgical Treatment," Charles G. Stockton, M.D., Buffalo.

"Surgical Treatment," John B. Murphy, M.D., Chicago, Ill., by invitation.

Discussion for Medical Section to be opened by Allen A. Jones, M.D., Buffalo, and Max Einhorn, M.D., New York; for Surgical Section, Robert T. Morris, M.D., and Charles L. Gibson, M.D., New York, and George W. Crile, M.D., Cleveland, Ohio, by invitation.

Place of Meeting—Powers' Hotel.

11. "Typhlo-albuminuria," Heinrich Stern, M.D., New York.

12. "Cardiospasm, what it is; what it seems to be," Anthony Bassler, M.D., New York.

WEDNESDAY, APRIL 30TH.

2 P. M.

13. "Co-operation of State Medical Societies in Public Health Education," Eleanora S. Everhard, M.D., Dayton, Ohio, Chairman A. M. A. Committee for Public Health Education Among Women, by invitation.

14. "Industrial Disease Reporting Law," Leonard W. Hatch, M.D., Albany, by invitation.

Discussion to be opened by Mr. John Shillady, Buffalo, by invitation.

15. "Treatment of Hemorrhage by Powdered Normal Serum," G. H. A. Clowes, M.D., Buffalo, by invitation.

16. "Experience with Neo-salvarsan at the Harlem Hospital," Howard Fox, M.D., New York.

17. "Results of Salvarsan Therapy in Malignant Syphilis Precox, Syphilide of the Palms and Gumma of the Tongue," Herman F. L. Ziegel, M.D., New York.

18. "The Present Obligation of the General Practitioner Regarding Syphilis as to His Patient and as to the Public," E. Wood Ruggles, M.D., Rochester.

19. "Note on Frequency of Drug Eruptions," George H. Fox, M.D., New York.

20. "Lantern Demonstration of Skin Diseases," Grover W. Wende, M.D., Buffalo.

THURSDAY, MAY 1ST.

9 A. M.

SYMPOSIUM ON TUBERCULOSIS.

21. "Examination of Those Exposed as a Factor in the Prevention and Relief of Tuberculosis," John H. Pryor, M.D., Buffalo.

22. "Auscultation at the Acromion Process; Its Significance in Apical Disease," Robert Abrahams, M.D., New York.

23. "Treatment of Pulmonary Tuberculosis by Artificial Pneumo-thorax," J. Woods Price, M.D., Saranac Lake.

24. "Tuberculin Treatment," Edward R. Baldwin, M.D., Saranac Lake.

25. "Control of Advanced Cases," Hermann M. Biggs, M.D., New York.

26. "Incidence of Renal Involvement in Pulmonary Tuberculosis," Henry S. Bernstein, M.D., Albany, by invitation.

Discussion to be opened by John M. Swan, M.D., Rochester and S. Adolphus Knopf, M.D., New York.

SECTION ON SURGERY.

Chairman, Martin B. Tinker, M.D., Ithaca.

Secretary, Willis E. Bowen, M.D., Rochester.

Place of Meeting—Convention Hall.

TUESDAY, APRIL 29TH.

2 P. M.

GENERAL SURGERY.

1. "Conservation Treatment of the Injuries of the Hand," Vacil D. Bozovsky, M.D., Dunkirk.

Discussion by Joseph W. Magill, M.D., Rochester, and Frederick W. Lester, M.D., Seneca Falls.

2. "Uses of Radium in Surgery," Howard A. Kelly, M.D., Baltimore, by invitation.

Discussion by Robert Abbé, M.D., and William S. Bainbridge, M.D., New York, Roswell Park, M.D., Buffalo.

3. "Operations Pertaining to the Bile Passages," Louis F. O'Neill, M.D., Auburn.

Discussion by Frederick W. Zimmer, M.D., Rochester, and Mark O'Meara, M.D., Kingston.

4. "Operation for Abscess of the Liver," Frederick W. Sears, M.D., Syracuse.

Discussion by Ross G. Loop, M.D., Elmira.

5. "The True Value of the Operation for Cancer," Edward M. Foote, M.D., New York.

Discussion by Nathan Jacobson, M.D., Syracuse, and William S. Bainbridge, M.D., New York.

6. "Possible Errors in the Diagnosis of Abdominal Cancer—A Plea for Exploratory Laparotomy. Illustrative Cases," William S. Bainbridge, M.D., New York.

Discussion by John A. Wyeth, M.D., New York, Russell S. Fowler, M.D., Brooklyn, and Arthur S. Chittenden, M.D., Binghamton.

7. "Differential Diagnosis of Sarcoma of the Long Bones, Lantern Slide Demonstration," William B. Coley, M.D., New York.

Discussion by Joseph P. Creveling, M.D., Auburn, John A. Wyeth, M.D., New York, Nathan Jacobson, M.D., Syracuse.

WEDNESDAY, APRIL 30TH.

9 A. M.

JOINT SESSION OF THE SECTION ON SURGERY WITH THE SECTION ON MEDICINE.

SYMPOSIUM ON DUODENAL ULCER.

8. "Etiology and Morbid Anatomy," Marshall Clinton, M.D., Buffalo.

"Diagnosis and Prognosis," James T. Pilcher, M.D., Brooklyn.

9. "Complications," John B. Harvie, M.D., Troy.

"Non-Surgical Treatment," Charles G. Stockton, M.D., Buffalo.

10. "Surgical Treatment," John B. Murphy, M.D., Chicago, Ill., by invitation.

Discussion for Medical Section to be opened by Allen A. Jones, M.D., Buffalo, and Max Einhorn, M.D., New York; for Surgical Section, Robert T. Morris, M.D., and Charles L. Gibson, M.D., New York, and George W. Crile, M.D., Cleveland, Ohio, by invitation.

11. "Review of Five Years of Gastric Surgery," John F. Erdmann, M.D., New York.

Discussion by Edwin MacD. Stanton, M.D., Schenectady, and Ross G. Loop, M.D., Elmira.

WEDNESDAY, APRIL 30TH.

2 P. M.

SURGERY OF THE NERVOUS SYSTEM.

12. "The Present State of Nerve Injection," Otto G. T. Kiliani, M.D., New York.

13. "Some Conclusions Reached after 30 Years of Brain Surgery," Roswell Park, M.D., Buffalo.

Discussion on papers 12 and 13 from the standpoint of the Neurologist, by James W. Putnam, M.D., Buffalo, and Edward B. Angell, M.D., Rochester; from the standpoint of the Surgeon, Charles H. Frazier, M.D., Philadelphia, by invitation, and Edgar R. McGuire, M.D., Buffalo.

ORTHOPEDIC SURGERY.

14. "Prognosis in Infantile Paralysis," Wisner R. Townsend, M.D., New York.

15. "Importance of the Treatment of Weak Feet in Childhood," Brainerd H. Whitbeck, M.D., New York.

Discussion by Charlton Wallace, M.D., New York, and Bernard Bartow, M.D., Buffalo.

16. "Treatment of Fixed Scoliosis by the Abbott Jacket," Ralph R. Fitch, M.D., and Howard L. Prince, M.D., Rochester.

Discussion by Samuel Kleinberg, M.D., Virgil P. Gibney, M.D., New York, and Roland O. Meisenbach, M.D., Buffalo.

THURSDAY, MAY 1ST.

9 A. M.

GENITO-URINARY SURGERY.

17. "Surgery of the Prostate," Hugh H. Young, M.D., Baltimore, Md., by invitation.

Discussion by Frederick Flaherty, M.D., Syracuse, and Edward L. Keyes, M.D., New York.

18. "Some Aspects in Relation to the Chronic Gonorrhoeic, from the Standpoint of Surgery and Eugenics," James N. Vander Veer, M.D., Albany.

Discussion by Horace L. Leiter, M.D., Syracuse, and E. Wood Ruggles, M.D., Rochester.

19. "Report of 22 Cases of Tumor of the Bladder and Conclusions as to Appropriate Methods of Treatment," Paul M. Pilcher, M.D., Brooklyn.

Discussion by Edward L. Keyes, Jr., M.D., New York.

20. "Accidental Bladder Injuries in Hernia Surgery, Based Upon 2,000 Personal Operations," William B. DeGarmo, M.D., New York.

Discussion by Albert Vander Veer, M.D., Albany, and Michael M. Lucid, M.D., Cortland.

21. "Treatment of Large Ventral Hernia by Inversion," Irving S. Haynes, M.D., New York.

Discussion by Royale H. Fowler, M.D., Brooklyn, Owen E. Jones, M.D., Rochester, and Ledra Heazlit, M.D., Auburn.

22. "Intestinal Obstruction," William D. Johnson, M.D., Batavia.

Discussion by Howard B. Besemer, M.D., Ithaca, and Fred C. Rice, M.D., Ripley.

23. "X-ray in Genito-Urinary Surgery," Eugene W. Caldwell, M.D., and Harry M. Imboden, M.D., New York.

Discussion by Clarence E. Coon, M.D., Syracuse.

SECTION ON EYE, EAR, NOSE AND
THROAT.

Chairman, John E. Weeks, M.D., New York.

Secretary, Thomas H. Halsted, M.D., Syracuse.

Place of Meeting—Whitcomb Hotel.

TUESDAY, APRIL 29TH.

2 P. M.

EYE.

1. "Squint and Its Correction," John J. O'Brien, M.D., Schenectady.

Discussion opened by Julius H. Kevand, M.D., Syracuse, by invitation.

2. "Importance of Ophthalmological Examinations in Immigrants," Martin Cohen, M.D., New York.

Discussion by Walter E. Lambert, M.D., Percy Fridenberg, M.D., Charles B. Meding, M.D., by invitation, and Arnold Knapp, M.D., New York.

3. "Experiments with the Different Tests of Heterophoria," Lucien Howe, M.D., Buffalo.

Discussion by G. A. E. Davis, M.D., New York.

4. "Some Uses of Cyanide of Mercury in Ophthalmology," Charles B. Meding, M.D., New York, by invitation.

Discussion by Arnold Knapp, M.D., New York, and S. Boyce Craton, M.D., Syracuse.

5. "Central Scotoma and Blind Spot Anomalies; Their Clinical Significance," Percy Fridenberg, M.D., New York.

Discussion by Lewis A. Coffin, M.D., New York, Lee M. Francis, M.D., Buffalo, and Sidney Yankauer, M.D., New York.

6. "The Surgical Treatment of High Myopia," Walter E. Lambert, M.D., New York.

Discussion opened by Percy Fridenberg, M.D., New York.

WEDNESDAY, APRIL 30TH.

9 A. M.

JOINT SESSION, EYE, EAR, NOSE AND THROAT.

Symposium on the Hypophysis:

7. "The Physiology of the Hypophysis," Prof. Sutherland Simpson, Ithaca, by invitation.

Discussion by Howard L. Prince, M.D., Rochester.

8. "Ocular Disturbances of Hypophyseal Diseases," Arnold Knapp, M.D., New York.

Discussion by John E. Weeks, M.D., Cornelius G. Coakley, M.D., New York, and F. W. Marlow, M.D., Syracuse.

9. "Intra-nasal Approach to the Hypophysis," Lewis A. Coffin, M.D., New York.

Discussion by Edward D. Fisher, M.D., and Thomas J. Harris, M.D., New York.

10. "Surgical Aspects of the Pituitary Question," Harvey W. Cushing, M.D., Boston, Mass., by invitation.

11. "Demonstration of a Model Illustrating the Technique of the Intra-nasal Operation on the Lachrymal Apparatus," Sidney Yankauer, M.D., New York.

Discussion by Stephen Lutz, M.D., Brooklyn.

12. "History of a Case of Dacryocystitis presenting several Complications including Orbital Abscess and Optic Neuritis," Albert C. Snell, M.D., Rochester.

Discussion by Walter B. Weidler, M.D., New York, Lee M. Francis, M.D., Buffalo, Arthur J. Bedell, M.D., Albany.

WEDNESDAY, APRIL 30TH.

2 P. M.

EAR.

13. "The Economic and Social Aspect of Deafness," Harold Hays, M.D., New York.

Discussion by Edward B. Dench, M.D., Samuel J. Kopetzky, M.D., Irving W. Voorhees, M.D., New York, and Sargent F. Snow, M.D., Syracuse.

14. "The Conservative Treatment of Chronic Aural Suppuration," Robert L. Loughran, M.D., New York.

Discussion by Clement F. Theisen, M.D., Albany.

SYMPOSIUM ON LABYRINTHITIS.

15. "Serous and Suppurative Labyrinthitis, Differential Diagnosis," Irving W. Voorhees, M.D., New York.

16. "Indications for Operative Interference in Labyrinthitis," Frederick Whiting, M.D., New York.

17. "Technique of the Labyrinth Operation," Edward B. Dench, M.D., New York.

Discussion by John D. Richards, M.D., New York.

18. "Tubercular Affections of the Ear," Thomas H. Farrell, M.D., Utica.

Discussion by Moses D. Lederman, M.D., Arthur B. Duell, M.D., New York, E. E. Hinman, M.D., Clement F. Theisen, M.D., Albany, John S. Kirkendall, M.D., Ithaca, and John Kepke, Brooklyn.

19. "Operative Findings and Results in a Few Cases of Acute and Chronic Mastoiditis," J. M. Ingersoll, M.D., Cleveland, Ohio, by invitation.

Discussion opened by Wendell C. Phillips, M.D., New York.

THURSDAY, MAY 1ST.

9 A. M.

NOSE AND THROAT.

20. "Acute Thyroiditis as a Complication of Acute Tonsillitis," Clement F. Theisen, M.D., Albany.

21. "Vincent's Angina," Gerhard H. Cocks, M.D., New York.

Discussion by Hubert Arrowsmith, M.D., Brooklyn, John McCoy, M.D., Lewis A. Coffin, M.D., New York, Thomas H. Halsted, M.D., Syracuse, and Nathan D. McDowell, M.D., Rochester.

22. "Indications for Operation on the Nasal Septum," James F. McCaw, M.D., Watertown.

Discussion by John O. Roe, M.D., Rochester, Lewis A. Coffin, M.D., William W. Carter, M.D., Lee M. Hurd, M.D., New York, and James J. Mooney, M.D., Buffalo.

23. "Experiences with Direct Laryngoscopy, Bronchoscopy and Esophagoscopy," John McCoy, M.D., New York.

Discussion by Emil Mayer, M.D., New York, and Walter S. Daly, M.D., Ogdensburg.

24. "Nasal Obstruction as a Predisposing Factor in the Etiology of Tuberculosis," James E. McCambridge, M.D., Poughkeepsie.

Discussion by G. H. Rockwell, M.D., Syracuse.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Chairman, William M. Brown, M.D., Rochester.
Secretary, Ross McPherson, M.D., New York.
Place of Meeting—Hotel Seneca.

TUESDAY, APRIL 29TH.

2 P. M.

1. "The Difficulties in the Diagnosis of Extra-Uterine Pregnancy," Samuel M. Brickner, M.D., New York.

2. "Two Unusual Cases with Presentation of Specimens," Eugene W. Belknap, M.D., Syracuse, by invitation.

3. "Invalidism in Women from Prolonged Menorrhagia or Menorrhagia," Walter B. Chase, M.D., Brooklyn.

Discussion by Samuel W. Bandler, M.D., New York.

4. "Contraction Ring Dystocia," Paul T. Harper, M.D., Albany.

Discussion by Francis C. Goldsborough, M.D., Buffalo.

5. "Pituitrin in Obstetrics," James K. Quigley, M.D., Rochester.

Discussion by Ross McPherson, M.D., New York.

6. "Central Laceration of the Perineum," Albert G. Swift, M.D., Syracuse, by invitation.

WEDNESDAY, APRIL 30TH.

9 A. M.

7. "Cancer of the Uterus, Importance of Early Diagnosis," LeRoy Broun, M.D., New York.

8. "Nephrocoloptosis in Women," Howard W. Longyear, M.D., Detroit, Mich., by invitation.

Discussion by James Gregory Mumford, M.D., Clifford Springs, and Earl P. Lothrop, M.D., Buffalo.

9. "A Critical Review of the Medical and Surgical Treatment of Puerperal Eclampsia," E. Gustav Zinke, M.D., Cincinnati, O., by invitation.

Discussion by Franklin S. Newell, M.D., Boston, Mass., by invitation and Walter B. Chase, M.D., Brooklyn.

10. "Emptying the Uterus as a Method of Treatment of Puerperal Eclampsia," Reuben Peterson, M.D., Ann Arbor, Mich., by invitation.

11. "A Preliminary Report on the Treatment of Toxæmias of Pregnancy with Placental Serum," Abraham J. Rongy, M.D., New York.

WEDNESDAY, APRIL 30TH.

2 P. M.

12. "The Principles Underlying the Successful Treatment of Sterility in Women," Edward Reynolds, M.D., Boston, Mass., by invitation.

13. "The Role of Ovarian Disease in the Production of Sterility," George W. Kosmak, M.D., New York.

14. "The Stigmata of Decadence in Gynecology," Robert T. Morris, M.D., New York.

15. "The Need of Individualization in Obstetrics," Franklin S. Newell, M.D., Boston, Mass., by invitation.

Discussion by Walter Chipman, M.D., Montreal, by invitation.

16. "Cesarean Section," Asa B. Davis, M.D., New York.

Discussion by Edward P. Davis, M.D., Philadelphia, by invitation.

THURSDAY, MAY 1ST.

9 A. M.

17. "Dysmenorrhœa," J. Henry Carstens, M.D., Detroit, Mich., by invitation.

Discussion by Aaron B. Miller, M.D., Syracuse.

18. "Methods of Minimizing the Mortality and Morbidity in Abdominal Sections for Pelvic Disease," George W. Crile, M.D., Cleveland, by invitation.

19. "Ectopic Pregnancy," Edward W. Mulligan, M.D., Rochester.

20. "Efficient Methods in the Treatment of Placenta Prævia," James A. Harrar, M.D., New York.

Discussion by James R. Torbert, M.D., Boston, by invitation.

21. "Human Serum Treatment for Hemorrhagic Diseases of the New-born," John E. Welch, M.D., New York.

Discussion by George W. Ross, M.D., Toronto, Ont., by invitation.

SECTION ON PEDIATRICS.

Chairman, Henry L. K. Shaw, M.D., Albany.
Secretary, Thomas S. Southworth, M.D., New York.
Place of Meeting—Hotel Rochester.

TUESDAY, APRIL 29TH.

2 P. M.

1. "The Wassermann Reaction in Various Conditions in Children," L. Emmett Holt, M.D., New York.
Discussion by Linnaeus E. La Fétra, M.D., New York and A. A. Thibaudeau, M.D., Buffalo, by invitation.
2. "Pulmonary Tuberculosis in Childhood," Louis C. Ager, M.D., Brooklyn.
Discussion by John H. Pryor, M.D., Buffalo, and Edward G. Whipple, M.D., Rochester.
3. "Rational Treatment of Hemorrhagic Affections in Children," LeGrand Kerr, M.D., Brooklyn.
Discussion by John E. Welch, M.D., New York.
4. "Diphtheria," Joseph R. Culkin, M.D., Rochester.
Discussion by Matthias Nicoll, Jr., M.D., New York, and Jerome S. Leopold, M.D., New York.
5. "Recurrent Vomiting in Children," A. Clifford Mercer, M.D., Syracuse.
Discussion by George E. Clark, M.D., Skaneateles, Henry W. Titus, M.D., New Rochelle and Charles L. Hinchey, M.D., Rochester.
6. "Differential Diagnosis of the Paralyzes Occurring in Early Life," Henry A. Gribbon, M.D., Poughkeepsie.
Discussion by Wisner R. Townsend, M.D., and Floyd M. Crandall, M.D., New York.

WEDNESDAY, APRIL 30TH.

9 A. M.

7. "Food Idiosyncrasies," Jacob S. Otto, M.D., Buffalo.
Discussion by Edward J. Wynkoop, M.D., Syracuse.
8. "Use and Abuse of Sugar in the Diet of Children," Elias H. Bartley, M.D., Brooklyn.
Discussion by Louis C. Ager, M.D., Brooklyn.
9. "Some Observations on Infant Feeding," Harry Rulison, M.D., Albany.
10. "Infant Feeding with Undiluted Cow's Milk," William B. Hanbidge, M.D., Ogdensburg.
Discussion on papers 7, 8, 9 and 10 by Charles R. Witherspoon, M.D., Rochester, J. Roberts Johnson, M.D., Syracuse, George H. Van Gaasbeck, M.D., Kingston, and F. Lansing Stebbins, M.D., Geneva.
11. "A Practical Study of Goat's Milk in Infant Feeding as Compared with Cow's Milk," DeWitt H. Sherman, M.D., Buffalo.
12. "Infant Feeding from a New Standpoint," Godfrey R. Pisek, M.D., New York.
13. "X-ray as a Means of Diagnosis in Intussusception," Irving M. Snow, M.D., Buffalo.
Discussion by Leon T. LeWald, M.D., and Arthur F. Holding, M.D., New York.

WEDNESDAY, APRIL 30TH.

2 P. M.

14. "Social Pediatrics," Ira S. Wile, M.D., New York.
Discussion by Royal Storrs Haynes, M.D., New York, Linnaeus E. La Fétra, M.D., New York, and Godfrey R. Pisek, M.D., New York.

15. "The Physician and the Mentally Defective Child," Isabelle T. Smart, M.D., New York.

Discussion by Mary Sutton Macy, M.D., New York.

16. "Some Neglected Aspects of the Problem of Infant Mortality," Philip Van Ingen, M.D., New York.

Discussion by Godfrey R. Pisek, M.D., New York.

17. "Nerves and the Nursing Mother," Conway A. Frost, M.D., Utica.

Discussion by Florence Staunton, M.D., Utica, and Cornelia White Thomas, M.D., Rochester.

18. "The Value of Discipline in the Care of the Sick Child," T. Wood Clarke, M.D., Utica.

Discussion by Mr. Herbert Weet, Rochester, by invitation.

THURSDAY, MAY 1ST.

9 A. M.

19. "Care of the New Born," Carl G. Leo-Wolf, M.D., Niagara Falls.

Discussion by John A. Ragone, M.D., DeWitt H. Sherman, M.D., Buffalo, and Henry Kurth, M.D., Schenectady.

20. "Enuresis and Chronic Digestive Disturbances," Frank vander Bogert, M.D., Schenectady.

Discussion by Arthur Clesson Hagedorn, M.D., Gloversville, and Agnes E. Page, M.D., Albany.

21. "A Plea for the More Frequent use of Lumbar Puncture," Edward J. Wynkoop, M.D., Syracuse.

Discussion by Walter Lester Carr, M.D., and Herman Schwarz, M.D., New York.

22. "Studies from the Infants' Summer Hospital," Joseph Roby, M.D., Rochester.

23. "Studies from the Infants' Summer Hospital," Norris G. Orchard, M.D., and Ford R. Eihlinger, Ph.D., Rochester, by invitation.

Discussion on papers 22 and 23 by Charles Herrman, M.D., New York, and E. Eliot Harris, M.D., New York.

ENTERTAINMENTS.

TUESDAY, APRIL 29TH.

10 P. M.

Dance in the Ball Room of the Hotel Seneca.

WEDNESDAY, APRIL 30TH.

4 P. M.

Automobile ride through the parks for the ladies.

6.30 P. M.

Reception—followed by a dinner at 7 P. M., at the Powers Hotel, for the members. Tickets for dinner, \$2.50.

HOTELS AND RATES.

Hotel Rochester . . .	\$1.50—\$2.50	a day.	European plan.
Hotel Seneca	1.50— 4.00	"	"
Powers Hotel	1.50— 3.50	"	"
Whitcomb House . . .	1.50 and up	"	"
Hotel Eggleston . . .	1.00— 2.50	"	"
Osburn House	2.50— 3.50	"	American
Temperance Hotel . . .	.50	a day and up.	
Hotel Berkeley, corner Franklin Street,	\$0.75	a day and up.	
"The Pillars," an Inn especially adapted to families and ladies,	\$2.00	a day.	American plan.

ANNOUNCEMENT.

Members are requested to secure accommodations in advance by writing to the hotels and boarding houses. If a member arrives at Rochester without having secured accommodations, he should apply at once to the Committee on Registration and Information, which will be found at the Registration Booth in Convention Hall.

REDUCED RAILROAD RATES.

INFORMATION REGARDING PURCHASING OF TICKETS AND TRAIN SERVICE.

A reduction of fare and three-fifths on the certificate plan from points in New York State has been secured for persons attending the meeting of The Medical Society of the State of New York, Rochester, N. Y., April 28th—May 1st.

The following directions are submitted for your guidance:

Tickets at the regular full one-way first-class fare for the going journey may be secured within three days (exclusive of Sunday) prior to and during the first two days of the meeting. The announced opening date of the meeting is April 28th and the closing date is May 1st, consequently you can obtain your going ticket and certificate not earlier than April 24th nor later than April 30th. Be sure when purchasing your going ticket you request a certificate. Do not make the mistake of asking for a receipt.

It has been arranged that the Special Agent of the Trunk Line Association will be in attendance on April 29th and 30th and May 1st to validate certificates. A fee of 25 cents will be charged at the meeting for each certificate validated. If you arrive at the meeting and leave for home again prior to the Special Agent's arrival, or if you arrive at the meeting later than April 30th, after the Special Agent has left, you cannot have your certificate validated and consequently you will not get the benefit of the reduction on the home journey. No refund of fare will be made on account of failure to have certificate validated.

Unless 100 certificates are presented to the Special Agent at Rochester, no reduction on return tickets will be granted. It is therefore important that all members secure a certificate who purchase a ticket to the meeting.

Tickets on going trip from New York City will be accepted on all trains excepting the Twentieth Century Limited.

Trains from New York City to Rochester via N. Y. C. & H. R. R. R.

<i>Lv. Grand Central Terminal</i>		<i>Ar. Rochester</i>
Empire State Express	8.30 A.M.	4.03 P.M.
Fast Mail	8.45 A.M.	5.15 P.M.
The Mohawk	10.30 A.M.	6.29 P.M.
No. 41	12.40 P.M.	9.06 P.M.
The Westener	2.00 P.M.	11.25 P.M.
Southwestern Limited	4.00 P.M.	11.35 P.M.
Buffalo Special	9.35 P.M.	6.30 A.M.
Western New York Express..	11.35 P.M.	8.13 A.M.

On return journey Rochester to New York City

REDUCED RATES GOOD ON TRAINS

<i>Leaving Rochester</i>	<i>Arrive New York</i>
8.39 A.M.	5.00 P.M.
9.07 A.M.	6.00 P.M.
11.03 A.M.	7.15 P.M.
12.13 noon	8.00 P.M.
9.45 P.M.	7.20 A.M.
10.38 P.M.	7.50 A.M.
11.01 P.M.	7.55 A.M.
12.13 A.M.	9.00 A.M.

TRAINS FROM BUFFALO TO ROCHESTER.

<i>Leave Buffalo</i>	<i>Arrive Rochester</i>
7.00 A.M.	8.36 A.M.
7.30 A.M.	9.04 A.M.
7.55 A.M.	9.32 A.M.
9.30 A.M.	11.00 A.M.
10.45 A.M.	12.13 noon
1.00 P.M.	2.22 P.M.
3.20 P.M.	5.00 P.M.
3.30 P.M.	5.52 P.M.
5.15 P.M.	6.55 P.M.
5.20 P.M.	7.05 P.M.

REDUCED RATES GOOD ON TRAINS

<i>Leaving Rochester</i>	<i>Arrive Buffalo</i>
8.16 A.M.	10.00 A.M.
10.10 A.M.	12.50 noon
11.00 A.M.	12.55 P.M.
11.34 A.M.	1.05 P.M.
2.45 P.M.	4.30 P.M.
5.20 P.M.	7.05 P.M.
6.32 P.M.	8.00 P.M.
8.45 P.M.	10.25 P.M.

Return tickets issued at reduced rates are not good on Train 22, leaving Rochester at 8.48 A. M., and on Empire State Express, leaving Rochester at 2.24 P. M.

Information as to fares and train schedules from other stations may be secured by application to local ticket agent.

CONVENTION HALL.

SCIENTIFIC EXHIBITS.

The Medical Department of the University of Buffalo: "Various Types of Bone Disease," illustrated by specimens.

X-ray Exhibits will be given by:

Eugene W. Caldwell, M.D., Harry M. Imboden, M.D., Lewis G. Cole, M.D., Arthur F. Holding, M.D., A. Judson Quimby, M.D., Leighton R. Cornman, M.D., Myron B. Palmer, M.D., Leon S. LeWald, M.D., Byron C. Darling, M.D., Perry H. Shaw, M.D., Charles Eastmond, M.D., Clarence A. MacMinn, M.D., and Drs. Mason and Stanton.

The State Exhibit, prepared for the International Congress on Hygiene held at Washington last year, will be placed on view.

Exhibit by Rochester Health Bureau.

COMMERCIAL EXHIBITS.

The Exhibit Hall will be opened Monday, Tuesday and Wednesday from 8.30 A. M. to 10.30 P. M. and Thursday until 6 P. M.

REGULATIONS REGARDING EXHIBITS.

No drug, chemical or similar preparation used in the treatment of disease can be exhibited which does not conform to the requirements of the Council on Pharmacy and Chemistry of the American Medical Association. (A copy of these requirements will be sent on request.)

No medical journal or publication can be exhibited that contains advertisements of drugs, chemicals or similar preparations used in the treatment of disease, which do not conform to the rules of the Council on Pharmacy and Chemistry of the American Medical Association.

The following firms will be represented:

Mead, Johnson & Co., Jersey City, N. J.
Charles H. Phillips Chemical Co., New York City.
D. Appleton & Co., 29 West 32nd St., New York City.
Forbes Dry Plate Co., 165 Post St., Rochester, N. Y.
Reed & Carnrick, Jersey City, N. J.
Welch Grape Juice Co., Westfield, N. Y.
Berger Brothers, 1098 Chapel St., New Haven, Conn.
Taylor Instrument Co., Rochester, N. Y.
Macalaster-Wiggin Co., 79 Sudbury St., Boston, Mass.
Carnes Artificial Limb Co., Kansas City, Mo.
The Zemmer Co., Century Building, Pittsburgh, Pa.
E. R. Squibb & Sons, 78 Beekman St., New York City.
Wilmot Castle & Co., Rochester, N. Y.
Mellins Food Co., 221 Columbus Avenue., Boston, Mass.
Fairchild Bros. & Foster, Washington & Laight Sts., N. Y.
Horlick's Malted Milk Co., Racine, Wisconsin.
Paine Drug Co., Rochester, N. Y.
Wappler Electric Mfg. Co., 173 East 87th St., N. Y. City.
Bausch & Lomb, Rochester, N. Y.
The DeVilbiss Mfg. Co., Toledo, Ohio.
Henry K. Wampole & Co., Philadelphia, Pa.
Smith, Kline & French Co., Philadelphia, Pa.
R. J. Strassenburgh Co., Rochester, N. Y.
Electro-Surgical Instrument Co., Rochester, N. Y.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

COLLECTED PAPERS by the Staff of St. Mary's Hospital (Mayo Clinic) for 1911. Octavo of 603 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, \$5.50 net.

DISEASES OF THE STOMACH, INTESTINES AND PANCREAS. By ROBERT COLEMAN KEMP, M.D., Professor of Gastro-intestinal Diseases, New York School of Clinical Medicine. Second edition, revised and enlarged. Octavo of 1,021 pages, with 388 illustrations. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, \$6.50 net; half morocco, \$8.00 net.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY. For Practitioners and Students. By W. EASTERLY ASHTON, M.D., LL.D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Fifth Edition, Thoroughly Revised. Octavo of 1,100 pages, with 1,050 original line drawings. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, \$6.50 net; half morocco, \$8.00 net.

PRINCIPLES AND PRACTICE OF OBSTETRICS. By JOSEPH B. DE LEE, A.M. M.D., Professor of Obstetrics at the Northwestern University Medical School. Large octavo of 1,060 pages, with 913 illustrations, 150 of them in colors. Philadelphia and London. W. B. Saunders Company, 1913. Cloth, \$8.00 net; half morocco, \$9.50.

INFANT FEEDING. By CLIFFORD G. GRULEE, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College; Attending Pediatrician to Cook County Hospital. Octavo of 295 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, \$3.00 net.

PSYCHANALYSIS: ITS THEORIES AND PRACTICAL APPLICATION. By A. A. BRILL, Ph.B., M.D., Chief of the Neurological Department of the Bronx Hospital and Dispensary; Clinical Assistant in Psychiatry and Neurology at Columbia University Medical School. Octavo of 337 pages. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, \$3.00 net.

VAGINAL CELIOTOMY. By S. WYLLIS BANDLER, M.D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Octavo of 450 pages, with 148 illustrations. Philadelphia and London. W. B. Saunders Company, 1911. Cloth, \$5.00 net; half morocco, \$6.50 net.

SURGERY: ITS PRINCIPLES AND PRACTICE. By various authors. Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume VI. With 519 illustrations, 22 of them in colors. Philadelphia and London. W. B. Saunders Company, 1913.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By ANTHONY BASSLER, M.D., Professor of Clinical Medicine, New York Polyclinic Medical School and Hospital; Visiting Physician, New York Polyclinic Hospital; Chief Gastro-Enterologist, German Poliklinik; Visiting Gastro-Enterologist, Peoples Hospital, New York City; Editor American Journal of Gastro-Enterology; Member American Medical Association, Medical Society, State and County of New York; American Medical Editors' Association; Fellow New York Academy of Medicine, etc. Second edition, revised and enlarged. Copiously illustrated with numerous half-tone and line text engravings and 75 full-page half-tone plates (with over 100 figures) plain and in colors, from original photographs and drawings. Philadelphia. F. A. Davis Company, publishers, 1913. Price, \$6.00 net.

DEATHS.

ALGERNON THOMAS BRISTOW, M.D., Brooklyn, died March 26, 1913.

JOHN EDWARDS, M.D., Gloversville, died April 4, 1913.

ARCHIBALD EZEKIEL ISAACS, M.D., New York City, died March 14, 1913.

FRANK A. JONES, M.D., Rochester, died March 9, 1913.

NORMAN K. MACLEOD, M.D., Buffalo, died April 3, 1913.

PRINCE A. MORROW, M.D., New York City, died March 17, 1913.

GRANT STANLEY, M.D., Sea Cliff, died March 23, 1913.

SYLVESTER EMORY STRONG, M.D., Saratoga Springs, died March 17, 1913.

JOHN DAVIES TREZISE, M.D., Brooklyn, died March 4, 1913.

HIRAM D. WALKER, M.D., Buffalo, died February 21, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

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Vol. XIII.

MAY, 1913

No. 5

EDITORIAL DEPARTMENT

THE LEGISLATURE OF 1913.

THE increasing interest in everything relating to public health is shown by the large number of bills presented for consideration in the legislature of 1913. During the past session, up to April 15, ninety bills were introduced in the Assembly, and forty-eight of these were also introduced in the Senate—nineteen were introduced in the Senate but not in the Assembly. Many of the bills were of purely local interest and attracted but little attention except from those specially interested. Others were of state wide and even of national interest because the advanced position taken by New York in sanitary matters is carefully watched by other states and the Medical Society of the State of New York is frequently asked by the profession within and without its borders for advice in regard to legislation which has been introduced or is about to be proposed. New York was the first state to place on the statute books a law which gave a definition of the practice of medicine, and despite many efforts it has never been successfully attacked. These efforts have been made in the courts and in the legislatures. Bills to change the present medical law are usually introduced quietly and late in the session.

Two such bills were introduced this year. The Torborg bill in Senate, Int. 1201, introduced March 11, and also introduced in the Assembly by Mr. Monahan, Introductory 1715, on March 13th. The intention was "to amend the public health law, relative to the practice of medicine." Two lines were to be stricken out of the present law, which would then permit so-called chiropractitioners and others to practise medicine.

In 1912 near the end of the session the Doctor J. H. Dye Medical Institute made an effort to be incorporated but failed. On April 3, 1913, Mr. Ramsperger put in a bill Introductory 1615. Its object was to incorporate the Doctor J. H. Dye Medical Institute and give it rights which the courts had denied to other institutions.

The usual antivivisection bills were presented

—Introductory 928, by Mr. Ward, in Assembly and the same bill by Mr. Boylan in the Senate, Introductory 683.

The Ward-Boylan bill was "An act to prevent cruelty by conferring upon the Board of Regents of the University of the State of New York the power of supervision of experiments on living animals."

The other bills by Mr. McKee in Assembly, Introductory 1823, and in Senate, by Mr. McClelland,* Introductory 153, were "to create a commission to investigate the present condition and extent of the practice of experimentation upon living animals, such commission to consist of five members to be appointed by the governor, two of whom shall be physicians or persons experienced in the practice of vivisection, two to be active members of some organization for the prevention of cruelty in animal experimentation, the remaining members to be appointed at large." These were all referred to the Committees on the Judiciary.†

Somewhat allied to antivivisection legislation was a bill endorsed by the same persons who opposed vivisection. It was introduced by Mr. Herrick in Senate, Introductory 1189, and entitled "An act to create a commission to investigate and report the present extent in this state of the practice of experimentation by inoculation or otherwise upon human beings in hospitals, public institutions and elsewhere, without their consent, and to report what laws are necessary to prevent unjustifiable interference with the rights of such persons by such process. This was a new departure in legislation, and entirely different from the antivaccination bills introduced in former years.

An unusual interest was manifested in the abuses of cocaine, and no less than five bills were introduced. To describe each would take too much space, but a brief review of the various stages of progress of the Walker bill in Assembly, Introductory 666, is interesting. As first introduced it was very objectionable to the profes-

* Defeated in Senate on April 24th.

† None of the other antivivisection bills were reported out of committee.

sion in that the amount of cocaine which the physician was allowed to have in his possession was too small and the various restrictions unnecessary. Exception was also taken to the clause enabling police and others to enter and search a doctor's office. Other objections were made to it by the profession, but those referred to were the most important. As the result of conferences with the profession the bill was amended (Pr. No. 1114) and again (Pr. No. 1680) and (Pr. No. 2388). As a result of these changes the most objectionable features were removed or modified.

Early in the year Governor Sulzer appointed a commission to investigate public health.† To put into effect the recommendations made by this commission, Dr. Seeley, a member of the Senate from the 43rd District, introduced into the Senate, on March 12 "An act to amend the public health law, generally," Introductory 1242. This was referred to the Committee on Public Health and at the hearing some of the provisions were objected to. The same bill was introduced in the Assembly by Mr. McDaniel, Introductory 1665. It was amended in many important particulars.

Section 1, paragraph 2, relating to Commissioner of Health in original bill stated, "Such commissioner shall be appointed by the governor, by and with the advice and consent of the Senate, and shall be a physician, a graduate of an incorporated medical college, of skill and experience in public health duties and sanitary science, or a person who is a recognized authority in public health work, etc., etc."

As amended it read: "Such commissioner shall be appointed by the governor, by and with the advice and consent of the Senate, and shall be a physician, a graduate of an incorporated medical college, of at least ten years' experience in the actual practice of his profession, and of skill and experience in public health duties and sanitary science, etc."

The original bill provided for a salary of \$10,000 and expenses actually and necessarily incurred. The amended bill reduced the salary to \$8,000 and his expenses, and added a Deputy Commissioner of Health at \$5,000 and expenses. Paragraph 4a in the original bill authorized the division of the state into twenty or more sanitary districts, and the appointment of a sanitary supervisor for each one, whose qualifications must be determined by the Public Health Council. The amended bill stated that such sanitary districts should be presided over by a sanitary supervisor, who should be a physician. The opposition to the appointment of a layman either as health officer or in charge of the sanitary districts was very great throughout the state.

It is to be understood that New York City is exempted from any of the provisions of the act.

Another measure of interest was "An act

to amend the judiciary law, in relation to examining physicians," printed in full on page 223, April JOURNAL. In Senate by Mr. Walters, Introductory 1311 and in Assembly by Mr. Daley, Introductory 1775. The aim was to prevent abuse in medical expert testimony. Various efforts have been made both in this and in other states for several years to secure such legislation and the present bill is supposed to be the best so far introduced.

The measure of probably the most interest to the profession was the "act to amend the public health law relative to medical licenses, Introductory 793, by Mr. Seeley in Senate, and Introductory 1057, by Mr. McDaniels in Assembly. It gave the Regents power to revoke a license, annul a registration, or suspend a practitioner for any length of time if guilty of unprofessional conduct, and gave various definitions of acts under headings a-g, which would render a physician liable to punishment. It created great opposition as originally introduced, and as result of protests, subdivision g, paragraph 9, Section 1 was stricken out (Pr. No. 869). It read as follows:

"Any other act which, in the judgment of the Board of Regents, is inimical to the good name and character of the medical profession or which in the judgment of said board tends to impair public confidence in the members of that profession."

The next amendment (Pr. No. 1752), changed paragraph "a" to read:

"Advertising either in his own name or in the name of another person, firm, association or corporation, in any newspaper, pamphlet or other printed paper or document, or writing letters or causing them to be written, or employing a capper, solicitor or drummer to secure patients, wherein or whereby the medical practitioner holds himself or herself out to cure diseases or defects of the sexual organs, or to cure chronic or incurable diseases, or for being employed by any person, firm, association or corporation so advertising or announcing."

The bill was again amended (Pr. No. 1987), and again (Pr. No. 2211), when section f was stricken out. It read as follows:

"Any other action not consonant with good morals, or anything done or said detrimental to the health or morals of others."

The Nurses' bill in Senate, Introductory 853, Mr. Seeley, was amended later in many important particulars. The question of tuberculosis occupied much thought and many bills relating to the various phases of the subject were introduced. Efforts to improve the quality of milk led to the introduction of several bills, an important one being in Assembly, Introductory 1888, by Mr. Carrol, in relation to medical supervision of persons engaged in the milk industries.

Next month there will be printed a list of the bills passed and enacted into law.

† See JOURNAL, March, 1913, page 171.

CERTAIN ELEMENTARY CONCEPTS IN EDUCATION APPLIED TO MED- ICINE.*

By J. GEORGE ADAMI, M.D., ScD., LL.D.,
F.R.S.,
MONTREAL.

WHEN your President honored me with an invitation to deliver the Annual Oration before your Society, and expressed the wish that I should take up an educational topic, I found on looking back that I had given expression to opinions upon divers aspects of general and medical education before various bodies—medical students, graduating nurses, educational experts, and even that distinctively Canadian institution, a "Canadian Club," but never before a general assembly of members of our profession such as this, never before the body which beyond all others is most vitally interested in the subject. I have arrived at very definite, not to say unorthodox conclusions, and now at the risk that some here present may have happened upon reports of those previous addresses—though I do not think that the chance is other than remote—and may recognize in what I say to-day very audible echoes of these previous pronouncements, it has struck me that it would be serviceable to put before you the opinions of an outsider upon modern educational methods in vogue in this country and more particularly in this state. It may be that as an outsider, of necessity not so intimately informed as are the inhabitants of the state, my impressions in regard to certain matters may be wholly wrong. I doubt, however, whether my knowledge of conditions be found very erroneous and that, because we in Canada are terrible copyists of Statesian fashions, we belong, after all, to the same race, and have before us the same difficulties. I trust, therefore, gentlemen, that you will not regard me as a Balaam and—to continue the parable—I trust that no one here present and so regarding me will turn balky. But, speaking seriously, it would pain me did any one think that I ill repaid your hospitality by criticising educational conditions in this country. I have been permitted to enter into the medical life of the states to such an extent, that I have been made to regard myself as one of yourselves.

I want in the first place to put before you sundry basal considerations regarding education in general, to apply them to medical education, and then more particularly to the requirements of the State of New York as determined by that august body the Regents. It is because that august body lays such stress upon preliminary education and fences admission to the study of our subject with a series of such cast-iron requirements that I have to make so elementary

a start. And as these requirements are based upon the primary and secondary school system of the State of New York, I have therefore the temerity to enquire into the value of that system. Wherefore, if you like so to consider it, of malice prepense, I may shock some of you. It is easy in these days of general well-being, to hold with Candide, that all's for the best in the best of all possible worlds: that the system of education which has been elaborated in this great country, the system under which most here present have been brought up, is the system best adapted to the genius of your people; that there is no nobler system than the public school system of the United States, and coming nearer home, that there is no more perfect system of preparation, education and examination in medicine than that devised and demanded in their wisdom by those grave and reverend seniors, the Regents of this state. Permit me, gentlemen, to give you to think.

To begin with, what is the main object of state-controlled education? Is it to ensure that every citizen is provided with a certain common or minimum stock of information upon various subjects, or is it, on the other hand, to ensure successive generations of citizens capable of serving the state? This last possibly may be a new thought to some here present, but on consideration I think you must agree with me that this, and not the benefit of the individual, is the primary object. However much it may matter to the individual to be an efficient scholar, it matters little or nothing to the state that a given proportion of its boys and girls know the Latin irregular verbs, or only so much as it affords evidence that these have gained the habit of application; it matters everything that during the labile years their characters be developed and brought out, that the state be provided with capable citizens. *Instruction*, the pumping in process, is of use only so far as it provides a basis of data for *education*, the drawing out of what is best in the individual. And I would bring two indictments against the public school teaching of the state, and doing this I indict equally the teaching of other states, and of the Canadian provinces including my own benighted province of Quebec, namely, that there is too much instruction, too little education, with the resultant danger of the production of a race that is thoughtless and characterless.

In the words of one who has done very much to raise the standard of medical education on this continent, who may indeed be regarded as to-day the leader in the movement: "Where you have a weak secondary school system, you cannot expect to improve the schools above it until you have made the secondary school all it ought to be." We university professors have presenting themselves before us what I suppose are the pick of the products of the public school

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

system. What do we find? It is a painful admission, but the majority, when they reach us, are fair poll-parrots; they can pump out what has been pumped in; but it is distinctly the minority, and let me say, a small one at that, who can utilize their frontal lobes and put two and two together. Now it is right that training should begin with respect for authority, that the pupil should begin with a respect for the written word, that he should look up to his pastors and masters and accept their statements as true and sufficient. The instilling of respect for authority is the first step in education. But this does not mean that the pupil is only to memorize and not to think; that by the time he is seventeen or eighteen he is still to be fearful of testing conclusions for himself; that he is not to be drawn to use his brain and make his own conclusions. And yet I am credibly informed that so essential a part of the present system have become the methods of the University of Cairo, that these extend to certain American colleges and universities, and in them it is forbidden to put examination questions which, for a correct answer, do not immediately refer to the *ipsissima verba* of the lecture and the recommended text book, but require some correlation of the data afforded in the course, some application of thought and not merely of memory. Now for us medical men, each case, as we know, possesses factors which make it a different problem from all that have gone before; each case to be correctly diagnosed and treated requires thought. I may be wrong, but it seems to me that the youth should be trained to think before reaching the medical school, that the system of examination is wrong which makes entrance to medicine depend purely upon knowledge of facts, which is based wholly upon the capacity for the recollection of unrelated statements, which does not by an essay, or still better, by an oral examination, test the intelligence as distinct from the memorizing power of the candidate. Naturally what appeals to examining boards as most appropriate is that system of examination which can be carried out most simply and most economically; and if a board, instead of employing expert and highly paid examiners, places the actual reading of examination papers in the hands of clerks who have no intimate knowledge of the subject of examination, but who automatically mark according to a schedule which is provided to them, it is evident, in the first place, that those questions only can be set which afford a stereotyped answer and call for no thoughtful weighing of *pros* and *cons*, no evidence of the power to balance evidence, and, in the second place, that a heavy penalty is by this method exacted against teachers who in their classes encourage anything beyond exact poll-parrot memorizing. If this be the case—and I sincerely hope that it is not even par-

tially true—there is likely to be opposition to the suggestion that there be appointed examiners who are truly examiners, experts in their respective subjects, men capable of judging qualitatively as well as quantitatively.

He who studies the Public Health Law of the State of New York as it refers to medical education and the regulations for the admission to medical practice, cannot but be impressed by the rigid rules laid down in regard to preliminary training. Thus according to Section 165, the candidate must submit evidence that prior to the beginning of his second year of medical education he has acquired that "general education required preliminary to receiving the Degree of Bachelor or Doctor of Medicine in (the) State." In other words, no university in the state can determine for itself whether a candidate is of proper standing, not for the state licence, but for its own degrees in medicine. That is determined for it by the Regents, and is dependent primarily upon the nature of the education the candidate has received prior to entering the medical school. If a student has graduated in arts in another state or country, such graduation is only accepted if from a registered college, and then on the conditions that "such college course shall have included not less than the minimum college requirements prescribed by the Regents for such admission to advanced study." If he possess a diploma or licence conferring full right to practise in some foreign country, that diploma or licence is not sufficient, he must also submit evidence that "he is a graduate in arts of a registered college in that other country, or that he has satisfactorily completed a full course in a registered academy or high school" (registered, that is, by the Regents); "or had a preliminary education accepted by the Regents as fully equivalent." Then there are regulations providing for the conditional matriculation of a student deficient in not more than one year's academic work of 15 counts of the preliminary education requirements, provided that the deficiency is filed at the Regents' office within three months after matriculation; provided, also, that on and after January 1st, 1913, such conditional matriculation shall not be permitted. At the present moment therefore, no student can enter medicine unless his preliminary training conforms with the requirements of the Regents to the uttermost jot and tittle.

The preliminary requirement determining admission to registered medical schools is the completion of an approved four year high school course or its equivalent. The official evidence of the fulfilment of this requirement may be secured in various ways:—(1) By certificate to this effect from an approved secondary school; by passing the Regents' examination in the schools; by presenting evidences of the successful completion of one full year's work in an

approved college or university, or of work in another state or country equivalent to this four year course in a New York secondary school; by presenting evidence from a registered school of theology, law, dentistry, pharmacy, or veterinary medicine of the completion of work equivalent to one or more year's work in an approved secondary school, together with sufficient additional credits to make the full equivalent of a four year course in an approved high school: or if by any one of these means the candidate is unable to enter, then he must pass the Regents' examination, but doing this must gain a rating of 75 per cent. in each of nine subjects, namely in English, algebra, plain geometry, two out of the three following subjects, chemistry, physics, and biology; one second year foreign language, ancient history with civics, and two or more (15 counts) of a long series of electives—English, ancient and modern languages, advanced mathematics, history, geography, economics, book-keeping, shorthand, drawing.

As to what constitutes an approved secondary course, the Regents are thoughtful enough to lay down a time table for each of the four years, giving the number of periods which they regard as essential in each subject, even down to manual training and vocal music. As I say, it is most thoughtful of them. For a medical school to be approved by the Regents, all matriculants must afford evidence of a general preliminary education equivalent to at least a four year high school course after eight years of preliminary education. Any medical school that matriculates a student who has not completely complied with the admission requirements must be forthwith excluded from the list of approved schools. "A medical degree from a registered institution does not meet with the educational requirements for admission to the licensing examination; evidence of preliminary education as well as evidences of required attendance at a registered medical school are essentials."

I have recited to you in detail all these bald regulations of the Regents that I may impress upon you what is evidently the main premiss of the Regents, namely that the requisite standard of medical education can only be attained by rigidly fixing the minimum preliminary training of the student; however distinguished has been his record as a medical student, unless that preliminary standard has been attained, it is hopeless for any one to seek to practise medicine in this state. If the matriculation examination of a university outside the State of New York does not in the opinion of the Regents exactly conform with that demanded by them, that university cannot be registered. If that university influenced by different ideas and different traditions has evolved a somewhat different matriculation standard and medical curriculum from those regarded as right and

fitting by the Regents of the State of New York, either it must humbly submit to the dictates of that august body, or must incur the penalty of seeing its graduates prevented in perpetuity from practising in the state, and that however thorough their medical education, however distinguished their Alma Mater, however excellent their degree; their preliminary education requirement was not such as to satisfy the fastidious tastes of the Regents.

Surely there is "something rotten in the State of"—New York and its educational system that this should be, that the Regents must thus force all the universities of this continent to bow to the graven image which they have erected. Of course, I know the basic reason for this conduct: that the education afforded in certain medical schools in the state has in the past been deplorable, that these schools have to be brought into line, that in the past every illiterate Tom, Dick and Harry could enter as a medical student, that this has to stop; that to prevent any backsliding on the part of these weak schools the regulations have to be of the sternest and there must not be even the appearance of making concessions to universities outside the state, however admirable the courses they provide and however great their reputation, lest, doing so, precedents and loopholes be afforded to these weaker brethren for evasion of the regulations, and opportunity for their alumni to creep or intrude or climb into the fold.

This it will be observed is an argument of expediency, not of right. The Regents will not pretend to say that theirs is the only correct ideal, that they do well in hampering other universities outside the state in their endeavors to evolve a sound course of medical education along lines which in important respects differ from the New York regulations, or do they? and is there a belief on this continent as indicated by their action, and to some extent, I think, by the first Carnegie report, that it is possible to plot out the whole working years of the would-be practitioner from the age of sixteen until his graduation—to construct an ideal time table, any departure from which is an intolerable step from grace. Such hidebound rules are, to say the least, unscientific and bound to fail. Education is a progressive science; while what is admirable in one community may be disastrous in another. Let me give you an example. The quality of the instruction in elementary science in the secondary schools is still a matter of debate. I think all will agree that those secondary schools can usefully afford instruction in the very elements of science, the student, for instance, should arrive at the medical college knowing of the existence of elements, and the nature of a chemical reaction. I have serious doubts whether save in the rarest cases, the teaching of the secondary schools is according to the right ideals of education in elementary

science. To quote my colleague, Dr. Ruttan, "You will never acquire a scientific training from a mere literary acquaintance with chemical facts and theories; in this way you will acquire only scientific information, an altogether different thing." Even if laboratory courses are afforded, the method of following an accredited text book, has practically no educational value. What is needed is that each experiment in the laboratory is made an exercise in rigid observation, and in the solving of problems, the answer to those problems being observed and recorded by the student, and not discovered from the text book or announced by the teacher. Obviously he will be in a better position to grasp the fundamentals of chemistry, physics, and biology in the laboratories of the medical school or university under university teachers than in the too often imperfect surroundings of the high school. In one hour under these more favorable conditions, the student should acquire more chemical and biological knowledge than in five spent in the high school. But the grave Regents with their vertebral ankylosis think otherwise; they demand the same number of periods wherever and whenever the instruction be gained. They penalize the medical school which seeks to afford the more thorough course.

Instinctively, when it is placed before you in all its baldness, you realize that there is something inherently defective in these regulations, and if I may place my finger upon the weak spot it is this: that the fundamental conception upon which the whole superstructure of the primary, secondary, and university training is sought to be built is false. The whole system you will observe is based upon "periods" and "counts," upon the *quantity* and not upon the *quality* of the teaching. The quality is secondary. No matter how excellent the training to which the applicant for a license has been subjected, if he cannot afford certificates that he has undergone so many periods, so many hours, of instruction, equivalent to eight years primary schooling and four years secondary, he cannot enter into the State of New York. The outward and visible sign of the inward and spiritual grace is not intelligence but "counts." The machine has become of higher value than its product.

Do you see, gentlemen, what this aspect of affairs signifies, not merely for our profession, but for the upbringing of all the inhabitants of the state? And here let me again emphasize that I am using the State of New York as a text, not as the one and only malefactor. This precise laying out of every hour in every public school throughout the state means intellectual perdition. It means, if logically followed out, that at the present hour in every secondary school throughout the state every boy and every girl who is in, say, the second class, is having identically the same facts doled out to them. It means that at the conclusion of the school course

every individual has one common set of ideas. If there be individuality among the scholars, the state has done nothing to foster, but on the contrary everything to discourage it. It means that we are drifting to a Chinese civilization, with official arrest of all initiative. This may be gloriously socialistic, but does not make for the progressive development of the people. Where all the members of a community have a common dead level of training, they manifest the same character, or, more accurately become manifestly characterless.

It means that with this emphasis upon the necessity of completing so many periods in each subject, teachers and taught are alike discouraged from effort and ambition. I believe that all who have inquired into the subject will absolutely uphold me when I lay down that a reasonably intelligent youth can easily master the subjects demanded in the four years secondary school course in three, some indeed declare in two years. But no, he must not do so; he must remain so many months in this class, so many in that—that he may complete the required number of periods; he must be kept back so that he does not advance beyond the others of his year; he must acquire habits of mental sloth. And this all because of this precious belief of the powers that be in the virtues of a pernicious system. The minimum of encouragement is given to the teacher to enter into the highest joy of teaching, that namely, of stimulating and pressing forward the promising scholar.

It means, also, gentlemen, the domination of the female teacher. Such precisely devised system is exactly suited to her inherent genius, it is wholly alien to the genius of the ordinary male. I do not here refer to those who evolved it; they are extraordinary.

Do not regard me as digressing, if as a *vox clamans in deserto*, I proclaim my opinion of the female teacher as an educator of male youth. Now that I am embarked upon a criticism of secondary education it is essential that I refer to this other weakness that is overwhelming the continent. Once again we revert to the main thesis that the pedagogues who have developed and are still developing our system appear to be absolutely blind as to the all-important distinction between instruction and education. Even so distinguished and well-meaning a body as the Carnegie Foundation in that report upon medical education to which I have already referred, was tarred with the same brush. In criticising and laying down what they regarded as the elements of a good medical education, not one word was said by the authors of that report regarding anything beyond the acquirement of a knowledge of medical facts and technique. It is tacitly assumed that this is everything. And yet you, gentlemen, who are in practice know perfectly well that in life such knowledge does

not count fifty per cent. It is the man within the medical shell that is all important. What Pierpont Morgan said but a few weeks before his death regarding business credit is equally true of professional reputation and success: it is character that counts, character that makes the man. What a man teaches is not half the game: how he teaches it counts, I would almost say, everything. Of greater value than mere facts is the attitude of the medical teacher towards life, his method of approach towards the patients, all those traits of manner, expressive of the inner being, which at the most receptive period of life appeal to the student, are imitated and become in turn a part of his being. Of prime value also is the university education outside the classroom, the laboratory, and the ward; so valuable is this that the medical school must be an integral and intimate part of a university of several faculties, in order that the student may mingle with men of other ideals, other habits of thought and modes of life. Your medical man to be of service to his kind must have an education in, and must know humanity. Unfortunately all these aspects of his training were completely ignored in that most important and otherwise most stimulating report.

But this education in the man's duty to his neighbor, this training in service to others, must begin in the secondary school, aye, in the primary school. Heaven save the youth who between the years of twelve and eighteen is in the hands of women, women only, as teachers, who is devoid of practical training in manliness. It is the right and proper thing that the early teaching of the little boy should be in the hands of women: it is well that there be a gradual transition from the mother's influence at home to the rougher world outside; but there comes the time when the boy begins to "feel his oats," when the budding youth fast becomes restive, when if the boy is to develop aright a masculine hand is needed at the reins. Of course, there are "sissies" and boys of phlegmatic temperament who remain eminently docile under feminine guidance; your boy with any vigor and initiative, the boy who is going to do something in the world, must be under a man. For otherwise he soon recognizes that he is too strong for his teacher, he sees that she is powerless to compel him, recognizes that owing to her physical weakness she has to appeal rather than to compel, that she has to gain her ends by oblique methods—by persuasion and not by command. He learns thus to get around difficulties without facing them manfully; does as he pleases heedless of others; becomes a selfish individualist. You may say that this is too strong a statement. I only know that a few months ago I was discussing this very matter with a remarkable woman, one whom I may without exaggeration describe as the foremost woman educationalist in Canada. "Yes," she said, "you are right.

Only last week a bright school teacher admitted to me that the one means she had discovered whereby she could manage hulking youths, was by indulging in a mild flirtation with them. The aboriginal woman's way, but, oh, God! the miserableness of it all! Is that how we want our boys brought up?

I feel in this relationship most heartily in sympathy with a colleague of mine—incidentally a Presbyterian minister—though I doubt if in that audience I would have had his noble temerity. It was a few weeks ago, at a meeting in support of our University Settlement, and my friend was called upon to address the assembly, a large one, composed almost entirely of the gentler sex, there being but three or four of us men present. "And don't get into your heads," said he, "that you are going to run this settlement, that you are going to reform these street urchins and potential hooligans by 'lev'—'Lev!' Bah! If you try that they will fool you every time. No! It must be by manly guidance and by manly methods, even including an unhesitating knock-down blow when need arises. It's the manly man they will look up to, and by whom they will most surely be influenced. They will not 'lev' him, they will worship him. I hold it to be the supreme argument for design in this universe that the boy is so constituted that the greatest number of nerve endings of the greatest number of nerves find themselves in that portion of his anatomy where knowledge can most neatly and effectually be instilled and that with absolutely no harm to the rest of the economy."

I freely admit—we all admit—that in those qualities which are the common property of both sexes, the woman is demonstrably man's superior; but in the matter of enforcing authority on the growing youth of the male denomination she is hopelessly and helplessly behind. To the present exaltation of feminine and lowering of masculine influence in the home and in the school I would ascribe both the growing increase in juvenile crime, and the appalling increase in domestic misery in this country. Boys and girls spoiled in the training, undisciplined; not to say encouraged to carry out their own wishes, become immoral individualists, cannot bear with patience the necessary give and take of married life, and the divorce court is the result.

Once again let me repeat that education is much more than the instilling of facts into the brain. It is the whole proper development of the individual. In the playground even more than within the school the masculine influence is needed, that the boy be instructed to play not for himself, his own advantage, and his own glory, but before all other considerations to act as one of a team, for the good of that team and for the honor of the school. How can the female teacher participate and direct the game of football, of hockey or baseball? How can she practically instil these lessons of obedience and willing

subordination of the individual for the common good which constitute the essence of all games worth the name, which constitute the essence of civic virtue and public spirit. It is not in her. Better an unlettered drill sergeant. The playground teaches civics better than any number of periods in class, and the master is needed to enthuse the right spirit. You know how things are going in this state: the situation is notorious. But it is as bad, and worse, elsewhere. Last year in the Protestant Normal School of our own Province of Quebec out of an entry of 150 prospective elementary teachers there were just three males.

But, it may be urged, what is the use of all this destructive criticism? Well, gentlemen, I freely admit that destructive criticism *per se* is worse than useless if there be nothing constructive afforded. I believe that these defects are one and all capable of a remedy. And, to begin at the beginning—and take the last first, I would urge that it is in the power of the state to obtain the male teachers so absolutely essential for the training of male youth. By all means let female teachers be given a proper wage, but surely the logic of stern facts must lead us all to realize that under present conditions there is little to attract men into the public school teaching profession, and must equally convince us that for the good of our youths, men have to be attracted; nay, must convince us that, if necessary, in order to attract them, greater inducements must be afforded to them than to their sisters. That profession to-day is a blind alley. No man with any initiative, with any self-respect will undertake the automatic duties laid down by the Regents and the educational departments of the states of this Union, with every hour's work scheduled, with its precise limitations to the scope of painful text books, with its painful lack of encouragement of higher effort. The cast-iron drudgery and servitude of it all, and its highest reward the very moderate income and status of the principal of a secondary school! Make the profession not a blind alley, but an open highway! The state has appointed for the taught a graded course from the primary school through the secondary to the university. Why not also for the teacher? I would suggest that, in the first place, promising youths be tempted to undertake teaching in the primary schools on the condition that two years thus spent in the service of the state shall entitle the teacher to one year's free tuition at the state university, that each subsequent year of teaching shall entitle him to a year's free university education. Nay, more, the state might well establish a residence at the state university where such state servants might board at a minimum cost. The young teacher should be free to choose his university course in such a way that he might undertake four or five years of state service as a means of putting himself through any one of

the faculties and entering any one of the professions. If, on the other hand, he determined to make teaching his vocation, then after gaining his degree in arts and, earlier or coincidentally, promotion from a primary to a secondary school appointment, it should be imperative that every few years, as in the army medical service, the teacher return to headquarters, in this case to the university, for advanced work along some special line, he becoming for the time being a junior member of the university staff. Every encouragement should be given to the good teacher to become an expert in some one or other department of learning, and it is but right and proper that he be given the hope and the opportunity to secure eventually a permanent university post in the subject to which he has specially devoted himself. He should be encouraged to realize that it is open to him to reach the top of the educational tree.

Next, as to the curriculum, and here my recommendations apply both to the schools and to the medical course. I would here repeat what I said two years ago at Chicago, that the finest national education known to me—no longer, alas, in existence, for the growing wave of state socialism has changed everything—was that established in Scotland by the dour but powerful reformer, John Knox. There were in it no school-marms, but every village, or more accurately every parish, had its school house and its dominie, wherever possible a university graduate, even if only a "stickit minister." There were in it no state-regulated schedules of hours, but the dominie was expected to bring all his scholars up to a sound familiarity with the "three R's" and was stimulated to advance the more promising pupils up to university standing. To matriculate it was necessary that those scholars had a wide teaching, but beyond this the dominie gained his great triumph by securing for those scholars university prizes and bursaries. If the master was a classical scholar, then the school excelled in classics, if a mathematician, in mathematics, if a Hebraist then even in Hebrew. Each school, thus, was distinctive, and the result was not a tame level of commonplace knowledge, but the production of scholars of varied attainments and, what is more, of character. For its size no country in the world has during the last two centuries turned out more men of distinction in the varied walks of life, more men of character, more leaders in the different departments of human endeavor than has Scotland, and this I am convinced is thanks to John Knox and his dominies. Demand, I would say, that every entrant to the university have a competent knowledge of a definite schedule of subjects, nay I would say, demand a higher standard than that at present in vogue, but do away with this deadening system of compulsory periods. Encourage the rapid promotion of the intelligent boy: encourage him to rise rapidly through the second-

ary school: give him the time to spend two years in the arts department of a university. For otherwise, if we carry out the programme as at present recommended, namely, eight years primary school, four years secondary school, two years in arts, four years in the medical school, a year, or better, two years in hospital—the man by the time he enters practice has become so steeped in academic methods that he has lost all the elasticity of youth, is incapable of adaptation to the wear and tear of practical life; brilliant and accomplished as he may be as a student, he owes to something in himself beyond his training if he is not a failure as a general practitioner.

It is a matter well worthy of debate, whether in place of a matriculation examination on the part of the universities, there should not be a "leaving" or "Abiturient" school examination controlled by the state, an examination which youths should be invited to undertake, not when they reach a particular age, or when they have accomplished a given number of periods, but when they have gained the requisite knowledge. Such an examination would afford a standard test of the teaching afforded by the secondary schools throughout the state, a standard to which they should raise themselves, and certainly as I have already noted, it should include some test of the candidate's intelligence as distinct from his memorizing ability. Let me sum up here as regards school and university training, that it is contrary to common sense to appraise the tree by the amount of manure with which its roots have been dressed and the number of times it has been watered: it is rather more usual as it is more sane, to estimate its value by the crop it produces. "By their fruits shall ye know them." Indeed I believe that those of you who are arboriculturists will confirm the statement that too rich a soil, too abundant manure and excessive irrigation, instead of giving a good crop, have the opposite effect. Would that the Regents of the state took this to their hearts.

And so with the test of the fitness of the university graduate to practise. It is absolutely false to imagine that by a cast-iron curriculum and a written examination, and that alone, it is possible to assure and determine the quality of a candidate. What do we see as the result of this policy? Why this, that the products of night schools and other wretched so-called institutions of learning are admitted into the profession as readily as are the alumni of the highest and best schools on this continent—men whose preliminary scientific training has been a farce, who have learned their anatomy not from dissection, but from quiz compends, who have not been within the wards of a hospital, but at the very most have seen patients from the seats of an

amphitheatre, men who to save their souls could not percuss a heart or recognize normal breath sounds through a stethoscope. You know, we all know, gentlemen, that these written state examinations, with papers set and passed upon by those who are not experts, with no adequate oral and practical examinations are wholly rotten. I have used this word before, I do not hesitate to use it again. I know that the Regents are seeking to remedy this state of affairs, but they have not gone far enough. But how is this to be corrected?

Well, gentlemen, I am going to make a bold recommendation but I am convinced that the time is ripe for it. This matter of medical education is no longer a state matter: it is one of interstate concern. If a man of this state wishes to pursue his medical studies in one of the great universities outside the state, why penalize him in order to bring the weaker schools of this state up to a higher standard? If a man from another state seeks to increase the population of this, why be so mediæval, so chauvinistic as to erect unworthy barriers against his entrance? We are apt to run down the Old Country as unprogressive, but after more than twenty years upon this continent I am slowly coming to believe that there is an extraordinary amount of hard, common sense in many of its methods. These methods may not have been arrived at by pure logic, but by compromise. Nevertheless they fit the case. It has not attained to the one portal system: we are just about to try that in Canada as an optional method, and now that we are endeavoring to put it into execution we realize its difficulties. It is at the least an interesting experiment. But there has been established for now many years a General Medical Council for the United Kingdom. That council registers all duly qualified medical men. And here is the significant fact: that council conducts no examinations. What it does is this: from time to time it sends to the various schools a small and select committee of two or three experts, men high in our profession. That committee reports upon the quality of the instruction provided at those schools: it is present at the examinations and reports upon their scope and efficiency, and according to the report given, so does the council as a body approve of the school, in which case its diploma is accepted as qualifying for registration, or disapprove of the school, in which case specific reasons are given, and the representatives of the school are afforded the opportunity to present their side of the case. Finally if the recommendations of the committee are supported by the council as a body, either the school has to modify its procedure forthwith

in agreement with those recommendations, or it has to cease to exist. Certain common regulations are laid down as to length of curriculum, essential subjects for preliminary and professional training and so on, to which all schools must subscribe, but the final approval rests not upon quantity but upon quality of the education and examination afforded.

The time, it seems to me, is ripe for a similar procedure here in the United States, for the appointment of a Federal Medical Council, subsidized by the government at Washington, and formed of representatives from all the states, a council which should appoint well-known leaders of the profession to act as committees or assessors to visit, report upon and make recommendations regarding the efficiency and deficiencies of the individual medical schools of this continent, the expenses of such inquisitions to be met by the schools visited. The Carnegie Foundation has prepared the way, but we need now, not a private but a national institution, an institution authorized not by the profession alone, by the American Medical Association, for example, but by the nation at large, which shall act authoritatively in these matters. Let each state, I would urge, continue to control and direct its own educational methods. We do not want, we must fight against, any dead level of sameness in procedure and output. Let the Federal assessors test the results, making sure that they reach the desired standard of quality. If this be asking too much at the present moment, at least the state might take action, might appoint committees of inquisition to inquire and report upon the quality of the instruction afforded and the examinations of the schools within its boundaries, and might accept the graduates of those schools without the present farce of an examination which does not educe the capacity of the examinee.

I shall be satisfied, gentlemen, if I have impressed upon you that education is something beyond mere instruction: that we are every whit as much interested in the quality of the secondary school educations as in medical education proper: that both in secondary and medical education there must be more elasticity, more freedom allowed for the individual school to control its own development: that sameness means not perfection but intellectual death. I shall be satisfied indeed if I make you think over these matters. I have said, and am content even if after me comes the deluge.

THE PREVENTION AND CURE OF CANCER.*

A PUBLIC ADDRESS.

By PARKER SYMS, M.D.,

NEW YORK CITY.

BY cancer is meant a tumor or new growth which is made up of epithelial cells and which is malignant in its character. By malignant we mean that it has a tendency to grow continuously until it has destroyed life; also that it has a tendency to recur or redevelop when operated upon, and also that it has a tendency to become disseminated and thus to develop in other parts of the body. There are several forms of malignant tumors. In this address I shall confine myself entirely to a consideration of cancer in its various types and shall not speak of sarcoma, of which there are several varieties.

Cancer is such a terrible enemy to mankind that it is very fitting that we should devote our energies and thoughts to it as a problem, striving in every way to lessen its ravages. It is high time that the medical profession should have an awakening. This awakening should be very wide, for it behooves us to be very wide awake. And it is high time that the public should be aroused by the spreading of as much knowledge as can be helpful and not harmful. The only way in which we can combat cancer with our present limited knowledge is by an intelligent co-operation between the patient and the doctor, between the public and the medical profession. To this end it is of equal importance that there should be a further dissemination of knowledge, not only among the lay public but also throughout the medical profession at large.

The fact that the treatment of cancer has largely resulted in failure is often spoken of as a reproach to the medical profession. This is not the thing with which we should reproach ourselves if we are doing our best. But we have not been doing our best and certainly that is a great cause for reproach.

There has been a tremendous amount of research work by certain members of the medical profession. Most elaborate investigation, both in the form of study and in the form of experimentation, has been carried on. One could hardly conceive of the vast amount of untiring work that has been done in this field. It is not with lack of such work and effort that the medical profession is to be charged. What we must remedy is a lack of standardization among ourselves, a lack in the average. There has been a lack of appreciation and comprehension of facts that have been fully demonstrated. The medical profession as a whole has not been employing in the practice of medicine important facts which have been demonstrated by the science of medicine.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

It does not do for a few doctors to know these open secrets. They must be the common property of all the members of the medical profession, for they must be used in every day practice, and many of them must be known to the public as well. In this way only can we improve the results in our combat with this deadly enemy cancer. It is necessary that we should use all of our knowledge all of the time. It does not do to use part of it part of the time, and that is what we have been doing in the past.

The title of this address, "The Prevention and Cure of Cancer," is certainly an ambitious one, for we cannot prevent, nor can we cure all cancer. But it is not a presumptuous title, nor a preposterous theme, for we can prevent and we can cure a great deal of cancer. And by properly applying certain facts which we have at our command we can improve our results so that those obtained at present may be looked back upon as a sad instance of shortcoming and lack of common sense.

You are all familiar with the fight which has been made against tuberculosis. To my mind the real value of the modern attack on that deadly foe dates from the time when laymen entered the field. A tremendous impetus was imparted and a tremendous amount of good resulted from a brochure written, not by a doctor but by a layman. I refer to the article entitled, "Consumption: The Great White Plague," written by Mr. Eugene Wood. At the time of its publication this article was widely disseminated and created a great deal of interest not only among the laity but also among medical men, and I believe that it and similar efforts have done much to arouse the medical profession and the public to the fight which has been so nobly carried on. By such writings we were taught to set aside many of our faulty methods of approaching the subject of tuberculosis. We were taught from the standpoint of the patient. We were taught for the first time that frankness and truthfulness could be employed in dealing with these unfortunate sufferers. This truthfulness became possible and proper because we could look upon tuberculosis with hopefulness and not with despair. When you can give a man a word of hope there is no reason why you should not tell him the truth.

Among the important facts which were brought out and dwelt upon with emphasis were: 1. Tuberculosis is communicable, 2. Tuberculosis is preventable, 3. Tuberculosis is curable. By neglect of these three facts and by ignoring these three facts how impossible would be the fight against tuberculosis. Think what has been accomplished since we have had the hardihood to tell a patient that he has tuberculosis; to tell him that by lack of proper care he may transmit the disease to those around him; and to tell him that by careful application of the laws of health he may recover.

There is another phase of the tuberculous

campaign which must be taken advantage of in our fight against cancer; this is the fact that when we give certain knowledge to the public, the public gives it back to the medical profession, in those parts of our ranks where it is most needed. I have seen a physician treating his wife who had pneumonia in a room with the window shut. He would not dare treat a woman in a tenement house that way. The tenement house population has been very thoroughly instructed as to the necessity of fresh air. The doctor's wife will learn this when she takes up settlement work and the doctor may learn it from his wife.

The medical profession has learned more about the treatment of tuberculosis since Mr. Wood and other laymen took up the subject than it learned in all the ages prior to that time. I do not mean that these gentlemen have discovered any facts that were not known to the science of medicine, but they have discovered—in the sense of uncovered—some most important facts which were not being employed generally in the practice of medicine.

The scientific investigation of cancer has been going on for many, many years, but so far this disease has withheld many secrets from us. In a scientific way we do not know much more about cancer to-day than we knew fifty years ago. We do not even know its real nature, we do not know its actual cause, we do not know whether it is produced by a bacterium or not. Most of the things which the scientific study of cancer has taught us have been of a negative nature. We have come to the conclusion:

That there is little, if any, reason to consider cancer as being hereditary.

That there is no evidence that cancer as occurring in man is a communicable disease.

That cancer does not produce an immunity as do some diseases.

Scientists have been able to transplant cancers from one animal to another, notably among mice, but these transplantations are not inoculations (as in the case of tuberculosis, for instance). By transplanting these cancers in successive generation of mice, we do not produce a family of mice immune to such transplantations; nor do we produce mice immune to spontaneous development of cancer; also we cannot transplant cancers from one animal to another of a distinctly different species, *e. g.*, we cannot transplant cancer from mice to guinea pigs, etc., but there have been successful transplantations among species which are nearly akin, as from dog to fox, from rabbit to hare.

The scientific study of cancer has shown us no new cure. Most of the knowledge we have concerning cancer has been gained by clinical observation.

It would not be profitable to expend too much time nor to dwell too long in contemplating or enumerating things we do not know; let us turn our thoughts to things we do know about cancer.

Cancer is not a growth of any extraneous substance or tissue within the body. It consists in a growth of cells which are perfectly natural to the body. These cells are either displaced or misplaced as to their situation and they are abnormal in their arrangement and relationship, one to the other, but there is nothing abnormal that we can identify as a cancer cell.

We believe that cancer is very much on the increase for some reason or other and we do not know what this reason is.

We know that cancer is at first a purely localized disease. We know that cancer has a tendency to spread by a natural growth and to develop in and through the lymphatic channels in its neighborhood, and through them to become disseminated throughout the body.

We know that complete removal of a cancer at the time when it is strictly localized and not disseminated will result in cure of that cancer.

We know that incomplete removal of a cancer with its outlying roots will not result in cure, but will result in continuance, either at the original site or in some more or less remote part of the body.

We know that in its early stages cancer is localized, in its later stages it is more or less widespread. We know that with complete removal during the early stages or during its localized condition, cancer is curable.

While we do not know the actual cause of cancer, we do know something of the causation of cancer, for we know that cancer often does result from prolonged irritation, and we know that there are certain conditions which precede or which predispose to the development of cancer. These are known as the precancerous states, or precancerous stages. This is the most important knowledge we have concerning cancer, for by carefully acting upon such knowledge we can prevent, not cure but prevent, a very large proportion of cancer.

We know that there is no specific cure for cancer, there is no serum and there is no vaccine, and there is no chemical which will act as such.

But we know that a properly executed surgical operation performed at the time when the cancer is still localized will result in cure in a large proportion of cases. And we know that today this is the only reliable method of cure at our command. And we know that by remedying or removing abnormal conditions we can prevent a large amount of cancer. In the recognition and in the employment of these two established facts lie our hope.

There is a chance for early cure; there is a chance for prevention of this dreadful disease.

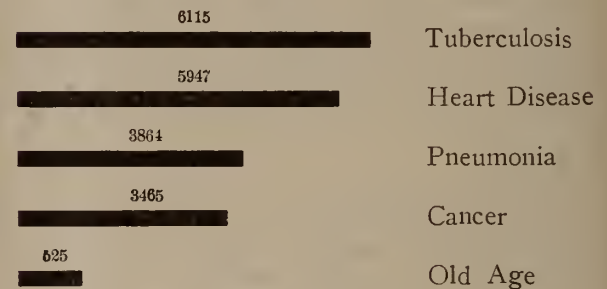
Let us pursue our consideration of this subject under several heads.

Let us first consider the prevalence of cancer as compared with several other diseases. Then let us touch upon the diagnosis of cancer in certain situations of the body. Then let us consider

briefly the relative curability of cancer of certain organs. Let us give most of our thoughts, however to the recognition and to the cure of the predisposing causes of cancer, namely, to the precancerous states, and then let us touch briefly upon what has been done for the practical solving of the cancer problem and what further may be done in the way of a successful anti-cancer campaign.

DIAGRAM SHOWING RELATIVE IMPORTANCE OF
CANCER AS A CAUSE OF DEATHS IN NEW
YORK CITY DURING 1911.

(Between the ages of 30 to 75 years.)



I shall not enter into an elaborate discussion of statistics concerning the prevalence of cancer, but I wish to strongly emphasize the fact that cancer is a very prevalent disease, and that it reaps an enormous harvest of victims every year. Nearly every one who writes upon this subject is agreed that cancer is greatly on the increase. Some claim that cancer is not on the increase, but that it appears to be so because our more recent statistics are based upon a more accurate knowledge and upon a more accurate means of making diagnosis and that therefore we are charging to cancer today numbers of deaths which would have been charged to some other cause during the years when less accuracy was employed. I have made a careful study of many statistical tables and I must say that my mind is in doubt as to whether cancer is really on the increase or not. There is one thing certain, it is not on the decrease, and we have enough of it to make us recognize it as one of the most terrible of scourges. Unfortunately our national and state statistics are of very little value today; we need a national department of health. And we must welcome the time when we have such a department and when we can have thoroughly reliable and intelligent statistics. The analytical study of such statistics is of great value and forms a very important basis for an intelligent comprehension for such a question as to the cancer problem.

I shall set forth simply a few facts which may be gathered from such statistics which we have at hand. Cancer is not a disease of youth; it is exceptional before the twentieth year; it is rare between the twentieth and the thirtieth year. There is a definitely recognized cancerous period

of life, namely from the thirtieth to the seventy-fifth year, the largest number of cases occurring between the forty-fifth and the sixty-fifth years.

TABLE OF DEATHS TAKEN FROM THE VITAL STATISTICS OF THE DEPARTMENT OF HEALTH, NEW YORK CITY.

Deaths between the ages of 30 to 75 years—
1910:

Total number of deaths, men and women, 37,018				
Deaths from cancer:				
Women	1,940	5%	} 9%	3,266
Men	1,326	4%		
Deaths from tuberculous diseases 16% 5,980				

Deaths between the ages of 30 to 75 years—
1911:

Total number of deaths, men and women, 37,925				
Deaths from cancer:				
Women	2,034	5%	} 5%	3,465
Men	1,431	4%		
Deaths from:				
Tuberculosis diseases	17%	6,115		
Pneumonia	10%	3,864		
Heart diseases	16%	5,947		
Old age	1%	525		

Deaths from cancer according to location, between the ages of 30 to 75 years, men and women:

Cancer of:	1910	1911
Mouth	123	114
Stomach, liver	1,314	1,419
Intestines, rectum	529	479
Female genital organs	509	523
Breast	324	339
Skin	46	38
Other organs, and unspecified.	448	553
	37,018	37,925

Cancer is more common among women than among men, because the larger proportion of cancer in women are found in the female organs, that is to say the female genital organs, including the breast. Excluding these (cancers of the genital organs and breast); cancer is more common among men than among women. Cancers of the mouth and of the stomach are more common among men than among women. This is thought to be because men are more addicted to the use of strong drink than are women, and the idea is also based on the assumption that men are more addicted to the habit of smoking than are women—as yet.

Cancers of the bile ducts are more common among women than among men, just as gall-stones are more common among women than among men. The relative proportion of the two conditions is very suggestive and instructive, and will be dwelt upon when we come to consider the prevention of cancer. There are remarkably few

instances of cancer as an occupational disease, and yet chronic irritation is recognized as a very potent factor in the production of cancer. However, there is the well-known chimney sweeps' cancer, the cancer caused by X-rays, the cancer caused by prolonged exposure to the sun, and in this connection we might include the kankri cancer of Thibet.

If chewing betel-nuts could be considered as one of the industries of India, we might cite cancer produced by that habit as an occupational disorder.

Unfortunately the use of chewing-gum does not produce a rapidly fatal form of malignant disease.

During the cancer period it has been estimated that in England cancer causes the death of one woman in eight and of one man in eleven. In this country cancer ranks next to pneumonia and tuberculosis as a cause among the total number of deaths. The statistics of the Department of Health of New York City for 1911 show the following facts:

- After the thirtieth year:
- Cancer causes 9% of deaths.
- Tuberculosis causes 17% of deaths.
- Pneumonia causes 10% of deaths.
- Heart disease causes 16% of deaths.
- Old age causes 1% of deaths.

It has been estimated that there are between seventy-five and eighty thousand deaths from cancer recorded every year in the United States.

There are many more deaths from cancer than are recorded. This is due to faulty diagnosis or inaccurate diagnosis, to neglect to include cancer when some other disease is also present, and to many other reasons unnecessary to dwell upon.

Now we come to the question of diagnosis of cancer. To make a late diagnosis of cancer is of no value whatever, except for the purpose of filling and of making up death lists. What we shall consider and what we should concern ourselves with is the question of early diagnosis. In this connection cancers are to be divided into two groups, namely the superficial, external or visible, and the deep-seated, or internal cancers.

Cancer always presents itself as a tumor or swelling, and when superficially situated it can, of course, be recognized by the two senses, sight and touch. There are some cancers of the skin, notably those of the face and lip, which are very slow in their growth and which consequently do not change rapidly, though they may reach a period later on in their history when a rapid growth takes place. Superficial cancers are to be differentiated from inflammatory swellings, from deformities presenting the appearance of swellings, and from benign tumors. In an address of this character it would not be well nor profitable to attempt to give rules for diagnosis or differentiation. It is enough that we should call attention to the fact that any swelling may

or may not be a cancer, and that it is of the utmost importance that a proper diagnosis be made at the earliest possible moment, for our only hope of curing cancer lies in an early, radical operation. In this connection the public should have definite but limited knowledge. Laymen and lay women should not diagnosticate their own cases any more than they should treat their own cases, but they should know enough about this subject to insist upon having a thoroughly satisfactory diagnosis from their doctors. As far as superficial cancer is concerned there is no excuse for doubt or error. If the doctor is not satisfied to take the responsibility of his diagnosis he should submit a section of the tumor to a competent pathologist for examination under the microscope.

Now as to the diagnosis of the deep seated or internal cancers: In this class of cases we have a very different problem to deal with. During the early stages when diagnosis would be of importance and of use in bringing about a cure, a tumor can seldom be detected. The only indication that we may have of an internal or deep seated cancer may be some disturbance of the function of the organ involved or of some associated organ. Thus any kind of a disturbance of function should lead us to think of the possibility of a new growth, and should lead us to make a most thorough investigation, otherwise, we shall never suspect nor detect internal cancers during the stage when our treatment can be of any avail. Loss of appetite may be the only sign present to indicate an incipient cancer of the stomach. A newly acquired tendency to constipation may be the only symptom of a cancer beginning in the large intestine. Chronic jaundice should always make us suspicious. Loss of weight and loss of vigor not to be accounted by fever or other apparent cause, should always make us apprehensive. Of course, cachexia and great emaciation are late signs and do not concern us unless we are so constituted as to take a lively interest in terminal stages, and unless we are willing to limit our efforts in our patient's behalf to the furnishing of some such terminal facilities as the administration of opium.

Pain.—Much valuable time has been lost because of the stress physicians and patients have placed upon the value of pain as a diagnostic sign of cancer. Pain is usually present late. It is present as a rule during the late development of cancerous growths. Pain is not a characteristic sign of the early stage of cancer. It occurs early as an exception, not as a rule. It is most important that this fallacy should be dispelled.

This is all that is necessary to be said on the subject of diagnosis until we come to the consideration of special conditions.

There is one thing that cannot be impressed too emphatically, and that is the necessity

of early diagnosis. If there is any doubt as to whether a patient is or is not developing a cancer in its early stages, the patient should be given the benefit of that doubt. All suspicious tumors, no matter where situated, should be regarded as malignant until they have been proven to be innocent or non-malignant.

Take, for instance, a lump or tumor of the breast. Nine-tenths of tumors of the breast are malignant, or become so. An unknown proportion of cases of chronic inflammation of the breast become cancers and any simple or benign tumor of the breast may become cancerous. Unless it be an acute abscess of the breast, every swelling or irregularity of that organ should be regarded with suspicion and should be treated as suspicious.

Now we come to the important question, the curability of cancer. While we do know that cancer is a very fatal disease, we also know that by proper means cancer is curable in a proportion of cases. We also know that certain forms or varieties of cancer are much more easily cured than are others, that is to say that the same means being employed there will be a much larger percentage of cures among one variety of cancer cases than among another variety. This is notably true of such superficial cancers as epitheliomata of the skin, particularly of the face. It is also true that cancer in certain situations of the body varies in this particular. Thus operation of cancer of the colon and of the small intestine yields very good results, while cancer of the lower rectum cannot be so successfully treated. Of course, this is very largely determined by the possibilities of early diagnosis, early diagnosis of cancer being much more easy in one situation than in another. And again this is owing to the fact that a cancer in one situation will produce symptoms much earlier than would the same kind of growth in another region. Wherever the situation and whatever the character of the cancer may be, the proportion to cures will be in direct relation to the period at which diagnosis and treatment have been applied.

Cancer is always a localized disease at first. Operation during the stage of localized growth would mean complete removal of the entire growth and would mean cure in a very large percentage of cases. For instance, in breast cases early operation while the growth is strictly localized will result in 80 per cent. of cures. Later operation with extension but with no axillary involvement may result in 50 per cent. of cures. Still later operation with limited axillary involvement may result in 25 per cent. of cures. Late operation with marked axillary involvement will result in no per cent. of cures.

Progression and dissemination are bound to occur, in fact a cancer growth is progressive from the beginning. After a cancer has made much progress in its growth or has become

disseminated, from the original focus, complete removal may not be possible; if not, cure will not result.

We now come to the most important part of this address, in fact it is the most important part of all the knowledge we have on the subject of cancer, and that is our recognition of the fact that there are certain conditions and certain diseases which predispose to the formation of cancer. Some of these are so definitely connected with the development of cancer that they are today recognized as and are designated precancerous conditions, or precancerous states.

In 1911, before this Society, I had the honor of reading a paper entitled, "The Precancerous Stage," in which was set forth the proposition that by studying our cases carefully and by recognizing the fact that certain conditions predispose to cancer, we would be making a great advance in our fight against this deadly foe, for by curing, or removing, these precancerous stages we would be preventing a large proportion of cancer. As far as this is true we see that cancer is a preventable disease.

This is an age of progress, and there should be added to the medical professions a new adage in place of an old one. The old one was "what can't be cured must be endured." The new one is "What can't be cured must be prevented." Let us now turn our thoughts towards the prevention of cancer.

If cancer is preventable, how can we prevent it? Certainly this can be accomplished only by recognizing the cause of cancer and by doing away with this cause, whatever it may be. Now as already has been stated, we do not know the real nature of cancer, nor do we know its real cause, but we do know that there are certain conditions which predispose to or determine the development of cancer in a large proportion of cases. Prominent among these conditions are benign tumors, chronic ulceration, chronic inflammation, abnormal tissue such as scars, and prolonged irritation.

BENIGN TUMORS AS A CAUSE OF CANCER.

It has long been a recognized fact that the majority of benign tumors may sooner or later be invaded by cancer or may undergo cancerous degeneration. This is notably true of most of the various forms of tumors of the breast.

Nearly every variety of benign tumor may be found in the female breast. The fibro-adenomata are by far the more frequent and therefore the most important in this connection. These benign tumors may exist as innocent growths for years, and certain of them may continue indefinitely as such, but in the life history of any one of these, carcinomatous infiltration may take place, and then we shall be dealing with a cancer pure and simple.

The lesson to be learned from this is, that every benign tumor of the breast should be re-

moved before it has an opportunity to become carcinomatous. In other words, it should be removed as soon as it is recognized. The time has passed when a doctor, in ignorance, may advise his patient that a tumor of the breast is of no significance unless it shows active signs of malignancy. If we recognize the benign growth as a potential cancer we know at once how to deal with it, and that is, to deal with it at once. In this way we are not only able to insure a patient of definite and permanent cure, but also we may bring this about by means of a small operation involving little shock and the least possible mutilation.

What is true of benign tumors of the breast is true of such tumors in other parts of the body.

Pigmented Moles.—Keen, Bloodgood, and, of course, many others have shown how more than prone these growths are to become cancerous. One of the most instructive lessons can be learned by a careful review of Bloodgood's work in this connection. He made an elaborate study of 65 cases of malignant pigmented moles operated upon. In every case the diagnosis was confirmed by microscopic examination. Up to the time of his report there was not a definitely cured case among them. He calls attention to the fact that in every one of his cases the tumor had existed as a benign growth for many years before it became cancerous. Think what this means! It means that 65 cases (the total of a series) became incurable cancers and that each and every one of these sad cases could have been prevented had operation been performed at the ideal time—that is to say, during the precancerous stage. In the same report he cites 76 cases of benign pigmented moles which were removed in the precancerous stage, and he states that there have been no local recurrences and no deaths from internal metastases.

There has been extensive investigation of this subject in connection with hypertrophy of the prostate. Of course, senile hypertrophy of the prostate is purely an inflammatory process, or the result of one. Hugh Young demonstrated an immense proportion of carcinoma among his cases of enlarged prostate. And this fact shows how this chronic inflammatory condition may be the precursor or precancerous stage of the cancer. In his address before the Section on Surgery of the American Medical Association in 1910, Charles Mayo called attention to this fact and cited it as one of the reasons for removing an abnormally enlarged prostate gland.

GASTRIC ULCER, GALLSTONES, ETC., AS PRECANCEROUS STATES.

Today we have very accurate knowledge of the lesions of the stomach as compared with what we knew a few years ago. We have the records of vast numbers of cases where the disease has been acutally seen and demonstrated by skilled and able pathologists. A few years ago

we had to depend on theories and surmises, based on imagination, unaided by sight and demonstration.

While it would be impossible to estimate what proportion of cases of ulcer of the stomach result in cancer, it has been possible to estimate what proportion of cases of cancer of the stomach were preceded by gastric ulcers, either healed or unhealed. In the immense clinic of the Mayos it has been shown that between 60 and 70 per cent. of cancers of the stomach have developed in the site of a pre-existing gastric ulcer, or in the cicatrix of an ulcer which had been healed. In other words, it is evident that we must consider gastric ulcer as the precancerous stage of more than two-thirds of the gastric cancers.

The lesson that we must learn from this is two-fold—first, that gastric ulcer must be cured; second, that when we operate for gastric ulcer we must remove the ulcer-bearing area. If these statistics and these statements taken from the Mayo records are accepted, certainly gastroenterostomy is not the logical and rational procedure. It may cure the ulcer but it does not remove the cicatrix of the healed ulceration; in other words, it does not remove what has been pointed out as a conspicuous forerunner of cancer.

Now a word as to the importance of curing gastric ulcers. The day has come when we should insist on cure of all curable gastric ulcers and allied diseases. The day has passed when we should consider chronic indigestion as a man's normal estate. And when we consider the fact that chronic gastric ulcer has been the predecessor of two-thirds of the stomach cancers, we undertake a fearful responsibility in these cases unless we insist upon doing the best that can be done—cure the ulcer—prevent the cancer.

Gallstones.—Let me cite an illustrative case. Unfortunately it is an example of a very common occurrence. A patient was referred to a surgeon for an operation on account of an obstructive jaundice. It was evident to the surgeon that the patient probably had a carcinoma. And it was with that understanding that he performed an exploratory laparotomy. The reasons for this diagnosis of probable cancer were: continuous jaundice, progressive emaciation and loss of strength and absence of febrile disturbance. There were also present vomiting, and other gastric symptoms which indicated obstruction at the pyloric outlet. On opening the abdomen it was found that the patient had a carcinoma, involving the gall bladder, the greater omentum, the transverse colon, the lower end of the stomach, and in fact all the organs in that region.

The patient gave a clear, distinct and classic history of gallstone disease, lasting over a period of more than eight years. Of course, the carcinoma did not last that long. From her

history it was evident that it was of comparatively recent origin.

The above case is only one of innumerable instances which can be cited. It clearly depicts a case of cancer which had a very distinct precancerous stage, and there is little doubt that an operation performed years ago curing this patient of gallstones would have prevented the development of cancer.

That gallstones cause cancer there can be little doubt. In practically 100 per cent. of cases of primary cancer of the gall bladder and bile ducts, gallstones may be found and it may be demonstrated that they have existed for a long period before a cancer developed. It has been asserted that these cancers never develop except when preceded by gallstones.

It may be assumed that no case of gallstone disease recovers spontaneously. Of course, a large proportion of gallstone cases may exist for years without showing violent or active symptoms. The fact that cancer results from long irritation of gallstones should demand an operation in every case, unless the patient's condition is such as to outweigh the reasons for operation. There are many other reasons why gallstones should not be left unoperated upon. Gallstones are never a benefit to the patient, they are always a source of harm. It is not necessary to discuss this point more fully in this connection. For our present purpose this one fact is sufficient—gallstones are invariably precursors or forerunners of biliary cancers and for that reason if for no other we should operate and cure all cases of gallstone.

CHRONIC IRRITATION AS A CAUSE OF CANCER.

In the mountains of Thibet the natives are in the habit of carrying a small stove like a pocket stove, in one part of their tunics. This stove is called the kankri. The prolonged use of this kankri stove is followed by cancer at the site which is irritated by the heat. A very familiar example of cancer caused by irritation is the so-called clay pipe cancer of the lip, caused by the habitual use of the clay pipe. Another is, or rather was, the chimney sweep cancer, caused by the irritation of soot lodged in certain folds of the skin. In late years we have added to our list the cancers produced by the too frequent exposure to the X-rays. A sharp tooth, by prolonged irritation, may cause a cancer of the lip or tongue. In India some of the natives are in the habit of chewing the betel-nut and they even go to sleep with a betel-nut lodged in their mouths. At the place where this betel-nut causes chronic irritation cancers develop. In China the men are in the habit of eating very hot rice. Owing to their inferior social status in that country, Chinese women have to wait and do not get their rice fresh from the fire. Cancer of the stomach is very much more common among the Chinese men than among Chinese women.

By some this fact is ascribed to the difference in the temperature of the rice they eat. The social elevation of Chinese women may result in their not only sharing equally with the Chinese man in his vote franchise but also in his gastric cancer. Gallstones causing cancer form an illustration of the effect of chronic irritation. We might multiply these instances indefinitely. I believe the examples just given are sufficient to show that cancer does result from prolonged irritation.

The lesson to be drawn from this is obvious, namely to avoid prolonged irritation. X-ray operators must protect themselves. A proper attention to a sharp tooth may be a means of preventing a cancer of the tongue. In a word, we should learn to avoid all unnecessary prolonged irritation, especially those forms of it which are known to result in the production of cancer.

CHRONIC INFLAMMATION AS A CAUSE OF CANCER.

We frequently see examples of this condition. There is one form of chronic inflammation which might not be recognized as such, certainly by the laity. The best example of this form of inflammation of which I speak is found in the female breast. It is sometimes spoken of as abnormal involution of the breast. It is characterized by irregular hard masses within the breast which are not distinct tumors. This particular form of chronic inflammation of the breast is very liable to become invaded by cancer, so much so that it may be considered a pre-cancerous stage, and it should be treated as such. If left to take its course many a cancer will ensue; if properly removed by an early surgical operation many a cancer will be prevented. This condition bears a strong analogy, both in its history and in its microscopic findings, to the change which takes place in the prostate gland, resulting in prostatic hypertrophy and which in the prostate results in carcinoma in a very large percentage of cases.

I have not spoken of cancer of the uterus, nor do I believe it is necessary to dwell long upon that subject in this address. Uterine cancer is among the most frequent of all forms and unfortunately it is among the most fatal. Cure of uterine cancer is very difficult. Our greatest hope lies in prevention. There are many conditions which predispose to these cancers, such as simple tumors of the uterus, chronic inflammation of the organ, and chronic ulceration, or so-called erosion, usually the result of neglected laceration and tears. All these abnormalities should be remedied because they are precursors of cancer. They are precancerous conditions. Of the symptoms I shall not speak at this time.

Now let us take unto ourselves such lessons as can be taught from the foregoing statement. Let us see whether we have been doing our duty in the past and let us see what we can do in mak-

ing a fight against this dread disease in the future.

We may sum up our facts very briefly. Cancer is a purely localized condition at first. It tends to spread and to disseminate so that it soon ceases to be localized. Cancer can be cured only by complete removal of the entire growth. The entire growth can be removed only before dissemination has taken place, namely, in the early stages. Therefore in early operation lies our only hope of curing cancer.

Have we been operating on our cancers in the early stages? We have not. A careful study of a large series of cases by the Pennsylvania Cancer Commission brought out the fact that on an average one year and two months elapsed between the time when cancer was first detected and when it was operated upon. It brought out the further fact that one year elapsed on an average between the time when a physician first examined the case and when operation was performed. Less than 68 per cent. of superficial cancers and less than 48 per cent. of deep-seated cancers are operable when the patients come to the surgeons. Think of this delay! When we realize the fact delay amounts to death, it certainly behooves us to see if we cannot do better in the future.

I must mention some other facts which were brought out by this investigation, namely, that in about 10 per cent. of cases the physician first appealed to made no examination, and that in between 10 and 20 per cent. of cases which were examined the physicians gave maladvice, such as, "Let us wait and see what happens," "Do not bother about it unless it becomes painful," etc.

Of course we cannot attain the ideal, but we should certainly strive to come as near it as possible, and if we do not examine our patients when they come to us, and if we do not advise them along the lines of well established fact, we certainly are not striving after the ideal, we certainly are not doing our best.

Undoubtedly the patient is more often at fault than the doctor, but that does not excuse the doctor for his errors, and it certainly behooves every one of us to do all we can to educate the public in these important questions and to stimulate them and to encourage them to co-operate with us.

There is one important thing which must not be forgotten and which must be impressed upon the public, and that is the fact that surgical operations, performed by skilled surgeons, entail very little risk of life. Such operations as are performed for the *early cure* of cancer certainly do not result in the death of one per cent. of patients. Late operations must necessarily be more extensive, more severe, and more dangerous.

Now let us see what may be said as to the

cure of those conditions which may be considered precancerous stages.

This takes us into a very wide field. It is almost a plea for good health. Here the physician and the patient must co-operate; neither must be satisfied with anything short of perfection, as far as perfection can be brought about. Just consider for a few moments the question of digestion and indigestion. Digestion is a normal function which should be carried on without symptoms, without discomfort. Indigestion is a symptom; it means a disturbed function. Of course, it may be indicative of a purely functional disorder, but structure and function are so closely associated that an abnormal function should prompt us to suspect and to look for a structurally diseased organ. Now wherein may indigestion be a warning of a cancer yet unformed? Indigestion and dyspepsia may be the manifestation of gallstones, or of a gastric ulcer. Gallstones cause 100 per cent. of cancers of the gall bladder. If we could cure all cases of gallstones and if we could cure and remove all gastric ulcers before cancers have resulted therefrom, we would have no case of primary cancer of the gall bladder, or of the bile ducts, and we would have but one-third of many cancers of the stomach we have now. It has been roughly estimated that nearly one-half of cancers have a very easily recognized precancerous stage. If these precancerous stages bear the relationship which we think they do to cancer, their cure or removal would mean the doing away with practically one-half of the cancer.

I feel that this topic on which I have addressed you is a very timely one. It is belated, rather than timely, as far as its importance is concerned, for we should have given it more attention long ago. It is timely, because we are beginning to make an organized fight upon cancer, very much as we are making an organized fight against tuberculosis. To accomplish this we must make every endeavor to raise the standard of work among the physicians. As I said in the beginning, the greatest necessity lies in raising the average, our average is too low. We should give every possible encouragement to the scientific study and investigation of cancer. By that means, the solution of the problem may be found some day, but at present it behooves us to better our work in everyday practice, to see that we disseminate among our entire profession all the practical knowledge we have, and to endeavor to bring it about that all our knowledge shall be employed all the time, by all of our profession.

Now as to the enlightenment of the public in these matters. I hold with the majority of our profession, that it is very important that the public should have increased knowledge of this subject, but I do believe that we should be very guarded in the kind of knowledge we teach. We

cannot and we should not teach the public the symptoms of cancer. We must be careful not to fill the public with unwarranted apprehension of cancer. Most of our teaching must come through the physician in his practice. If that were well done it would be far better than anything we could do in the way of spreading knowledge by literature. But there are some things which it is well for the public to know. It is well for them to know that every lump and every swelling is more or less suspicious. They should know that cancer has no definite characteristic symptom which distinguishes it from other conditions; they should know that a physician can give intelligent advice only after he has made a most careful examination in any case. They should not receive nor act upon any advice that is carelessly given. They should know the significance of indigestion, they should know the importance of good health, and they should know that cancer is in a sense preventable, and that it is in a degree curable, the degree in which it is curable depending entirely upon the time in which it is removed. They must know that operation in skilled hands is almost free from danger, that operations are safe, that delay is the chief danger in cancer.

The campaign against cancer has fairly begun. It has already been taken up actively in several states; in some of the health departments, and in others by commissions appointed by state medical societies. Such a commission was recently appointed by the Clinical Congress of Surgeons of North America. The American Medical Association and several of its affiliated state medical societies have started on active work.

In this connection I am not speaking of the tremendous work which is being done by various institutions and foundations along the line of the study and investigation of cancer as a problem; I am speaking of the campaign of enlightenment and of publicity which has been started along the more practical lines.

Of course this is not only a humane problem. It is a most important social and economic problem. If a well organized campaign can result in reducing the morbidity as well as the mortality resulting from cancer, think what a saving it will be to the state.

How directly this thought can be applied to life insurance companies. If life insurance companies can do anything that shall lessen the number of cancer cases developing among their policy-holders, how much money may be saved to them. Some insurance companies are showing a recognition of this fact and are doing much in the way of disseminating knowledge among their policy-holders not only concerning general hygiene and preventive medicine but some of them are trying to impart just such knowledge as I have spoken of, namely knowledge as to how to prevent cancer.

This campaign should not only be nation wide but world wide, and the more quickly it is started on a uniform basis with good organization, the more quickly will it become effective. If we can have this matter taken up as a national affair with systematic work done throughout the United States, with every state and every county working under a uniform plan, how much may be accomplished. One of the first necessities is the establishment of a national department of health whereby we can unify our proceedings and whereby there can be issued national statistics which will be complete and accurate.

Think how much we may accomplish by a successful campaign of uniform and unified effort. When no longer fourteen months ensue between the first discovery of a cancer and its final surgical treatment, and when no longer a year is to be lost between the time the physician first meets a cancer and the time when that cancer is brought to operation, and when no longer the physician who is first consulted in a case of cancer gives maladvice, and when physicians and patients recognize the fact that in early operation lies our chance of cure, think how many less deaths there will be from cancer.

If it is true that 50 per cent. of cancers show a definite and easily recognized precancerous stage, and if it is true that there are 80,000 deaths from cancer in the United States annually, then the remedy of the precancerous state, and the prevention of cancer will save 40,000 of our citizens annually from this terrible scourge. We may not attain our ideal but let us unite our efforts to do the best that can be done.

THE PRESIDENT'S ADDRESS.*

THE RELATION OF SPECIAL TO GENERAL
MEDICINE.

By SHERMAN VOORHEES, M.D.,

ELMIRA, N. Y.

FROM the remotest times of which we have account men have done special work, to be sure many times in the crudest way possible, many times charlatanism pure and simple, and again creditable but crude results were obtained by primitive means.

Voltaire in his physiological dictionary says the celebrated Musa, the physician to Augustus was a slave, but in recognition of good service was knighted and made free, after which physicians became people of some consequence.

When Hippocrates, the father of medicine, declared in his oath that he would not cut men laboring under stone, but would leave that to surgeons, whose work it was, he recognized a great principle, that men learned and skilled in one branch of work were more fitted to do special surgery than he.

* Read at the annual meeting of the Sixth District Branch of the Medical Society of the State of New York, October 17, 1911, at Elmira.

It is only in the last century that the specialties have advanced and multiplied, and sometimes physicians were made specialists in spite of themselves by showing an aptitude, liking and skill in one line of work until it became generally recognized by other physicians who turned over to them difficult cases they did not care to treat themselves. Such an example we have in laryngology today in several men both in this country and Europe, who have proven themselves very expert in the removal of foreign bodies from the upper air passages and in the diagnosis of diseases of the upper part of the chest by the use of the bronchoscope and other instruments of precision.

The fact is the surgeon and internist are quite as much specialists as the gynæcologists or proctologists; they have their sphere, and though it is broad, still they are nevertheless doing special work. By the words surgeon or internist, I do not mean a small minority of men of small grasp of the true meaning of the practice of medicine, who are specialists in their own minds of every ill of which their patients complain, and attempt to do all classes of work which comes to their hands. This class of men are discredited by their fellow practitioners, and rightly deserve to be, and by their lack of knowledge and skill bring discredit to their fellows.

Medicine in its broad sense that embraces all the physiological and pathological processes of the body, is beyond the full comprehension and full understanding of any one man. Hence in spite of ourselves, we have developed along special lines of work, and the specialists and the laboratory men have become necessary adjuncts to the general man of practice; and the general man in like turn is himself the adjunct to the specialist.

The really great advances in medicine in the main have been made by men doing certain kinds of work, and who had both the opportunity and inclination to delve beyond the ordinary knowledge, and have discovered great truths which have been of inestimable help to the world. Many brilliant examples of this are well known to you all. What bids, I believe, to be a great example of this is the salvarsan treatment of syphilis.

Another example is the relation of brain abscess to diseases of the ear, and still another the interrelation of diseases of the pneumatic spaces of the face and that of the optic nerves, and the fine differential diagnosis of diseases of the bladder and kidney by means of the cystoscope and the study of the urine drawn separately from each kidney.

In diseases of children wonderful examples of advancement in the scientific diagnosis and treatment, and especially that of feeding, have been brought about by men devoting their entire attention to these subjects. And the impetus to the pure milk question, which is a very live topic all over this country, was largely given

by men who saw the very great necessity of a pure milk supply to sick babies and to well ones alike.

In this day there is no more reason to expect that one individual should know all the branches of medicine thoroughly and be able to practice them, than to expect that in a great university one should be expected to learn all there is to be gained in the various departments.

The world today, not only in medicine but in science, in business and in affairs of state demand special training and advanced knowledge in all important affairs.

Medicine has reached out in the last quarter of a century to such an extent, in the world of biology, bacteriology and other branches of which it did not formerly dream that an understanding of anatomy, physiology, surgery, practice and therapeutics no longer suffice. But the family doctor must understand the chemical and microscopical analysis of urine, sputa, and other ejecta and be able to make any sort of laboratory test or in lieu of this be able to have them done by laboratory men and interpret their findings and put to practical use the knowledge so gained in treating his case.

Taking the pulse rate, observing the tongue and saying, take one pill three times a day, no longer suffice for the intelligent patient, who very quickly observes if his physician is careful in getting at the diagnosis of his case. It is only a few years ago that what was considered a very early diagnosis of pulmonary tuberculosis, today is considered an advanced case. We must strive to observe every detail of our case, taking cognizance of every thing, as did the late Dr. Joseph Bell of Edinburgh, from whom Sir Conan Doyle derived his inspiration for the character of Sherlock Holmes, from noticing the very astute reasoning and the attention he gave to the smallest detail in observing his cases and getting a chain of circumstantial evidence as it were and the great aid it gave him in reaching a correct diagnosis, in other words, he was a diagnostic specialist. It is this exercising our knowledge and by very clear observation that really brings us up to the point where we are expert in some line of work.

Now it is undoubtedly true that the internist or surgeon can treat many of the cases as well as the specialist, but it is also true that the specialist can treat many of the cases in general medicine or surgery quite as well as the internist or surgeon. But which does not say that in either event one should do the work of the other. There is an economic side to the question, that if the internist and the specialist adhere strictly to their own line of work each has more to do in the cases with which he is most familiar.

No matter what line of work he has laid out for himself, he grows narrow who is not a student and keeps not in touch through the best literature of the day with the advances made in

all lines of medicine, and in no way known to me can one get a better grasp of the more advanced subjects than by attending society meetings where the latest developments in medicine are brought out. The day of the diploma mill is past and the day of the six weeks or two months specialist is doomed; and I believe before long we will have some sort of standard created for men wishing to engage in special lines of work.

Ours is a great profession and essentially one of mercy, and we must not let our prejudices deter us from accepting new and tried procedures which are the milestones in the march of medical science and on the other hand not chase after every butterfly theory that is falsely labeled science and perhaps has for its seconds men who are forcing it for pecuniary gain.

The great science of medicine can be likened to a great factory in which each has his special work to do; a factory where each member contributes his share, all for a common purpose. Ours is to relieve physical disease, so each one of us should stand in our places ready and glad to do the very best within us and each one an adjunct to the other, working in harmony, with a broad vision not of pecuniary reward but for a great scientific principle for the relief and the betterment of our fellowmen.

THE DUTY OF A DOCTOR IN EDUCATION.*

By H. A. EASTMAN, M.D.,

JAMESTOWN, N. Y.

THERE are many points in which the public might be educated by the medical profession with benefit both to the community and to the profession itself.

A licensed physician is in a way a public officer and a public service is expected in return for the privileges extended him. The benefits of education will be more or less according to our united efforts. Fortunately the majority of physicians are united on common interests, but, however, the minority sometimes can tear down in proportion much faster than the majority can build and retain. The influence and acts of these not always to be counted upon by us at critical times are constantly producing ill feeling and loss of confidence in the minds of the public, and the greatest hindrance to our cause seems to be within ourselves.

It is hard to see whether this is due to a lack of knowledge on the part of those who so often detach themselves from honest practice to their carelessness and indifference, or to their wilful disregard of matters not directly affecting their own individual interest. We can hope for but little from the latter class, but with efforts, our organization and individual workers should reach

* Read at the annual meeting of the Eighth District Branch of the Medical Society of the State of New York, at Buffalo, September 24, 1912.

the others, improve and correct their ways, and then our profession would be in a position to accomplish results as physicians and officers of state should in educating the public in matters of common interest to both the public and ourselves.

Are we, members of our profession, fully cognizant of the bountiful age in which we are living? And are we doing our parts as individuals and as an organization to meet the approval of those whom we now serve and those who are to follow?

It strikes me that it would not be amiss if each of us would pause occasionally in our life's labors and inquire, can I not add yet more than I am now doing to promote education which will show final results in human comfort and longevity?

Those of us who for any reason are unable to contribute to the store of knowledge should be earnest in our determination to meet the demands of duty and follow along the paths made by honest, truthful men, of clean morals and high ideals for the profession which we have the privilege to represent, then we will be practicing medicine as consistent members of an honorable profession and not as thrifty agents, exploiting business propositions; we will then be back of every movement for civic improvement, of every effort for social or economic betterment, having with us public sentiment and public confidence.

Medicine, with all its wealth of scientific achievements, with all its earnest and able workers, would never have made such rapid advance without the aid of an aroused and partially emancipated public sentiment.

When many men, thinking individually, come to the same conclusion, action is likely to follow, and when men so thinking demand facts and carefully weigh the evidence, there is likely to be action along right lines. Education is the dynamite of our civilization. It has broken some of the follies of superstition and ignorance, and will break many, many more.

Then let us begin first our education among ourselves and have general co-operation of all members of our organization. This reasonably established, our influence will extend to wider fields and with pronounced results.

We must admit not a few of our licensed physicians, in their eagerness for business, out of necessity or out of an ambitious spirit, overlook or neglect principles, which should be laid down as law in the hearts of every graduate of a medical college at or before the time he enters the work he seeks to follow. Seems to me it would not be amiss to have regular lectures to our students and regular papers in our medical societies on the evils of "Contract Practice," on explaining the methods of "Bone-setters," "Healers" and other irregular forms of practice.

Frequent agitation along these lines will surely have a tendency to keep conscientious men from

entering into or assisting in any way such practice.

There are a certain few among our ranks who devote much time in demonstrating the results of irregular work, also showing the advantages of advanced scientific work, and its benefits to mankind. These men deserve much credit and should be highly rewarded, as but for their efforts it would be very hard to meet the requirements of the antivivisectionist, anti-vaccinationist, and the like.

Many very busy practitioners and scientific workers feel they have little time to devote outside of the work they are particularly interested in, but let us hope the future will have a greater number working together for one common cause, the good of our profession, which can be brought about by educating, first ourselves and eventually the public.

It is well to keep the public informed as regards our achievements, taking time to truthfully explain what we have done, what we are now doing and what we expect to do.

Familiar questions are often asked by our patients about their various conditions and about various questions which only physicians, knowingly and truthfully can explain, and many times the physician, in his hurry and annoyance, will not take the time to answer, but will unwittingly allow them to go away with erroneous and untruthful impressions, even sanctioning some illogical ideas that they themselves may advance about their conditions, or some important public question.

It is to our advantage to give this information truthfully and convincingly and especially so since it is expected, otherwise they may be the willing followers of Christian Scientists, Faith Cures, Advertisers of Nostrums and any one else who will give them a few minutes in explaining conditions, whether right or wrong, and of course a few of them may be completely relieved and their positive testimonials outweigh the negative opinions of the hundreds who are duped. If only, for our own interest, we should explain the scientific principles by which these cures are effected and that under other names they are being applied constantly by every physician with but a small percentage of failures, would it not be better to instruct them in some of the things they should know, such as the great principle of self-poisoning from the retention of waste products; show their origin in errors of diet, ventilation and exercise; tell of their expulsion ordinarily through the skin, kidneys, liver and bowels, and in an emergency through the stomach also; give the action of drugs on their organs, and explain nature's remedial measures of refusing food or of rejecting that which is already feeding the poisons. Let us make plain the nature of each infectious disease, and the manner of its transmission, and impress the infectious origin of all "matter" and abscesses,

and the necessity of surgical measures in their treatment. These and similar truths should enter the popular thought.

Abstract physiology is taught in our public schools; but applied physiology and the physiology of sickness is learned only from the doctors. No matter what the school books may teach, the doctor's opinions are believed and acted upon. Unless the medical education of the people is up to the times, we will be handicapped in our treatment. Both self interest and the public good demand that we should promote the medical education of the public.

PROGNOSIS IN INFANTILE PARALYSIS.*

By **WISNER R. TOWNSEND, A.M., M.D.,**
NEW YORK CITY.

THE prognosis in infantile paralysis is a question which must be considered from various standpoints, and it is therefore more or less complicated. One must consider it, first, as to life and death, when a patient is first attacked with the disease. Second, what are the chances of complete recovery; if the recovery will not be complete, to what extent will the patient recover? Third, knowing what muscles have been left paralyzed, a study must be made of what will be the results of this paralysis, whether it will affect the growth of bone, muscle, or other tissues, and whether deformities primary and secondary will develop. Fourth, what will be the results of treatment or of neglect of treatment.

If one is called to see an early case of infantile paralysis the first question from the standpoint of prognosis is what are the chances of life or death? In considering these one must take into account the age of the patient, the character of the epidemic, the type of disease, and the condition of the patient, and the surroundings.

All statistics as to mortality are subject to scrutiny because many of the milder cases are

not reported, many of the most severe are reported as meningitis and many at the beginning are not recognized, although the frequent epidemics of late years will soon make this disease as well known as any other. The mortality varies much as is shown by the following table of reports from different localities and in different years.¹

In New York City in 1912 there were reported 504 cases of infantile paralysis. Of these 70 died; 53 in children under 5.² In Buffalo, N. Y., an epidemic occurred in 1912 in which 280 cases were reported with approximately 40 deaths, or a mortality nearly the same as the rate in New York City. In Buffalo the disease was epidemic; in New York sporadic. Some authors have stated that the death rate was higher in sporadic cases than in the epidemic. Of course, these statistics do not solve the question, nor agree with that statement. The cases reported from Alaska,³ at St. Michael, 5 cases with 1 death, at Unalakleet 10 cases with 2 deaths, and at Sitka in 1908 of 5 cases with 2 deaths, show also very considerable variation in mortality rate.

The cases treated at the Rockefeller Institute showed a mortality of 14 per cent., but if figured on the basis of all who applied for treatment it was about 6 per cent.⁴

One of the most favorable epidemics as far as mortality was concerned was the one in New York in 1907, which was studied by a collective investigation committee, and a full report made. It showed a low mortality rate estimated at 5 per cent., and more cases were studied than in any other previous report. The epidemic was also noted for the small number of adults affected and the large number of very young children stricken. A still lower death rate than this is found in the 506 cases reported in 1910 in the District of Columbia, and studied by a special committee of the Medical Association. It only records 10 deaths, a rate of less than 2 per cent.³

The prognosis is graver in children under one year of age and in persons over ten than in children between one and ten, as is shown by the second table.¹

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

Reported by	Place	Year	Total Cases	Deaths	Mortality Per Cent.
Caverly	Connecticut	1894	126	18	14.0
Wickman	Sweden (general)	1905	868	145	16.7
Wickman	Trastena, Sweden	1905	26	11	42.3
Wickman	Atvidaberg, Sweden	1905	41	4	10.0
Wickman	Smedjeback, Sweden	1906	23	5	22.7
Com. of Investigation	New York	1907	2,000	100	5.0
Hill	Minnesota	1909	383	68	24.0
Lovett	Massachusetts	1909	628	51	8.0

Epidemic	Under 1 Year			1 to 10 Years			Over 10 Years		
	Cases	Deaths	Mortality Per Cent.	Cases	Deaths	Mortality Per Cent.	Cases	Deaths	Mortality Per Cent.
Massachusetts, 1909	44	7	16.0	494	20	4.0	77	16	20.0
Minnesota, 1909	21	8	38.0	235	37	15.7	69	24	34.8
New York, 1910	12	4	33.3	158	18	11.4	54	12	22.2
Total	77	19	24.7	887	75	8.4	200	52	26.0

The mortality rate in Massachusetts for 1910 was 1 per cent. higher than in 1909, and the mortality by ages in 1910 is shown in the following table:⁵

	Cases	Deaths	Mortality Per Cent.
Under one year	38	3	7.89
One to ten years.....	451	39	8.64
Oven ten years	112	12	10.71
Total	601	54	.....
Average mortality ....	...	..	8.98

The next table compares the cases in New York for 1910 and Minnesota for 1909 and gives us the mortality rate by sexes:⁴

	Males			Females		
	Cases	Deaths	Mortality Per Cent.	Cases	Deaths	Mortality Per Cent.
Epidemic						
New York, 1910..	118	17	14.4	109	17	15.6
Minnesota, 1909..	188	42	22.3	137	27	20.0
Total	306	59	19.2	246	44	17.9

It shows that the sexes are about equally affected in regard to mortality and the variations are very slight in comparing death rate among males and females. Referring to the above tables we see very variable percentages, those of Wickman in Sweden ranging from 10 to 42 per cent. The 868 cases occurring throughout Sweden showing a death rate of 16.7, while in Trastena, the death rate was 42.3, and in Atvidaberg 10 per cent. The same variation is shown in reports from this country.

The type of the disease is of very great importance from the standpoint of prognosis, because it has been definitely shown that in the type known as bulbar, medullary or pontine, the fatality is the greatest. 4.7 per cent. of all cases in Massachusetts for 1909 were found to be of this type. In it Frost⁶ includes the cases in which, in addition to the paralysis of the cranial nerves, there is paralysis of typical spinal type and cases in which the only paralysis is bulbar. Medin (in 1890) was the first to call attention to the frequency of paralysis of the cranial nerves in epidemic infantile paralysis, and in cases of this type we find the most common form of paralysis to be facial, more often unilateral than bilateral. Ocular paralyses are next in frequency. The external rectus is most frequently affected, causing the eye to turn inward. Paralysis of the oculo-motor may cause divergent squint with or without ptosis; or, more rarely, ptosis may be the only indication of ocular paralysis. In very rare cases there is paralysis of all the muscles of the eye. Transient motor disturbances of the eye, nystagmus, diplopia, or fixedness of the eyes may occur. Wickman cites two cases in which the optic nerve was affected with a resulting atrophy and blindness of one eye. Sudden deafness, usually of short duration, has also been seen. Paralysis of the respiratory

centers may also be included as a "bulbar" symptom, but paralysis of bulbar origin is often temporary as is to be expected from the fact that the damage to the ganglion cells in the bulb is usually less severe than in the cord. If the muscles of the upper extremity are affected the prognosis is worse than when the muscles of the lower extremity are affected, because of the proximity to the bulbar centers. If both sides of upper extremity are involved prognosis is not as good as when one side is affected. Many of these cases are undoubtedly pronounced meningitis. The best description found relating to the question is the one by Peabody, Draper and Dochez,⁴ and the portion relating thereto in their discussion of prognosis is quoted in full:

"Death, according to Wickman, occurs most often on the fourth day of the paralysis, the third to the seventh being the limit. In our cases, death occurred once on the second, four times on the third, once on the fourth, and once on the fifth day of the paralysis. Figuring, however, not in days of paralysis, but rather from the onset of the disease, the fifth day has been the most fatal, with limits from the fourth to the eighth days of the disease. We, therefore, make it a rule not to declare children out of danger until after the eighth day from the first appearance of muscular weakness.

Usually the fatal cases are very ill in the first two or three days, and in our series all had paralysis of one or both deltoids; that is, an involvement of the cervical cord. The extreme prostration and the upper extremity paralysis, unless the case was of the rapidly ascending type (Landry), have been the only tangible prognostic features. An impression, however, derived largely from the patient's psychic state, has helped materially. In practically all the fatal cases the peculiarly alert cerebration, described under the section on the fatal cases, has been present. None of the profoundly stuporous or highly irritable cases have died. Consequently, we have been glad to see patients in the early days either irritable or drowsy. One case, in particular, recovered, whose rapidly ascending paralysis, first involving both legs, then one arm, then the back and neck, had led us to give a bad prognosis. This patient was very drowsy, and was irritable if disturbed.

Paralysis of either diaphragm or thoracic musculature alone is not necessarily of bad prognostic significance. Children with such involvement, however, are rather prone to develop broncho-pneumonia, which is then almost always fatal. Nevertheless, we saw one instance in a boy of twenty-one months, who reached the hospital with a paralyzed diaphragm and a resolving consolidation of lobar pneumonia. He made a good recovery."

The deaths in the Rockefeller Institute occurred early and Koplik⁷ states that "most of the deaths occur in epidemics from the fourth

to the tenth day, so that if a case has lasted ten days the outlook is good." The question, therefore, can usually be decided by the end of the second week as to whether the patients will live or die.

E. M. Sill⁸ states that in 266 cases reported by Zappert in 1908, fourteen were of the Landry type with a mortality of 5.25 per cent. Frost says:⁶ "In the Landry type often spoken of as the ascending or descending type, the paralysis proceeds from the part first affected either ascending or descending until the whole body is paralyzed or death ensues from the paralysis of the respiratory muscles. In cases of this type one must give a guarded prognosis, and it is to be noted that in such cases a prodromal or prognostic symptom is pain referred to a definite muscle or group of muscles. This symptom of pain is one that may be of slight or great value. In many cases of infantile paralysis there is a general hyperæsthesia in the early stages which must be distinguished from pain, and in those suffering from hyperæsthesia the slightest motion may cause pain. If the pain is of significant importance it is either localized or only caused by certain definite movements. In very young children the difficulty of clearly making out these facts is apparent to all, but careful examinations will sometimes reveal data which on more careless tests are not evident. The infrequency of the Landry is to be noted as compared with the frequency of the bulbar type, but it must always be borne in mind that such cases do occur, and a guarded prognosis made if one is found. Another symptom which may be of value is fever. Starr⁹ says: "Prognosis is better in those that begin with fever in the epidemic, after the second week of the disease, than in the sporadic, and Albert and Rolster¹⁰ state that in the cases that begin with fever the prognosis is better than in those which do not. In the young and the very old the prognosis is not as good as in cases between the two extremes of age. In the cases in New York in 1912 one patient that died was 55 years of age, and Wickman reports in an epidemic, four cases of over 50 years of age. Paralysis of the muscles of respiration is a serious matter and if noted, one should make a guarded prognosis. Artificial respiration has been employed to overcome this condition, and Osler⁹ reports a case in which the patient was kept alive for 41 days. Some cases of involvement of the diaphragm, however, have recovered. All authorities recognize so-called abortive cases or cases of such mild type that they will completely recover. 25 per cent. has been stated as an average of the cases that will be affected during an epidemic and will recover without leaving any signs of the disease. Many of these cases will show little if any symptoms and may be entirely overlooked, while others will be sufficiently marked as to be easily recognized. Abortive

cases occur in varying degrees in different epidemics, the proportion varying very greatly. Wickman found very great variations, the total for all of Sweden being about 15 per cent.; in Trastena 23 abortive cases were found, equal to 46 per cent.; in Atvidaberg 35 per cent. abortive, and in Smedjeback 26 per cent. abortive. Anderson in Polk County, Nebraska, in 1899 found 86 cases with 39 abortive, or 44 per cent., and in an epidemic in Hancock County, Iowa, investigated by Frost, the proportion of abortive cases was excessively large, and by some authors is thought occasionally to equal the number of frank cases, or 50 per cent. Wood, in the Massachusetts report previously referred to, states that there were three classes of recovery; complete recovery without atrophy, 16 equal to 28.1 per cent.; functional recovery with atrophy, 31 equal to 36.8 per cent., and recovery with some hypertrophy, 3 or 5.3 per cent., or that for every four recoveries without atrophy there were five with atrophy, and it may be noted here that the atrophy usually denotes paralysis, and a lack of atrophy a lack of paralysis or a loss of power so slight that there are no trophic changes, and necessarily a good recovery as far as function.

It must be understood that a definite prognosis cannot be made as to amount of muscle recovery until sufficient time has elapsed to show what muscles are or are not paralyzed. In nearly every instance the amount of apparent initial paralysis is far greater than is found to be the case later, but in most instances a muscle primarily paralyzed will remain so. The extreme prostration in many instances, the hyperæsthesia, and the failure of certain individual muscles to act, lead one to believe that parts of the body may be paralyzed that will eventually be shown not to have been affected. At this stage, therefore, a prognosis should be very guarded and optimism is to be encouraged, but it must be clearly stated that although the optimism is justified in a great many cases, occasionally, unfortunately, it is not. It is also a difficult problem to state in the early stages how far the recovery will go and how much real paralysis will follow. The loss of reflexes such as knee jerk, etc., is of bad prognostic significance as far as muscular activity recovery is concerned, but it is not a positive sign that a recovery may not follow.

Healthy muscles contract when stimulated by a mild faradic current applied to the nerve trunk or to the muscle, and the response is instantaneous. If one substitutes a mild galvanic or constant current it produces no response though applied to the nerve trunk, but as the current is increased response follows and the result is uniform with normal muscles and the contraction from the negative or the cathode is the first to appear when the current is increased. In disease the faradic and galvanic responses of the nerves are lost. The muscle, however, retains

an electrical excitability of its own, which means that according to the stage of the disease it requires stronger currents to produce electrical contraction and the polar formula is soon altered, that is the C. C. C. equals or is less than A. C. C. Muscles that are paralyzed in poliomyelitis present the reaction of degeneration. Delherm and Laguerrier¹¹ state that the reaction of degeneration is usually present by the tenth or fifteenth day.

The amount of degeneration may vary, and one may find a partial reaction of degeneration. If the reaction of degeneration is present one is justified in making an unfavorable prognosis as to the complete recovery of that muscle, but this is subject to certain limitations, and these must be borne in mind in considering the question of prognosis, and it must also be taken into consideration that in very young children it is often impossible to examine the muscles properly by electricity because of the unwillingness of the child to permit of the examination and of the pain that may be caused by even light currents. The loss of faradic reaction, however, is not an indication that the muscles will be totally paralyzed, since faradic reaction has been known to return in a muscle a year after it has been lost, yet such a muscle never completely recovers its power.⁹ The electricity cannot be applied within the first week or ten days because of the fact that the muscles are in a state of excitability and no definite knowledge can be had as to what the outlook will be.

A definite or positive prognosis as to the amount of recovery or the amount of damage that will be done as a result of the paralysis cannot be made with any satisfaction within six months or a year of the original onset, but by that time very definite knowledge can be given in the very large majority of cases. Preliminary treatment will have been given, massage, electricity, injections of strychnia, etc., etc., and it then can be known if deformities are to follow and what will be the result of these deformities. In a previous article,¹² the writer stated as follows:

"The distribution of the paralysis is of the utmost importance from the standpoint of the prevention of deformity because it is known that paralysis of certain muscles produces definite deformities in time unless steps are taken to prevent such results. The original paralysis may be of slight importance in that it may only involve one muscle, for instance, the *tibialis anticus*. Untreated or badly treated, a severe valgus, an exaggerated form of flat foot with or without equinus may lead to a deformity most difficult to correct, and one that may require an extensive surgical operation, or the deformity may persist and seriously cripple the individual despite the best efforts of the surgeon, and such a foot may even be made worse by a poorly planned and badly executed surgical procedure. In some

instances the operation may be a success and the subsequent result a failure due to lack of proper after-treatment. Practically all such cases need a brace after the operation, but despite all that the orthopedic surgeons have said and written on the subject braces are seldom applied, if one is to judge from the relapses or faulty cures which come to orthopedic institutions for further treatment. . . . The paralysis is a serious matter but the later effects are still more serious and many of these can and should be prevented. To allow a deformity to occur and then treat it is unscientific and harmful, to prevent it if possible is scientific and helpful. The production of the deformity is due to several causes: 1. Gravity. 2. The action of non-paralyzed muscles. 3. The arrested development and growth of all tissues in proximity to the muscles paralyzed. 4. The results of weight applied to weakened structures. 5. All other causes."

Many early examinations overlook paralysis of certain muscles or groups, which should have been found, and in a paper on "The Necessity for Early Orthopedic Treatment in Poliomyelitis,"¹³ the following paragraph is especially important in this connection:

"The large number of cases of primary genu recurvatum shows that in many of the cases examined there was a loss of power in the quadriceps femoris, or anterior thigh muscle group; in many of these there was a calcaneus present, showing clearly that it was not the patient's effort to get the heel to the ground that caused the deformity. In many, at the earlier examinations, this condition was overlooked, and when the patient could stand by leaning against an object, some physicians were inclined to make light of this condition because the child could flex the thigh on the abdomen. In some the psoas and iliacus acted well, in others the thigh flexion was most imperfect, being only accomplished by the tensor vaginae femoris, and, of course, accompanied by marked abduction."

If the paralysis is complete no muscular growth or development may be expected, but the effects on the growth of the bone vary considerably. It may be stated that if the attack occurs in a very young child the growth will be affected in proportion to the amount of the paralysis and the ability of the patient to use the limb. If only one muscle such as the *tibialis anticus* is involved in the lower extremity, the interference with the growth of the foot may be more marked than the growth of the leg, but usually both are affected, to a slight degree. If both limbs are equally affected, as a rule the growth is equal in both limbs, but if one limb is seriously affected and the other slightly affected the growth of the bone both in circumference and length will vary. The following case illustrates this very well:

A girl, 2½ years of age was seen November 5, 1901. She had infantile paralysis in the pre-

vious July. At first both legs were affected, but the left had almost recovered, no deformity except slight genu recurvatum on right side and a decided loss of power in all muscles below the knee both front and back and inability to make any foot motions. On the left side there was a very slight loss of power in the common extensor. All other muscles acted well and no deformity present.

On April 8, 1913, or over 11 years later the muscles of the right and left thighs act perfectly but the right thigh 8 inches below the anterior-superior spine measures $17\frac{1}{2}$ inches, whereas the left measures $20\frac{1}{4}$. In 1901 measurements were $7\frac{1}{2}$ for the right thigh and 8 for the left. The difference of $\frac{1}{2}$ inch in the intervening years has become nearly 3 inches. The calf in 1901 on right side measured 6 inches, on the left $6\frac{1}{2}$. In 1913 the right measures 9 inches as compared with 12 inches on the left side. In 1913, on the right side there is no power in the tibialis anticus, very slight in common extensor and slight in extensor of the big toe, none in posterior muscles—on opposite side all muscles act well, but there is diminution in power of the common extensor. In 1901 the length of both limbs was equal and in 1903, or 10 years ago, measurements on right side showed length of $17\frac{1}{2}$ inches and on the left $17\frac{1}{2}$ inches—in 1913 it was $31\frac{1}{2}$ and 34. In other words length has doubled and difference was $2\frac{1}{2}$ inches and of this amount 2 inches of the shortening was in the tibia and fibula of the affected side. The right foot measures 7, the left $7\frac{1}{2}$ inches in length. The general development is very good and there are no secondary deformities. Raised shoes and proper braces on both limbs have effectively prevented these results. The growth on left side is fully equal to normal growth and measurements show full development for a girl of 14 years, the left thigh is even larger than normal. The height of the patient is $61\frac{1}{2}$ inches. The average for age 14 is given by Bowditch as 60 inches.¹⁴ It is thus seen that on the right side which has very severe loss of power or paralysis of muscles below the knee there is marked diminution in growth of the bone. The child has had measles, scarlet fever, and been operated on for appendicitis during these years. If in the lower extremity one side is shorter, a tilted pelvis will follow, and a deviation of the spine will result from the deviated pelvis unless efforts are made to prevent deformity. Paralysis of the muscles of the upper extremity, the arm, for instance, will cause a wasting and decrease in the length of the limb, the same as in the lower extremity, or by dropping from the shoulder it may even make the arm apparently longer. It may produce a torticollis and various deformities of the trunk. The angel's wing may follow palsy of the serratus muscle; various degrees of ptosis will follow where one has paralysis of the abdominal muscles. Lateral

curvature may follow a paralysis of spinal muscles.

Knowledge of the subject is such today that one who is well versed in the subject can make a very definite prognosis, although each case has to be studied individually and general directions may be of no great value to one without clinical experience.

Another point of interest is that epilepsy and loss of speech has followed an attack of infantile paralysis and on operation the lateral ventricles were found unduly filled with fluid and after the operation speech returned. Such cases must be very rare.¹⁵

The last phase of the question to be discussed is what will be the results of treatment or neglect of treatment? For this disease one has no specifics which will absolutely cure, and a great difference of opinion exists among medical men as to the best treatment, but it is generally admitted that the so-called orthopedic treatment is the one that gives the best results and that very often neglected cases show great improvement under proper treatment. To discuss the question of the desirability and advisability of tendon transplantation, nerve anastomosis arthrodesis, amputation, and artificial limbs, would require a separate paper, but a few remarks are justified in the present one.

The surgery of infantile paralysis has occupied much of the time of the orthopedic surgeons during the last twenty years, and great advances have been made. Operations have been perfected, which give admirable results. Nerve anastomosis has so far not proven very gratifying in its results; tendon transplantation has been, in the hands of most men, somewhat of a disappointment, but it has a place and is of great value in suitable cases. The works of Lange and others show that we have at our command methods of transplanting tendons today that were not thought of in times gone by. The use of silk ligatures, fastening of tendons to bones and periosteum instead of to paralyzed tissues, and the selection of the proper tendon and the proper combination of tendons with the subsequent after care, are giving results superior to those when the operation was first suggested. Arthrodesis has proven of the greatest possible value. The removal of the astragalus with tendon transplantation, and the latest suggestion of Hawley (not yet published) of the Hospital for the Ruptured and Crippled—to fasten a bone graft to the lower end of the tibia or the astragalus thus pinning the two together, give many methods of procedure which will enable one to help many cases. For complete reviews of this subject one should consult Vulpius,¹⁶ Tubby and Jones¹⁷ and other authorities.

Optimism in the treatment of infantile paralysis by mechanical measures is justified by the results. A boy now twelve years old, was seen when two years old. He had a paralysis of

the trunk muscles which has resulted in a lateral curvature; both legs and thighs are paralyzed, but the arms remain good. At the onset he was completely paralyzed. As the result of mechanical treatment, massage manipulations, active and passive motions, and an optimism on behalf of the writer which was most helpful to mother and patient, the boy is walking with the aid of crutches and braces at the end of ten years of constant endeavor, and the walking is not merely a few steps, but he walks very considerable distances and without discomfort.

The prognosis is also very materially affected by the character of the treatment. An efficient masseur may work wonders, where one who is inefficient or untrained may produce no results. A patient will improve who realizes the objects of treatment and that the braces are not curative but are applied for definite purposes such as prevention of deformity, prevention of stretching the muscles, maintenance in good position while power is being regained. A willingness to realize that constant endeavors will produce results, where careless treatment would result in failure helps greatly. Optimism on the part of the patient and others who have to do with the patient, is the one thing that must be continually preached, and it must also be realized that the treatment must be continued for years and that whereas no improvement may be shown for a long period of time, yet this must not be a source of discouragement but must make one increase the efforts for better and more work along the right lines.

Mechanical treatment, if undertaken early, will place the parts affected in as near as possible a normal position, and muscular recovery under the circumstances will be greater if recovery is to follow, and if not, the parts will be in better position for any surgical procedure that may be indicated later on, under such treatment prognosis is better than where nothing is being done.

The use of crutches will help many to walk. Patients who have been unable to walk because contracted tendons, may, by means of tenotomies, myotomies and stretchings or other operations, be enabled to get around. The author knows of such a case, who walked after proper treatment at the end of 19 years of neglect. The neglect is usually on the part of the parents, but sometimes it is attributable to faulty advice from the physician. To look upon these cases as hopeless is not to give the proper prognosis; is not to do one's full duty.

In looking over all these questions relating to prognosis it must be understood that while they all have a bearing and are of great value when one comes to study the individual case, one may be much perplexed as to the proper prognosis to make. When a patient is first attacked prognosis must be guarded. If it is of the pontine or bulbar type, or in an epidemic, with a

high mortality, or in the very young or the very old, prognosis is not as good as in other cases. The mortality may be put down as from 5 to 25 per cent. About 25 per cent. of the total affected may be of the abortive type. By the end of the second week electrical examinations may enable one to make a rather positive prognosis as to which muscles will be affected, but no definite conclusion can be reached as to how far they will be affected and what the ultimate results will be before the end of six months. Definite conclusions can be given by the end of a year as to what the ultimate results will be. Deformities both primary and secondary can be predicted and thus prevented. Proper orthopedic treatment will give the best results.

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ABNORMAL TEMPERATURES.*

By M. CAVANA, M.D.,

SYLVAN BEACH.

THAT the time honored study and practice of medicine, through the long train of modern scientific developments, may properly be classed among the present day sciences, none will deny. But that the study is as yet far from that state of perfection as to entitle it to a classification with the fixed sciences, may be accepted as equally true.

With "progression" as the watchword of our science, and "perfection" as its ideal, the faulty practices within our professional field, however long continued or remotely founded, must necessarily give way to newly discovered

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oswego, October 3, 1912.

truths, and conditions proven by experimentation and corroboration.

About one year ago it became my good fortune to present to another convention (the New York and New England Association of Railway Surgeons), a paper upon the subject of abnormal temperatures, and it is our aim in this undertaking to continue what we consider the justifiable work then begun, in the direction of correcting a serious error in the modern treatment of infectious diseases, through the citing of another scientific audience to what we believe to be the present day misuse and misapplication of drugs and other remedies, in the treatment of those classes of disabilities which present abnormal temperatures.

Students of practical bacteriology fully understand that the pathogenic micro-organisms develop excellent cultures in all ordinary temperatures, from the freezing point up to 100 degrees Fahrenheit; that the most active and perfect results are secured when the temperature of the incubator is uninterruptedly maintained at $98\frac{3}{8}$ degrees, the temperature of the normal human body; which temperature is the accepted working standard, and is known in laboratory parlance as incubator temperature; and that in an atmosphere in excess of $98\frac{3}{8}$ degrees, the cultures show less activity in the process of propagation, and perfection in development, in proportion to the excess of the temperature to which they are subjected, that laboratory cultures are seriously impaired when subjected even for a few hours to a temperature of 100 degrees; that at 103 degrees, all of the laboratory pathogenic germ cultures are spoiled and the process of development practically suspended, with very few exceptions, principal of which are the typhoid bacillus and the streptococcus, both of which groups, as you are aware, are recognized as among the most vital and tenacious of the pathogenic varieties; but even these enduring varieties totally suspend propagation and development in temperatures of from 103 to 105 degrees Fahrenheit.

Is it not fair and reasonable to assume, that what is true of the temperature effects and influences upon the micro-organisms while in the process of development and propagation in the incubator, is equally true as to the cultures in the human circulation, and that the stimulation of the thermogenic nerve centers, with the resulting prompt acceleration of temperature, is in reality a saving and protecting act of nature, rather than a feature of the disease calling for counteraction, a phenomena that should be promptly recognized and encouraged, rather than opposed or impeded?

In our studies of the animal economy, the

most perfect practical system in which means are adjusted to ends in the natural world, we confront the broadest and most convincing proofs of the fact that nature's promptings and manifestations are generally well timed and trustworthy. The diminishing stock of nutritious elements within the circulation of our bodies is promptly followed by the sensations of hunger,—nature's calls for the required food. The increased density of the circulatory fluids produces thirst, in proportion to the degree of such density, which condition is relieved when nature's calls are heeded, and the necessary liquifying fluids administered to our bodies. The discomforts resulting from exposures to cold, are but nature's calls for a change of atmospheric temperature or additional clothing protection, which discomforts immediately suspend when the demands for the needed warmth are supplied.

In the premonitory symptoms of the various infectious diseases, may we not reasonably accept the chill and the sensations of cold as nature's bid for the application of warmth to the infected body, in view of the fact that during the presence of the most pronounced sensations of cold in these cases, we find by our thermometer tests what would be a most astonishing condition in any other situation—an absolute contra condition; that instead of the lowering of the bodily heat in conformity to the chilly manifestations of the body, we find an actual pronounced general acceleration of the bodily temperature, and the continuation of the same, until the germ invasion has been overcome, or nature has yielded her supremacy to superior opposing forces and met defeat in her undertakings.

How subject to general ridicule would be any theory disproving the administration of food to the hungry body, or fluids when thirsty, or warmth when chilled, or rest when wearied? Not a single individual of the earth's civilized millions would even question the sincerity of such demands on the part of nature, or the propriety of administering to those needs thus manifested. Then why ignore the earliest appeals or manifestations of nature when awakening to the fact that she has fallen a victim to an infectious affliction?

Why question her sincerity, when she presents to us an acceleration of temperature as a manifestation of her endeavors at early self-protection and defense, and when she emphasizes these undertakings by adding to the temperature the phenomena of the chill, leading the afflicted victim to seek additional warmth? Why not view with the same rationality these manifestations, and consequently direct our interference in the channels of facilitation, rather than impediment?

Medical Society of the State of New York

ANNUAL REPORTS

1912

REPORT OF THE PRESIDENT.

To the House of Delegates:

The immediate predecessor of the president made several valuable recommendations to your honorable body. Some of those recommendations have been under consideration and others are yet to be acted upon.

The suggestions of one who has reviewed the entire situation and has carefully weighed the needs of our State Society from the viewpoint of a practical observer should be wisely discussed, either by the House of Delegates as a whole or by duly appointed committees. For thoroughness of action and economy of time, committee work is desirable and decidedly advantageous. When a committee reports to the House it concisely states its conclusions as based upon a knowledge of the facts in the case and a clear understanding of working propositions as they have been found to operate. The president, therefore, urgently recommends the appointment by the House of Delegates of a committee for each specific purpose of such importance as shall require extended investigation and tests of expediency and presentation to those who have the authority to act, either in a legislative or an executive capacity.

Your Committee on Legislation is prepared to perform the duties which are duly referred to it. It is further suggested that any necessary expense which is right and proper should be authorized by the Council if it is desirable for a special committee to co-operate with any committee of the American Medical Association in matters which must come under the consideration of the Congress at Washington.

Owing to the magnitude of the interests of the State of New York in its financial and populous importance, it does not seem unreasonable that this state, situated as it is, furthermore, near the Federal capital, should essay to exert a potent influence upon the acts of the Congress in many, if not all, of the great and vital affairs of the whole people of the nation. For example, our House of Delegates on January 22, 1910, passed a resolution urging the Congress to authorize a Bureau of Public Health. Although the Congress has not seen fit to establish a Department of Health, it is very desirable that there

should be one and that the enlargement of the powers of the Public Health Service, a department of the Treasury, is not enough.

If the Federal government could be persuaded that the highest interests of 90,000,000 inhabitants of the United States demanded an organization of a veritable National Department of Health, we should have a Secretary of Health, whose expert knowledge of the requirements and whose undivided attention to the administration of such a department, divested of pernicious political policies and the interference of "Special Interests," would definitely provide for a needful and efficient regulation of Pure Food and Pure Drug Laws; a Division of Purification of Water Supplies; a Division of Nutrition; a Division for the Study and Prevention of Accidents and Diseases of Industrial Workers; a Division of Vital Statistics; a Division of Education for the People in the Control and Prevention of Diseases.

Then, too, we should have an adequate National Chemical Laboratory to solve many of the vexed problems of national importance. As has been stated, all of these divisions would come under one department, and would be under the supervision of one secretary, and would not be, as now, scattered among several departments with such a diversity of interests as should make the highest efficiency impracticable if not quite out of the question.

For a review of the proposition to organize a National Department of Public Health, let me refer the members of the Society to an article by Earl Mayo which was published in the *Outlook*, December 7, 1912, page 764. This article gives extensive and striking details and statistics of the problem of national health in a most interesting and convincing manner.

A still more recent development than any before mentioned is the inquiry into the causes, control and prevention of those accidents and diseases which particularly concern the industrial workers.

The president recommends that the consideration of the New York Industrial Diseases Reporting Law be referred to the Committee on Legislation.

The American Medical Association held a joint session on the industrial diseases at Atlantic City in June last, and it is reported that the subject has made some progress in attracting attention throughout the country. It is questioned, however, whether there has come to be a proper appreciation of the relation of disease to industry. It is certainly important that the study of diseases of occupation should receive the most careful attention and investigation. The president, therefore, earnestly recommends that the House of Delegates take some more decided steps in this matter and, if deemed advisable, appoint a special committee to co-operate with or act in place of the Committee on Legislation, as well as to second the action taken by the Committee of the American Medical Association.

At the stated meeting of the Council last May it was voted and carried that the scientific work of the Society at the next annual meeting should be divided into five sections, to wit: Medical; Surgical; Eye, Ear, Nose and Throat; Pediatrics; Obstetrics and Gynecology.

The capable chairmen of the five sections, with the able assistance of their secretaries, guided and seconded in their labors by a most competent and conservative Committee on Scientific Work, have elaborated a very attractive and comprehensive program, which enrolls many distinguished readers from within and without the state.

It seems hardly necessary to remark, though the president enthusiastically wishes to reiterate, that great efforts have been made to emphasize the desirability and great importance of particular and general discussion of the papers provided by the sections. Heretofore systematic discussion of the subjects of the scientific program has been wanting or insufficient and quite unsatisfactory, not only to the readers, but also to those who either wish to take part in the discussion or to listen to the relevant remarks on the subject matter of the papers by those most competent to make them. It has appeared to the Committee on Scientific Work that "the more time given to the discussion the better," and that there could be no better use of time.

It is gratefully acknowledged that the kindest and most considerate co-operation of the associated officers of the Society, of the Council, the Committee on Scientific Work, the several chairmen of the sections, and the chairman of the Committee on Arrangements, has been a signal support to the president in all his exertions to conscientiously discharge the duties of his office. And the president dares to trust implicitly in the promised success of the next annual session of the Society.

It is believed that the arrangement of the five sections as now constituted will prove to be satisfactory to the members of the Society, and it is doubtful whether the State Society could

afford to spare any one of the scientific sections as at present organized. If positively advisable, other divisions might be incorporated into the five existing sections, without radically changing those on trial, by simply extending the scope of their usefulness.

The membership of the Society is not at all what it should be. The exact figures, as provided by our most active and efficient secretary, noting the attendance at the last annual meeting, are as follows:

Section on Surgery	174
Section on Medicine	223
Section on Public Health and Preventive Medicine	70
Section on Mental and Nervous Diseases...	71
Section on Eye, Ear, Nose and Throat.....	96
Guests	39
Members not registered under any section..	142

Deducting 94 duplicate registrations leaves a total of 721.

A considerable number of new members may join us in March and April. Solicitations have been numerous and solicitors have been active among young men who are willing to come into the Society, but have delayed a final decision because of a lack of information as to how they might make application, or because they were undecided in what county they would begin practice.

The presidents of the District Branches have been urged to stimulate increased membership and regular participation in the County Society meetings, and every County Society president has been repeatedly importuned to secure new members and larger attendance for their respective county conventions.

It is earnestly hoped and confidently expected that our next annual meeting shall be the largest of any in the history of the State Society. If we are disappointed in our hopes and expectations the responsibility shall not be far to seek, but it shall be divided among our colleagues in the profession and the members of the Society in general, and among the presidents of the District Branches, the presidents of the County Societies, and the committees and officers of the State Society. As has been remarked, however, the chairmen of the scientific sections and the Committee on Scientific Work have been especially active and they have made noble efforts deserving of the highest praise for what bids fair to be the unqualified success of the 107th annual meeting of the Medical Society of the State of New York.

JOHN F. W. WHITBECK,
President.

February 20, 1913.

REPORT OF THE SECRETARY.

To the House of Delegates:

In compliance with Section 3, Chapter VI, of the by-laws, the secretary submits the following report for the year ending December 31, 1912:

Membership December 31, 1911.....	6,742	
New members, 1912	400	
Reinstated members, 1912	219	
		7,361
Deaths	80	
Resignations	46	
		126
		7,235
Dropped for non-payment of dues, December 31, 1912	381	
		6,854
Elected after October 1, 1912, and credited to 1913	110	
Membership January 1, 1913	6,964	

The percentage of paid up to total membership is 94.7, about the same as for the past five years. The membership on December 31, 1912, after the removal of the delinquents, is 6,854, as compared with a membership on December 31, 1907, after the removal of the delinquents, of 5,980, a growth in five years of 874, an average for the five years of 175 a year, but it is to be noted that the increase for the year is only 99 members as figured on January 1, 1912, and 1913.

Many of the delinquents will come back, but it is very evident that recruiting must be actively kept up and greater efforts made to bring in new members of the society expects to keep up the proper growth, because this increase of 874 in five years means that only about half the new physicians registered in the state during that period have been admitted to membership, and while the society of 7,000 represents a little over fifty per cent. of the entire profession of the state, there are certainly very many men who should belong and do not.

The honor list of county societies whose membership for 1912 is fully paid up is as follows: Chautauqua, Greene, Ontario, Orleans, Queens-Nassau, Schoharie, Sullivan, Tioga, Washington and Wayne.

The attention of the members of the House of Delegates is especially called to the report of the Committee on Revision of By-Laws, which will be found with the annual reports. This committee has spent much time and given much thought to the subject under consideration, and as good by-laws are very essential to the proper conduct of business and to the success of the society, it is earnestly hoped that the subject will be thoroughly studied by all before the meeting when the report is to be presented.

At the election held in November, the Borough of the Bronx by vote decided to become the County of the Bronx. The legality of this action has been submitted to the courts* and, upon the decision will rest the question of the admission of a new county society. The constitution provides

ARTICLE II.

SECTION 1. The membership of this Society shall include all members of county medical societies, now in affiliation with this Society, and all members of other county medical societies to which charters shall be granted by the House of Delegates pursuant to the By-Laws of this Society, and any member ceasing to be a member of a county medical society shall cease to be a member of this Society.

SEC. 2. The term county medical society as used in this Constitution shall be deemed to include all societies which may be organized and chartered by the House of Delegates.

SEC. 3. The membership of the Society shall be divided into eight district branches, as provided in the By-Laws.

Provision should be made for a medical society in the County of the Bronx, if a County, which shall be entitled to representation in the State Society, pass By-Laws, select a name and take such steps as law requires to be recognized as a constituent county society in accordance with the By-Laws, Chapter IX.

SEC. 8. Each county society may adopt a constitution and by-laws for the regulation of its affairs, provided that the same shall first be approved by the Council of this Society.

SEC. 9. The term county society as used in these By-Laws shall be deemed to include all societies which may be organized and chartered by the House of Delegates.

Your Secretary would recommend that the Council be empowered to arrange for the meeting and to see that this new society is formed in accordance with the Constitution and By-Laws of the State Society, and that proper delegates be elected to represent the society at the next annual meeting of the Medical Society of the State of New York in 1914.

The following delegates were given certificates to other societies during the year: Rhode Island Medical Society—Howard Fox, New York, and Brainerd H. Whitbeck, New York. Medical Society of New Jersey—William M. Leszynsky, New York.

The secretary desires to thank the officers, members of committees and of the society for their uniform courtesy and assistance during the past year.

Respectfully submitted,

WISNER R. TOWNSEND,
Secretary.

December 31, 1912.

* Decided in March by the Appellate Division, First Department, in favor of the legality of the County.

REPORT OF TREASURER.

ALEXANDER LAMBERT, *Treasurer*, In Account with THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Dr.	Cr.
CASH RECEIPTS, YEAR ENDING DECEMBER 31, 1912.	
To Balance, January 1st	\$10,608.33
“ Directory, 1911	\$430.50
“ Directory, 1912	2,287.10
“ Clerical Work	109.50
“ Interest on Deposits	381.62
“ Interest on Bonds	90.00
“ Sundry Receipts	75.95
“ Advertising	4,166.59
“ Subscription & Sales	213.74
“ Annual Dues, Arrears	39.00
“ Annual Dues, 1910	60.00
“ Annual Dues, 1911	861.00
“ Annual Dues, 1912	20,238.00
“ Annual Dues, 1913	210.00
	29,163.00
	\$39,771.33
CASH PAYMENTS, YEAR ENDING DECEMBER 31, 1912.	
By Annual Dues: Overpayments	\$12.00
Furniture and Fixtures	104.00
Traveling Expenses	\$419.35
Delegates A. M. A. Meeting.. ..	635.17
	1,054.52
Accountant	200.00
Carfare	22.62
Express	32.95
Treasurer's Bond	20.00
Exchange on Check	14.54
Sundry Petty Cash Disbursements.....	177.84
Framing Pictures, Ex-Presidents.....	73.30
Telephone	136.82
Stationery & Printing	256.63
Postage	350.95
Rent	900.00
Insurance	5.70
Committee on Legislation	114.50
Legal Expense	3,898.78
1911 Directory	190.62
1912 Directory	8,552.84
JOURNAL Expense	385.29
JOURNAL Salaries	1,754.96
JOURNAL Commissions	1,107.43
JOURNAL Publications	7,260.96
District Branches	518.84
Clerical Work	45.33
Salaries	2,067.83
Annual Meeting	1,197.05
Commission on Experimental Medicine..	107.25
Secretary	500.00
Interest on Bonds, deposited	90.00
	\$31,153.55
Balance in Guaranty Trust Co.....	8,617.78
	\$39,771.33

ANNUAL DUES, 1912.			
County.	Amt. Paid.	County.	Amt. Paid.
Albany	\$462.00	Onondaga	\$447.00
Allegany	111.00	Ontario	195.00
Broome	204.00	Orange	255.00
Cattaraugus	108.00	Orleans	93.00
Cayuga	174.00	Oswego	153.00
Chautauqua	228.00	Otsego	102.00
Chemung	174.00	Queens-Nassau ..	372.00
Chenango	108.00	Rensselaer	231.00
Clinton	126.00	Richmond	144.00
Columbia	96.00	Rockland	99.00
Cortland	81.00	St. Lawrence	153.00
Delaware	93.00	Saratoga	129.00
Dutchess	288.00	Schenectady	273.00
Erie	1,551.00	Schoharie	42.00
Franklin	135.00	Schuyler	48.00
Fulton	87.00	Seneca	69.00
Genesee	87.00	Steuben	177.00
Greene	78.00	Suffolk	270.00
Herkimer	180.00	Sullivan	63.00
Jefferson	186.00	Tioga	72.00
Kings	2,370.00	Tompkins	129.00
Lewis	48.00	Ulster	150.00
Livingston	105.00	Warren	93.00
Madison	108.00	Washington	99.00
Monroe	720.00	Wayne	102.00
Montgomery	129.00	Westchester	624.00
New York	7,170.00	Wyoming	96.00
Niagara	174.00	Yates	45.00
Oneida	441.00		
		\$20,547.00	

ADVANCE DUES, 1913.			
County.	Amt. Paid.	County.	Amt. Paid.
Chautauqua	\$6.00	Otsego	\$3.00
Chemung	6.00	Richmond	3.00
Columbia	3.00	St. Lawrence	3.00
Delaware	6.00	Schoharie	15.00
Dutchess	9.00	Steuben	9.00
Erie	54.00	Suffolk	27.00
Monroe	9.00	Warren	3.00
Queens-Nassau ..	27.00	Washington	9.00
Orange	3.00	Westchester	9.00
Orleans	3.00		
Oswego	3.00		\$210.00
DIRECTORY ACCOUNT, 1912.			
<i>Expenditures.</i>			
Postage	363.12		
Stationery & Printing	233.20		
Delivery	897.87		
County Clerk's fees	16.00		
Salaries	1,809.62		
Printing & Binding Directory.....	5,210.53		
		\$8,530.34	
<i>Income.</i>			
Advertisements	\$1,533.50		
Sales	1,234.10		
		2,767.60	
Cost of Directory			\$5,762.74

REPORT OF TREASURER.

JOURNAL ACCOUNT, YEAR ENDING DECEMBER 31, 1912.

<i>Income.</i>		<i>Expenditures.</i>	
Advertisements	\$4,617.87	Publication	\$7,260.96
Subscriptions & Sales	213.74	Expense	378.92
Doubtful Debts Collected	37.50	Salaries	1,754.96
	4,869.11	Commission	1,107.43
Cost of Journal	5,859.82	Discount	54.16
	<u>\$10,728.93</u>	Doubtful Debts charged off.....	172.50
			<u>\$10,728.93</u>

BALANCE SHEET: DECEMBER 30, 1912.

<i>Assets.</i>		<i>Liabilities.</i>	
Cash, Bank	\$8,617.78	Annual Dues, 1913	\$210.00
Petty	13.00	Accounts Payable	119.69
	<u>\$8,630.78</u>	Lucien Howe Prize Fund..	\$1,848.26
Accounts Receivable	663.57	Merrit H. Cash	963.05
Furniture & Fixtures	\$204.00		<u>2,811.31</u>
Directory Catalogue	250.00	Surplus, Jan. 1, 1912....	\$11,224.75
	454.00	Loss, 1912	1,306.09
Directory, 1912	500.00	Surplus Dec. 1, 1912....	<u>9,918.66</u>
Union Dime Savings Institution..	\$581.03		
Albany Savings Bank	230.28		
Title G. & T. Co., Mtg. Ctfs.....	2,000.00		
	<u>2,811.31</u>		
	<u>\$13,059.66</u>		<u>\$13,059.66</u>

I hereby certify that the above Balance Sheet is correct as shown by the books.

A. H. WICKS,
Certified Public Accountant,
302 Broadway, New York.

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1912.

<i>Income.</i>		<i>Expenditures.</i>	
Arrears of Dues	\$960.00	Expense	\$1,526.90
Dues, 1912	20,535.00	Telephone	129.77
Interest on Deposits	381.62	Stationery & Printing	256.63
Clerical Work	64.17	Postage	350.95
	<u>\$21,940.79</u>	Rent	900.00
Excess of Expenditures	1,306.09	Insurance	5.70
		Salaries	2,067.83
		Com. on Legislation	114.50
		Legal Expense	3,898.78
		Annual Meeting	1,187.05
		District Branches	518.84
		1911 Directory	60.12
		1912 Directory	5,762.74
		Secretary	500.00
		Com. on Experimental Medicine..	107.25
		Cost of JOURNAL.....	5,859.82
	<u>\$23,246.88</u>		<u>\$23,246.88</u>

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1911.

<i>Income.</i>		<i>Expenditures.</i>	
Arrears of Dues	\$792.00	Expense	\$1,618.82
Dues, 1911	20,163.00	Telephone	152.22
Interest on Deposits	400.00	Stationery and Printing	267.63
Clerical Work	60.73	Postage	500.90
Directory, 1909	52.50	Rent	900.00
Directory, 1910	220.49	Insurance	5.70
		Salaries	1,843.58
		Committee on Legislation	150.00
		Legal Expense	3,613.13
		Annual Meeting	509.46
		District Branches	272.12
		1911 Directory	5,951.02
		Secretary	500.00
		Cost of JOURNAL.....	4,553.29
			<u>\$20,837.87</u>
		Excess of Income	850.85
	<u>\$21,688.72</u>		<u>\$21,688.72</u>

REPORT OF THE COUNCIL.*To the House of Delegates:*

The Council of the Medical Society of the State of New York begs leave to present the following report:

During the past year meetings have been held on the following dates:

April 18th, in Albany. Minutes will be found in the *NEW YORK STATE JOURNAL OF MEDICINE*, Volume 12, No. 5, page 275.

May 3rd, in New York. Minutes will be found in Volume 12, No. 6, page 337.

December 6th, in Rochester. Minutes will be found in Volume 13, No. 2, page 109.

During the past year the secretary sent a letter to every county society in the state asking for data in regard to the subject of illegal practitioners in their counties. The following replies were received:

- 15 counties state that they have no illegal practitioners.
- 2 counties state that they have one illegal practitioner.
- 4 counties state that they have a few chiropractics, physio-therapists, druggists prescribing, etc.
- 2 counties state that they have four illegal practitioners.
- 1 county states that it has two or three illegal practitioners.
- 1 county states that it is impossible to even estimate the number (Erie).
- 1 county states that it has several hundred illegal practitioners, and that nineteen were prosecuted last year (Kings).
- 1 county states that it has ten or twelve illegal practitioners.

In New York County the medical society prosecuted eighty-five at an expenditure of about \$6,000. The secretary is unable to state to the Council what the expense might be if the matter were taken up for the entire state, but he has seen both the attorney for the county society and the attorney for the state society, and they are agreed that a central office to take charge of the work for the entire state, to employ detectives to go into strange communities, especially the smaller ones, would be a very expensive undertaking, and probably not as effective as if local talent were employed, and that if local lawyers and detectives were to be employed, they should be under the supervision of local county societies rather than under the supervision of the state. As a result of a discussion of the subject the Council decided upon the following statement:

"The Council believes that this subject is worthy of further investigation, and in view of the fact that conditions are different in all of the various counties, the suggestion is made that the entire subject be referred to a committee of three to be appointed at the next meeting of the

House of delegates to be held in Rochester, April 28, 1913."

A full report of the Committee on Publication is herewith appended, and for the expenses of the society the House of Delegates is referred to the annual report of the treasurer. All bills have been properly audited and the accounts examined and certified to by A. H. Wicks, a certified public accountant of the State of New York.

Respectfully submitted,
WISNER R. TOWNSEND,
Secretary.

December 31, 1912.

REPORT OF THE COMMITTEE ON PUBLICATION APPOINTED BY THE COUNCIL.

At a meeting of the Council held in Albany, April 18, 1912, the following Committee on Publication was appointed: Drs. S. W. S. Toms, Chairman; Floyd M. Crandall, Samuel E. Getty, Alexander Lambert and Henry G. Webster.

This appointment carried with it an authorization to the committee for the appointment of an editor for the *NEW YORK STATE JOURNAL OF MEDICINE*.

At the regular meeting of the committee held on April 23, 1912, at the offices of the Medical Society of the State of New York, 17 West 43rd Street, New York City, Dr. A. T. Bristow was again selected as editor for the ensuing year.

The publication of the *NEW YORK STATE JOURNAL OF MEDICINE* and the Medical Directory of New York, New Jersey and Connecticut constitute the duties of the Committee on Publication.

THE JOURNAL.

Owing to the success of the last annual meeting, held in Albany in April, the large number of papers presented to the various sections have taxed our abilities to provide space for publication in the pages of the State *JOURNAL* during the twelve months succeeding. It is hoped to have them all published, however, before the Rochester meeting next April.

In accepting advertisements for the *JOURNAL*, the rule is followed conforming to the requirements of the American Medical Association as adopted by the Council on Pharmacy and Chemistry, relating to the acceptance of drugs for internal medication. This compliance has restricted the advertising matter and materially lessened our income.

The cost of the *JOURNAL* for the year 1912 was \$5,859.82. As compared with 1911 this is an increase of \$1,306.53. This is due to the increase of 164 pages of reading matter over the preceding year and to the unusual number of cuts published. These latter, however, have added largely to the value of the *JOURNAL*, and as the tendency in all pub-

lications today is to illustrate the articles, this item of expense could not be cut down. For full details of the cost of the JOURNAL see the report of the treasurer. Eight thousand copies were issued monthly, which was an increase of 200 per month as compared with 1911, and added a cost of about \$120 per annum.

THE DIRECTORY.

The directory was issued during the month of October, 1912, and work on the next year's issue is already under way. The committee last year solicited suggestions for the directory which might be of benefit to the members, and in return we received a suggestion that all examiners in lunacy in the state should be given, as well as those registered in New York County. This request came too late for the 1912 directory, owing to the necessity of securing the list of names from Albany, which would require revision and checking up by the office force to secure the accuracy of location and eliminate deceased members who were not dropped from the Albany register. This complete list of examiners in lunacy will appear, however, in the 1913 directory.

For full details of the cost of the 1912 directory see the report of the treasurer. The net cost was \$5,762.74, as compared with \$5,951.02 for 1911. This decrease in cost was made despite the fact that eight pages were added to the book and 500 more directories printed. This is the lowest cost at which the directory has ever been published. It is also gratifying to note that there is an increase in the sales of over \$300 as compared with 1911.

The committee will be pleased to receive any further suggestions for the improvement of the book, and will give them careful consideration.

Respectfully submitted,

S. W. S. TOMS, *Chairman*,
FLOYD M. CRANDALL,
S. E. GETTY,
ALEXANDER LAMBERT,
HENRY G. WEBSTER.

December 31, 1912.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH.

To the House of Delegates:

The Committee on Public Health would respectfully report that it notes with pleasure the growing interest of physicians throughout the state in clinical laboratory diagnostics and their demand for local facilities for such work. It is the feeling of the committee that the state society should take an active part in endeavoring to procure legislation for the establishment of local laboratories at convenient points through-

out the state. The committee further feels that the state society might well send an annual communication to the legislature commending such of its actions as it can approve and recommending such further legislation as in its judgment may be deemed advisable.

But in view of the recent action of the governor, and the report of the special public health commission appointed by him "to receive suggestions and make recommendations as to public health laws and public health administration in this state," the committee feels that the time is not ripe for action on the part of the state society and a report of progress is therefore made.

Respectfully submitted,

JOSHUA M. VAN COTT, *Chairman*,
ALLEN A. JONES,
CHARLES STOVER.

December 31, 1912.

REPORT OF THE COMMITTEE ON LEGISLATION.

To the House of Delegates:

The Committee on Legislation have the honor to report: The legislative work of the committee during the session of 1912 was very much less arduous than it was in the year 1911, as the field of operation chosen by the opponents to scientific research by means of animal experimentation, and those opposed to our vaccination laws, was the assembly instead of the senate. There the chairman of your committee could give the bills his more immediate personal attention. There were three slightly different antivivisection bills introduced. Evidently the speaker wished to give these advocates a fair chance, not to say an advantage, as the bills were referred to three different committees, Codes, Ways and Means, and General Laws. He ignored the Committee on Public Health, to which such bills should reasonably be referred. This compelled those who were willing to oppose the bills before the committees to make three trips to Albany on different days. The Committee on Ways and Means and that on General Laws promptly reported the bills adversely. The reports were agreed to by the assembly, and they were killed. The Codes Committee by a unanimous vote decided not to report the bill referred to it. The two anti-vaccination bills went to the Committee on Public Health, and no further.

The bill establishing a State School of Sanitary Science at Cornell University passed both houses, but was again vetoed by Governor Dix. Bills were introduced on the following subjects:

To compel the hotels to furnish bed sheets at least nine feet in length so that they could be

turned over and engage germs that might be incubated in the quilts and coverlids.

To require all mattresses, pillows, etc., to bear a label showing the kind and quality of material used in their manufacture, whether new or second-handed, etc.

To compel the proprietors of public lavatories to furnish individual towels.

Forbidding any railroad company to permit to be discharged from any of its cars any solid or liquid excreta within any drainage area or water-shed, as designated by the State Commissioner of Health.

None of these passed the legislature; some of them should be enacted.

The two bills which became laws in which public-spirited medical men are most interested are Chapter 141, Laws of 1912, prohibiting medical schools from matriculating students who are deficient in any part of the educational requirements.

Chapter 445, which provides for the creation of a commission to examine, and if need be, to protect society by the sterilization of degenerates, perverts, insane and feeble-minded, so that the class which is now causing the largest item of expense which the state has to meet shall not be able to propagate their kind, which at the present time is multiplying far in excess of the normal population.

Two propositions have been presented to your committee as being proper subjects for legislation, neither of which is endorsed by the society:

First, that the medical laws should be amended so as to prohibit nurses from administering anesthetics.

Second, to provide that licensed physicians who violate the code of ethics by advertising miraculous cures, by consulting with illegal practitioners, etc., shall be disqualified.

Your committee holds to this idea. That the society will do better to exercise its influence and its energies in enforcing the laws heretofore enacted than in passing others to become dead letters. Illegal practitioners swarm all over the state; "they fool some of the people all of the time," gather in the shekels, snap their fingers at the profession, and no one interferes with them. The State Society will not undertake it; the agents of the county society cannot do it, and the district attorneys throughout the state will not undertake it.

Your committee suggests to the House of Delegates that a committee be appointed to formulate a method of procedure by which the laws already on the statute books may be enforced.

Respectfully submitted,

ROBERT P. BUSH, *Chairman*,
LEWIS K. NEFF,
CHARLES R. BARBER.

December 31, 1912.

REPORT OF THE COMMITTEE ON THE REGULATION OF THE INTRODU- TION OF MEDICAL EXPERT TESTI- MONY.

To the House of Delegates:

No bill was introduced in the legislature last year because the chairman of the State Bar Association committee, who seemed to have assumed full control of this matter, did not see fit to take it up.

A meeting of your committee was held at the Hotel Belmont and the question of further attempt was thoroughly discussed. It is known that the Michigan bill was declared unconstitutional, and bills in other states have met the same fate. The chairman was directed to consult a constitutional lawyer who knows how to draw a proper bill, and have one drafted for criminal cases only, meeting constitutional objections if possible.

This course is now being followed and your committee hopes to have a bill drafted that will stand the constitutional test, and make an effort to get it passed.

Your committee therefore begs leave to be continued until this method is tried.

Respectfully submitted,

DWIGHT H. MURRAY, *Chairman*,
EDWARD D. FISHER,
CHARLES L. DANA,
ALGERNON T. BRISTOW.

December 31, 1912.

REPORT OF THE COMMITTEE ON ARRANGEMENTS.

To the House of Delegates:

The Committee on Arrangements appointed by the chairman and confirmed by the council at its meeting on May 3, 1912, has spent much time in preparation for the coming meeting. Suitable halls have been secured and necessary arrangements made for the five sections appointed by the council. A scientific exhibit of unusual merit has been secured, and a commercial exhibit has been arranged which will at least provide for the expenses of the meeting. The arrangements for the previous meeting were successfully carried out by Dr. William J. Nellis, Chairman, Albany.

Respectfully submitted,

WESLEY T. MULLIGAN,
Chairman.

December 31, 1912.

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

To the House of Delegates:

In accordance with the by-laws, I beg to report that the Committee on Scientific Work, Dr. L. H. Neuman, Chairman, prepared in accordance with your instructions, a program for the annual meeting held in Albany, April 16, 17 and 18, 1912, arranged according to five sections, namely: Section on Medicine, Section on Surgery, Section on Diseases of the Nose, Throat, and Ear, Section on Public Health and Preventive Medicine, and Section on Mental and Nervous Diseases, Eugenics and Medical Expert Testimony.

It is proposed to pursue, with certain modifications, at the meeting to be held in Rochester the plan so successfully inaugurated last year. There will be five sections: Section on Medicine, Section on Surgery, Section on Nose, Throat, and Ear, Section on Obstetrics and Gynecology, and Section on Diseases of Children.

Respectfully submitted,

THOMAS J. HARRIS,
Chairman.

December 31, 1912.

REPORT OF THE COMMITTEE ON PRIZE ESSAYS.

To the House of Delegates:

This Committee, with the aid of a very complete memorandum received from our energetic Secretary, Dr. Townsend, think it well to present some facts relating to this very important subject.

Dr. Merrit H. Cash was born in the town of Wawayanda, in the County of Orange, in this State, on the 20th day of July, 1802. Besides being a man of prominence in medical matters, he represented his Assembly district in the State Legislature in 1834, 1835 and 1837, and was Chairman of the Committee of Ways and Means in 1837; helped to pass the bill incorporating the Albany Medical College; was President of the Medical Society of the County of Orange, and made a permanent member of the State Society in 1845; died in Wawayanda on the 26th day of April, 1861, in the 59th year of his age. To the Society in which he was so long interested he bequeathed the sum of \$500.

It will be noted that by various resolutions and the appointment of committees, as recorded in the transactions of the Society for 1862, 1863 and 1864, this legacy was properly acknowledged, and duly invested by the Treasurer of the Society.

In the transactions for 1863, page 410, Dr. James H. Armsby, of Albany, as Chairman, presented the following report:

"The committee appointed to report on the disposition of the legacy of the late M. H. Cash respectfully recommend that this legacy of \$500 be devoted to the establishment of a prize fund, the income thereof to be given annually, or every two years, as the Merrit H. Cash Prize, to the author of the best original essay on such medical or surgical subject as may be designated by a committee of the Society."

The first essay was awarded to Dr. A. N. Bell, of Brooklyn, and will be found in the transactions of 1864.

Then follows an interesting history of the appointing of committees, made up of the most eminent men of the Society, to select subjects for the essayists. "Competitors may send their essays to either of the Committee."

"In a sealed envelope should be the name of the author, accompanying the essay."

Further along: "Agreeable to the suggestion of the Secretary, and after consultation with other members of the Society, the committee have consented to present in their report a competition subject for the coming year, hoping that its early announcement will secure a wider competition."

"Competitors must be citizens of this State."

As early as 1865, on report of the committee, the Society voted approval of their action in not awarding the prize because "the essay before them does not rise to the standard demanded." Two conditions were now well settled—the one just mentioned, and the right of the committee to select subjects for competition. So that the recent amendment to the by-laws, stating the time in which the latter must act, seems very appropriate. As a result of some discussion, in 1865 it was decided that the prize will be limited to residents of New York State. And in 1867 it was Resolved, "That the competition for the Merrit H. Cash Prize be this year limited to members of the various county societies."

It is therefore the opinion of your committee that this prize "should be limited to members of the county societies of the State in addition to their being residents of the State, and should not be given out to anyone who is not a member of the State Society." The original committee felt that Dr. Cash meant to hold it within the Society membership.

From 1867 on, few prizes have been awarded, although at one time the society offered to increase the amount up to \$100. (It was afterwards decided that the society did not have the right to make such disposal of its funds.) Therefore, quite an addition of interest has accrued, which has been added to the principal. As a result of the committee's consultation with Mr. Lewis, the attorney for the society, we announce that the Merrit H. Cash Prize will be awarded every two years, beginning with the annual meeting of 1914; and that the prize will consist of \$100. It is possible the prize in time may exceed that amount.

The committee are of the opinion that in designating titles for the essay this action will not deter essayists or authors from selecting a subject of their own choice.

All essays must be typewritten or printed, designated by a proper motto, accompanied by a sealed envelope having on the outside the same motto, and containing the name and address of the writer.

EXTRACT FROM THE MINUTES OF THE MEETING
OF 1906.

The following letter was read from Dr. Lucien Howe of Buffalo:

Buffalo, N. Y., January 29, 1906.

Dr. Joseph D. Bryant, President of the Medical Society of the State of New York.

MY DEAR DOCTOR BRYANT:

The custom of offering prizes for original work, already established in our society, and so frequent in Europe, has always seemed to me of decided value. I have long thought it might be desirable to make the state society the trustee of another prize, and this centennial meeting seems to be an auspicious occasion for offering it. Accordingly you find inclosed a check for fifteen hundred dollars. If the society cares to accept this, it would be on the following conditions:

First.—The interest on this amount, or any which may be added to it, shall be used by the society for a prize, either in money or in the form of a suitable medal, for the best original contribution to our knowledge of some branch of surgery, preferably of ophthalmology.

Second.—This principal sum, together with all other amounts which may be added to it in any way, shall be kept separate and apart from any other funds of the society. No portion of the principal or of any addition to it shall be expended, and only the interest which accrues in one year shall be expended during that time.

Third.—The author or discoverer need not be a member of the Medical Society of the State of New York, but the communication shall be made first through its Committee on Prize Essays, and the data, methods and everything relating to the communication shall remain the property of that society, to be made public as it may direct.

Fourth.—The method of presenting the communication and of awarding the prize shall be substantially the same as that followed in regard to prize essays. That is to say, the communication shall be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope having on the outside the same motto or device, and containing the name and address of the writer. If, in any year, the committee does not deem any essay or communication which is offered worthy of the prize, then it shall not be awarded, and the

interest for that year shall be added to the principal.

It is with some hesitation that so small a sum is offered to the society, but if the prize is awarded only occasionally, as has proved to be the case with the one already established, the principal will increase slowly to many times the original amount. Therefore, as the nucleus of a much larger sum, this may ultimately serve to express in a slight degree our appreciation of original contributions to medical science.

Very truly yours,

LUCIEN HOWE.

Moved, seconded and carried:

Resolved, That the House of Delegates accept with gratitude the generous gift of Dr. Lucien Howe, and recommend to the society that the fund be known as the Lucien Howe Prize Fund.

In reference to this generous prize from Dr. Howe, and to which sufficient interest has been added to the principal, the committee feel that \$100 or whatever interest may have accumulated the previous year can be awarded annually.

It will be observed Dr. Howe states "that the prize is to be given for the best original contribution to our knowledge of some branch of surgery, preferably ophthalmology." The committee feel that while they believe it is in their power to designate titles, keeping within the meaning of the gift, yet would prefer to hear further from Dr. Howe regarding his wishes.

Your committee would most earnestly invite contributions to these prize funds. The larger the income the greater, undoubtedly, will be the interest manifested.

Respectfully submitted,

A. VANDERVEER, *Chairman*,
EDWARD D. FISHER,
JOHN F. W. WHITBECK,
Committee on Prize Essays.

December 31, 1912.

**REPORT OF THE COMMITTEE ON
EXPERIMENTAL MEDICINE.**

To the House of Delegates:

The Committee on Experimental Medicine begs leave to submit the following report of its work during the year 1912.

The Committee have continued its vigilance and its activities in serving the profession and the public by doing their utmost to safeguard the beneficent work of experimental medicine. To this end they have kept continuous and careful watch of the activities of the antivivisectionists in the legislature and before the public, and have tried to make clear to the legislators and to the people the folly, the injustice, and the great harmfulness of hampering as some persistently seek to do the splendid advances of medical science.

In January, 1912, a bill was introduced into the assembly by Mr. Barnes entitled "An act to create a commission to investigate the present condition and extent of the practice of vivisection in this State and to report what changes, if any, in the existing laws are desirable to protect animals from unnecessary suffering in this practice without unreasonably interfering with legitimate scientific research, and making an appropriation therefor." A hearing on this bill before the Committee on Ways and Means was held on February 14th and was attended on the part of this Committee by Drs. L. K. Neff, James Ewing, William H. Park, Frederic S. Lee, Alexis Carrell, Peyton Rous and W. A. Howe. Speeches against the bill were made by Messrs. Neff, Park, Ewing, Lee and Howe. Subsequently the Committee reported to the Assembly its disapproval of the bill and this action was concurred in by the Assembly.

In January, 1912, a bill was introduced into the Assembly by Mr. Brooks and into the Senate by Mr. Burd entitled, "An act to prevent cruelty by conferring upon the board of regents of the University of the State of New York the power of supervision of experiments on living animals." It was referred to the Assembly Committee on General Laws and to the Senate Committee on Public Education. At a hearing on this bill before the Assembly Committee held on February 27th, Drs. L. K. Neff, William H. Park, Frederic S. Lee, Peyton Rous, W. A. Howe and T. Wood Clarke of Utica spoke against the bill. The Committee reported to the Assembly its disapproval of the bill, and this action was concurred in by the Assembly.

In February, 1912, a third bill was introduced into the Assembly by Mr. Barnes, entitled, "An act to amend section one hundred and eighty-five of article sixteen of chapter eighty-eight of the penal laws of the State of New York." The hearing on this bill before the Assembly Committee on Codes held on March 13th, was attended on the part of the Committee on Experimental Medicine by Mr. J. D. Greene and Drs. Ewing and Lee, all of whom spoke against the bill. The Committee reported to the Assembly its disapproval of the measure. This completed the efforts of the anti-vivisectionists to obtain legislation during that session.

The first and third of the above bills were advocated by Mr. F. P. Bellamy, of Brooklyn, and his friends. The second bill was advocated by the New York Anti-Vivisection Society.

In past years it has been the custom of legislative committees not to make formal report to the Assembly of their disapproval of anti-vivisection bills, even when such bills were disapproved. The prompt, positive vote of dis-

approval in all of the three cases of the past year, with the subsequent report to the Assembly and in two cases the formal concurrence of the Assembly in the report are evidence that the committees have felt less sympathy than ever before with anti-vivisection measures. The victory for scientific medicine has been correspondingly greater. It should be noted that the American Society for the Prevention of Cruelty to Animals, which in 1911 sent several representatives to the hearings, and took a prominent stand in favor of anti-vivisection, sent no representatives in 1912 and did not indicate, in any public way at least, its opposition to animal experimentation. The speakers on the antivivisection side at the three hearings were few and were evidently either paid agents or the usual antivivisection agitators. It is significant that no hearing was held on the "Burd-Brooks" bill before a Senate committee and no movement whatever was made regarding it in the Senate beyond its introduction. Senator Bayne, who in 1911 was a very active leader and partisan of the anti-vivisectionists, took no part whatever in the agitation of 1912.

During a portion of the year, the New York Anti-Vivisection Society maintained a lecturer, Mr. W. R. Bradshaw, who travelled about the state and lectured in cities and villages under local co-operation, especially of the granges. His lecture consisted of an utter misrepresentation of modern medicine and at its close he was accustomed to present a resolution in favor of the legislative bill of his society. On several occasions he was effectively opposed by local members of the State Society. The matter was taken up by the Committee on Experimental Medicine, and its chairmen and secretary printed in the April, 1912, number of the *State Journal of Medicine* an effective protest against the methods of the Anti-Vivisection Society, entitled, "The Duty of the Physician toward the Anti-Vivisection Movement." Reprints of this article were sent in abundance to the chairmen of the county medical societies, with instructions to circulate these among physicians together with a large quantity of literature dealing with the various aspects of medical research. Similar literature has also been furnished to different members of the profession who have volunteered to assist in combating the pernicious activities of the Anti-Vivisectionists.

The committee believes that its continued vigilance and activity in these various ways has been of material service in safeguarding the humane work of medical experimenters. It earnestly hopes that the members of the profession throughout the State will use their utmost efforts to keep clearly before the minds of the public and especially of the legislators

the folly and injustice of hampering in any way the magnificent work which medical research is doing to prevent and relieve the suffering of mankind and incidentally of dumb animals.

Respectfully submitted,

WILLIAM H. PARK,
Chairman.

JOHN S. THACHER,
Secretary.

December 31, 1912.

REPORT OF THE COMMITTEE ON REVISION OF BY-LAWS.

To the House of Delegates:

The committee appointed at the last annual meeting on a revision of the by-laws begs herewith to present its report:

The original by-laws are printed in ordinary type; the proposed amendments or changes are printed in italics and follow the original sections which it is suggested be amended.

It has been the aim of the committee to make as few changes as possible, and those are based upon experience of over seven years' work under the present by-laws.

The present constitution can only be amended by an introduction of the proposed amendments this year and action in 1914. The by-laws can be amended at the next meeting in accordance with Chapter XI., as follows:

"These by-laws shall not be amended except by a majority vote of all the delegates present at a meeting of the house of delegates, nor unless ten days' notice of the meeting and of the proposed amendment shall have been given to each member of the house of delegates."

Respectfully submitted,

EGBERT LE FEVRE, *Chairman*
WESLEY T. MULLIGAN,
WENDELL C. PHILLIPS,
WISNER R. TOWNSEND,
ALBERT VANDER VEER,

Committee on Revision of By-Laws.

December 31, 1912.

CONSTITUTION.

ARTICLE I.

PURPOSES OF THE SOCIETY.

The purposes of the Society shall be to federate and bring into one compact organization the medical profession of the State of New York; to extend medical knowledge and advance medical science; to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members, and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of State medicine.

ARTICLE II.

MEMBERSHIP.

SECTION 1. The membership of this Society shall include all members of the county medical societies now in affiliation with this Society, and all members of other county medical societies to which charters shall be granted by the House of Delegates pursuant to the By-Laws of this Society, and any member ceasing to be a member of a county medical society shall cease to be a member of this Society.

SEC. 2. The term county medical society as used in this Constitution shall be deemed to include all societies which may be organized and chartered by the House of Delegates.

SEC. 3. The membership of the Society shall be divided into eight district branches, as provided in the By-Laws.

ARTICLE III.

OFFICERS.

SECTION 1. The officers of the Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and one Councilor from each District Branch. They shall be elected annually by ballot for the term of one year, and the majority of the votes cast shall elect. The President, Vice-President, Secretary and Treasurer shall be elected by the House of Delegates. Each Councilor shall be elected by the District Branch of the district in which he resides and shall be the President thereof.

Section 1. The officers of the Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and one Councilor from each District Branch. They shall be elected annually by ballot for the term of one year, except the Councilors, and the majority of the votes cast shall elect.

The President, Vice-President, Secretary and Treasurer shall be elected by the House of Delegates. At the first election in the District Branch societies hereafter held, the Councilors for the First, Second, Third and Fourth District Branches shall be elected for the term of two years. The Councilors for the Fifth, Sixth, Seventh and Eighth District Branches shall be elected for one year, and thereafter all Councilors shall be elected for the term of two years by the District Branch of the District in which they reside and shall be the respective Presidents thereof.

SEC. 2. All officers and the elected members of the standing committees shall assume office at the close of the annual meeting of the Society.

SEC. 3. No delegate elected to the House of Delegates shall be a candidate for office in the Society until after the expiration of the term for which he shall have been elected a delegate, and no person shall be elected to any office in the Society who shall not have been a member of the Society for the two years immediately preceding the date of his election.

ARTICLE IV.

HOUSE OF DELEGATES.

The House of Delegates shall be the legislative body of the Society and shall be charged with the general management, superintendence and control of the Society and its affairs, and shall have such general powers as may be necessarily incident thereto. It shall have the power to suspend or otherwise discipline county societies. It shall be composed of the officers of the Society and of the chairmen of standing committees, who shall be ex-officio members thereof, and of the delegates elected to the House of Delegates by county societies in affiliation with the Society. Each county society shall be entitled to elect to the House of Delegates as many delegates as there shall be state assembly districts in that county at the time of the election; except that each county society shall be entitled to elect at least one delegate; and except that whenever at the time of election, the membership of a county society shall include members from an adjoining

county or counties in which there shall be no county society in affiliation with this Society, such county society shall be entitled to elect, from among such members, as many additional delegates as there are assembly districts in the county or counties so represented in its membership.

The House of Delegates may provide for a division of the scientific work of the Society into appropriate sections, and for the organization of the District Branches; and it shall have such additional powers and duties not inconsistent with this Constitution as the By-Laws may authorize or prescribe. It may adopt rules and regulations for its own government and for the administration of the affairs of the Society, not repugnant to the Constitution and By-Laws of the Society; and it may delegate to the Council such power and authority as may be necessary to the efficient administration of the affairs of the Society, while the House of Delegates shall not be in session.

ARTICLE V.

COUNCIL.

The Council shall be the executive body of the Society. It shall consist of the officers of the Society and of the chairmen of standing committees. The Council shall be the Finance Committee of the Society and shall have such additional powers and duties as the By-Laws may prescribe. It may adopt rules and regulations for its own government and for the administration of the affairs of the Society within its control not repugnant to the Constitution and By-Laws of the Society or to the rules and regulations which may be adopted by the House of Delegates.

ARTICLE VI.

MEETINGS.

SECTION 1. The Medical Society of the State of New York may, from time to time, change the place and day of holding its annual meeting to such other place and day in the year as may be more convenient, by a two-thirds vote of all the members of the House of Delegates of said Society present at any anniversary or annual meeting of said Society, provided, that no such change shall be made unless notice of the intention to change the time and place of such annual meeting shall have been first given at a previous regular annual meeting. An entry in the minutes of said Society of notice of such intention to change the time and place of the annual meeting, and on entry in such minutes of the vote taken upon any motion made pursuant to any such notice, shall be prima facie evidence of such notice, motion, and the vote had thereon respectively. *Chapter 213 of the laws of 1909.*

SEC. 2. Intermediate stated meetings may be held at such time and place as the House of Delegates may appoint.

SEC. 3. The notices of the annual, regular and special meetings of the Medical Society of the State of New York, its House of Delegates, Council and Censors, shall state the date, place and hour, and shall be mailed in securely postpaid wrapper to each member, at least ten days before said meeting. The affidavit of mailing by the Secretary of the Society to the last recorded address of the member shall be deemed sufficient proof of the service of such notice upon each and every member for any and all purposes.

ARTICLE VII.

FUNDS.

Funds shall be raised by a per capita assessment on each county society and the amount thereof shall be fixed by the House of Delegates. Funds may also be raised by voluntary contributions, by the sale of the publications of the Society, and in any other manner approved by the House of Delegates. No funds of the Society shall be appropriated for any purpose except pursuant to a resolution of the Council.

FUNDS.

Section 1. Funds shall be raised by an annual per capita assessment on each county society at a uniform per capita rate throughout the State. Funds may also be raised by voluntary contributions, by the sale of the publications of the Society, and in any other manner approved by the House of Delegates. No funds of the Society shall be appropriated for any purpose except by authority of a resolution of the Council, nor shall any indebtedness be incurred by officers, members of committees or members of the Society until the same shall have been approved by the Council.

Sec. 2. The State annual per capita assessment shall be \$3.00 and shall be collected by the county treasurers at the same time and as part of the county dues, and shall be remitted to the State Treasurer by the treasurer of each county society on or before the first day of June of each year.

ARTICLE VIII.

REFERENDUM.

SECTION 1. At any annual or stated meeting of the Society a majority of the members present may order a general referendum on any question in accordance with such general regulations respecting the manner of submission as the House of Delegates may prescribe. Members of the Society may vote thereon by mail or by roll call in open meeting. The poll on the question shall be closed at the expiration of ten days after the general submission; and if the members voting shall comprise a majority of all the members of the Society, a majority of such vote shall determine the question and be binding on the House of Delegates.

SEC. 2. The House of Delegates may voluntarily, by the vote of a majority of its members present at any meeting, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

ARTICLE IX.

AMENDMENTS.

No article of this Constitution shall be amended except by a two-thirds vote of the delegates present at any annual meeting, nor unless notice of the proposed amendment shall have been given at a previous annual meeting and shall have been published twice during the year in the official bulletin or journal of the Society, or sent by order of the House of Delegates to each county society in affiliation with the Society at least two months before the meeting at which final action shall be taken thereon.

BY-LAWS.

CHAPTER I.

MEMBERSHIP.

SECTION 1. A copy of the roster of members of a county society, certified by the secretary of that society to be correct, shall be prima facie evidence of their right to membership in this Society; but the delegates of a county society which is in default in the payment of any dues or assessments imposed by the House of Delegates or by any county society which shall be under sentence of suspension imposed by the House of Delegates, shall not be entitled to sit in the House of Delegates during the continuance of such default, or suspension; nor shall any person who is under sentence of suspension from a county society be entitled to exercise any of the rights or privileges of membership in this Society during the period of his suspension.

RETIRED MEMBERSHIP.

Section 2. Members in good standing who are seventy years of age or over may, by a majority vote of the House of Delegates present and voting at any annual meeting, become retired members. Applicants for retired membership must be approved and endorsed by

the President and Secretary of the County Society to which they belong, and the application must be sent to the Secretary of the State Society in time for presentation at the first meeting of the House of Delegates. Retired members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded other rights or privileges of membership, nor be subject to assessments.

HONORARY MEMBERSHIP.

Sec. 3. *Honorary membership may be conferred upon distinguished physicians residing outside of the State of New York at any annual meeting, by a two-thirds vote of the delegates present and voting, provided the nomination has been made at a previous annual meeting. All such nominations must be endorsed by three members of the Society and forwarded to the secretary in time for presentation at the first meeting of the House of Delegates. Honorary members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded other rights or privileges of membership, nor be subject to assessments.*

Honorary membership created by this section shall include the list of honorary members already enrolled.

CHAPTER II.

MEETINGS.

SECTION 1. Each member in attendance at the annual session of the Society shall enter his name and the name of his county society in the register to be kept by the Secretary of the Society for that purpose. No member shall take part in any of the proceedings at an annual session until he shall have complied with the provisions of this section.

SEC. 2. All registered members may attend and participate in the proceedings and discussions of the general meetings of the Society and of the sections.

SEC. 3. The following shall be the order of business at all general meetings of the Society:

1. Calling the Society to order.
2. Address of welcome by the Chairman of the Committee on Arrangements.
3. Reading the minutes of the last meeting.
4. Reports of special committees.
5. Special addresses.
6. President's address.
7. Reading and discussion of papers.
8. Miscellaneous business.

SEC. 4. Special meetings of the Society or of the House of Delegates shall be called by the President upon the request of twenty delegates or of fifty members; and in case of the failure, inability or refusal of the President to act, such meetings may be called by a notice thereof subscribed by twenty delegates, or fifty members.

Section 4. Special meetings of the Society shall be called by the President upon the request of one hundred members; and in case of the failure, inability or refusal of the President to act, such meetings may be called by a notice thereof subscribed by one hundred members.

Sec. 5. Special meetings of the House of Delegates shall be called by the President upon the request of fifty delegates; and in case of the failure, inability or refusal of the President to act, such meetings may be called by a notice thereof subscribed by fifty delegates.

CHAPTER III.

HOUSE OF DELEGATES.

SECTION 1. The House of Delegates shall meet annually in the evening of the day before the annual meeting of the Society. It may adjourn from time to time as may be necessary to complete its business, providing that its meetings shall conflict as little as possible with the annual meeting of the Society.

SEC. 2. Thirty delegates shall constitute a quorum.

SEC. 3. The House of Delegates shall make careful

inquiry into the condition of the profession in each county of the State, and shall have authority to adopt such methods and measures not in conflict with the Constitution and By-Laws of the Society as it may deem most efficient for building up and increasing the interest in such county societies as already exist; for organizing the profession in counties where societies do not exist; for organizing district branches, and for protecting the members of the Society against suits for alleged malpractice.

SEC. 4. It shall elect delegates to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, and it may elect or appoint such other delegates as in its judgment the interests of the Society may require, and it shall provide for the issue of credentials to all delegates.

SEC. 5. It shall upon application provide for the issue of charters to county societies in affiliation with the Society, and it shall hear and determine all appeals to this Society from the decisions of county medical societies by any member of any county medical society, or applicant for membership to such society feeling aggrieved at the action of said society.

Section 5. It shall upon application provide for the issue of charters to county societies in affiliation with the Society, and it shall hear and finally determine all appeals taken from decisions of the Board of Censors.

SEC. 6. It shall have authority to appoint committees for special purposes from among members of the Society. Such committees shall report to the House of Delegates, and may be present at and participate in the debates on their reports.

SEC. 7. It shall have authority to organize the physicians of two or more sparsely settled and adjoining counties into societies to be suitably designated so as to distinguish them from District Branches; and the societies so organized shall be entitled to all rights and privileges of county societies and the members thereof to the rights and privileges of members of county societies.

SEC. 8. The following shall be the order of business at the meetings of the House of Delegates.

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of the minutes of the previous meeting.
4. President's report.
5. Annual report of the Council.
6. Report of the Secretary.
7. Report of the Treasurer.
8. Reports of standing committees.
9. Reports of special committees.
10. Unfinished business.
11. New business.

SEC. 9. The officers and committees of the Society to be elected by the House of Delegates shall be elected at an adjournment of the annual meeting of the House of Delegates, which adjourned meeting shall be held at a convenient hour on the first day of the annual meeting of the Society.

Section 9. The officers and committees of the Society to be elected by the House of Delegates shall be elected at an adjournment of the annual meeting of the House of Delegates, which adjourned meeting shall be held at a convenient hour on the first day of the annual meeting of the Society. No member shall be eligible for any office, or entitled to vote for any officer or delegate who is in arrears for county dues and State per capita assessment.

Sec. 10. Method of Holding Elections.—All elections shall be by ballot, and a majority of the votes cast shall be necessary to elect. In case no nominee receives a majority of the votes on the first ballot, the nominee receiving the lowest number of the votes shall be dropped and a new ballot taken. This procedure shall be continued until one of the nominees receives a majority of all the votes cast, when he shall be declared elected.

In case no delegate or alternate for the American Medical Association receives on the first ballot a majority of the votes, the nominees shall be declared elected in the order of the highest number of votes received, until the allotted number shall have been chosen. In case of a tie vote for delegate or alternate a new ballot shall be taken.

CHAPTER IV.

COUNCIL.

SECTION 1. The Council shall meet at the close of the annual session of the Society, to organize for the ensuing year.

It shall meet once during the months of May and December of each year, the time and place to be selected by the President, and it shall meet at such other times as occasion may arise, upon the request in writing of five members of the Council, or upon the call of the President.

SEC. 2. Seven members shall constitute a quorum.

SEC. 3. The Council shall provide for and superintend all publications and their distribution, and shall have authority to appoint an editor and such assistants as it may deem necessary. All moneys of the Society received by the Council shall be paid to the Treasurer of the Society. It shall audit the annual accounts of the Treasurer and Secretary and other agents of the Society, and present a statement of the same in its annual report to the House of Delegates. The report shall also specify the character and cost of all publications of the Society during the year, and the amount of all property belonging to the Society under its control. The Council shall be empowered to fill any vacancies which may occur in any elective position.

Section 3. The Council shall provide for and superintend all publications and their distribution, and shall have authority to appoint an editor and such assistants as it may deem necessary. All moneys of the Society received by the Council shall be paid to the Treasurer of the Society. The Council shall audit the annual accounts of the Treasurer and Secretary and other agents of the Society, and present a statement of the same in its annual report to the House of Delegates. The report shall also specify the character and cost of all publications of the Society during the year, and the amount of all property belonging to the Society under its control. The Council shall be empowered to fill any vacancies which may occur in any elective or appointive office. The Council shall also have general supervision of all arrangements for the Annual Meeting.

SEC. 4. The following shall be the order of business at meetings of the Council:

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of minutes and communications from the Secretary.
4. Communications from the Treasurer.
5. Communications from the chairmen of standing committees.
6. Unfinished business.
7. New business.

CHAPTER V.

CENSORS.

SECTION 1. The President, Secretary and the District councilors shall be the Board of Censors of the Society until others shall be elected to fill their places, and shall hear and determine all questions involving the rights and standing of members, whether in relation to other members, to the county societies, or to this Society, except such as shall be heard and determined by the House of Delegates. All questions of an ethical nature brought before the House of Delegates, or the general meeting of the Society, shall be referred to the Censors, who shall report their findings thereon to the House of Delegates.

Section 1. The President, Secretary and the District

councilors shall be the Board of Censors of the Society. The Board of Censors shall hear and determine all appeals from the decisions of county societies which may involve the rights and standing of members whether in relation to one another, or to county societies, or to this Society.

CHAPTER VI.

DUTIES OF OFFICERS.

SECTION 1. The President or one of the Vice-Presidents shall preside at all meetings of the Society, the House of Delegates, the Council and the Censors. The President shall appoint all committees not otherwise provided for. He shall deliver an address at the annual meeting of the Society, and he shall perform such other duties as custom and parliamentary usage may require. He shall be ex-officio a member of all standing committees.

SEC. 2. The Vice-Presidents shall assist the President in the discharge of his duties, and in his absence the Vice-President next in numerical order shall perform his duties. In the event of the President's death, resignation, removal, incapacity or refusal to act, the Vice-President next in numerical order shall succeed him, and the other Vice-Presidents advanced in order.

SEC. 3. The Secretary shall attend all meetings of the Society, the House of Delegates, the Council and the Censors, and shall keep minutes of their respective proceedings in separate records. He shall be the custodian of the seal of the Society and of all books of record and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep an account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members at all sessions of the Society. With the aid and cooperation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the Councilors in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official correspondence notifying members of meetings, officers of their election and committees of their appointment and duties. He shall affix the seal of the Society to all credentials issued to members of the Society elected or appointed by the House of Delegates and to such other papers and documents as may require the same. He shall make an annual report to the House of Delegates. He shall supply each county society with the necessary blanks for making their annual reports to this Society. Acting under the direction of the Committee on Scientific Work, he shall prepare and issue all programs. The amount of his salary shall be fixed by the Council. He shall be ex-officio a member of all standing committees.

SEC. 4. The Treasurer shall keep accurate books of accounts of all moneys of the Society which he may receive, and shall disburse the same when thereunto duly authorized by the Council; but all checks drawn by the Treasurer upon the funds of the Society shall be countersigned by the President, or by the Secretary of the Society. He shall give security for the faithful performance of his duties, which shall be approved and retained by the President, and he shall make an annual report to the House of Delegates. The Treasurer shall be a trustee of the Merrit H. Cash fund. His salary shall be fixed by the Council.

Section 4. The Treasurer shall keep accurate books of accounts of all moneys of the Society which he may receive, and shall disburse the same when duly authorized by the Council; but all checks drawn by the Treasurer upon the funds of the Society shall be countersigned by the President or by the Secretary of the Society. He shall give security for the faithful performance of his duties, which shall be approved and placed in the custody of the President. He shall make an annual report to the House of Delegates. The

Treasurer shall be a trustee of the Merrit H. Cash fund, and Lucien Howe Fund, and such other special funds as may be established. His salary shall be fixed by the Council.

SEC. 5. Each District Councilor shall visit the counties of his district at least once a year. He shall make an annual report of his work and of the condition of the profession in each county in his district at the annual session of the House of Delegates. The necessary traveling expenses incurred by each councillor in the line of his duties as herein defined may be allowed by the Council on a proper itemized statement; but this shall not be construed to include his expenses in attending the annual session of the Society.

CHAPTER VII.

STANDING COMMITTEES.

SECTION 1. The following shall be the standing committees of the Society:

- A Committee on Scientific Work.
- A Committee on Legislation.
- A Committee on Public Health.
- A Committee on Arrangements.

There shall also be such other standing committees as the House of Delegates may determine to be necessary.

SEC. 2. The Committee on Scientific Work shall consist of three members, including the Chairman, and shall determine the character and scope of scientific proceedings of the Society for each session, subject to the instructions of the House of Delegates. Thirty days prior to each annual session it shall prepare and forward to the Secretary a program announcing the order in which papers, discussions and other business shall be presented.

COMMITTEES.

Section 1. Classification of Committees. Committees shall be classified as a. Standing Committees. b. Reference Committees. c. Special Committees.

Sec. 2. The following shall be the standing committees of the Society:

- A Committee on Scientific Work.*
- A Committee on Legislation.*
- A Committee on Public Health.*
- A Committee on Arrangements.*
- A Committee on Medical Research.*

Sec. 3. The Committee on Scientific Work shall consist of the Chairman, a member to be appointed by the President of the Society and approved by the Council, and the Chairman of the different sections. It shall hold meetings and prepare the necessary programs for the annual meeting of the Society and for such other special meetings as may be designated by the House of Delegates. It shall forward programs in ample time for publication, and not later than thirty days before the annual session shall send a completed program to the Secretary for the printing of the final program.

SEC. 4. The Committee on legislation shall consist of three members, including the Chairman. It shall keep in touch with professional and public opinion. Under the direction of the House of Delegates it shall represent the society in procuring the enforcement of the medical laws of the State in the interest of public health and of scientific medicine, and in procuring the enactment of such medical laws as will best secure and promote the welfare of the whole people.

SEC. 5. The Committee of Public Health shall consist of three members, including the Chairman. It shall report upon and present to the Society such subjects as may seem to the committee to be of special importance in their relation to the public health.

SEC. 6. The Committee on Arrangements shall consist of eight members, including the Chairman. It shall provide suitable accommodations for the meeting places of the Society and of the House of Delegates. Council and Censors, and shall have general charge of the arrangements for all meetings. The Chairman of the committee shall report an outline of the arrangements

to the Secretary for publication in the program, and shall make such additional announcements during the session as occasion may require.

Section 7. *The Committee on Medical Research shall consist of the Chairman and one member for each 200 or fraction thereof, of the membership of the eight District Branches of the Medical Society of the State of New York. It shall adopt such measures as may be necessary, to instruct the public and the profession in the desirability of animal experimentation and shall use all honorable means to oppose such bills as may be presented to the Legislature with the view of limiting or restricting scientific progress. In legislative work it shall act in cooperation with the Committee on Legislation.*

SEC. 8. The Chairman of all Standing Committees shall be elected by the House of Delegates, unless otherwise provided for in the By-Laws. The remaining members may be elected by the Council at the recommendation of their respective chairmen.

REFERENCE COMMITTEES.

Sec. 8. a. Immediately after the organization of the House of Delegates at each annual session the President shall appoint from among the members present such committees as may be deemed expedient by the House of Delegates. Each committee shall consist of five members, unless otherwise provided, to be appointed by the President. These committees shall serve during the session at which they are appointed.

b. To the appropriate committee shall be referred resolutions, measures and propositions presented to the House of Delegates before final action shall be taken, unless otherwise unananimously ordered by the House of Delegates.

c. Each reference committee shall, as soon as possible after the adjournment of each meeting, or during the meeting, if necessary, take up and consider such business as may have been referred to it, and shall report on the same at the next meeting, or when called on to do so. Three members shall constitute a quorum.

SPECIAL COMMITTEES.

Sec. 9. a. Special Committees may be created by the House of Delegates to perform the special functions for which they are created. They shall be appointed by the officer presiding over the meeting at which the committee is authorized, unless otherwise ordered by the House of Delegates.

b. The Committee on Prize Essays shall consist of three members including the chairman. Its duty shall be to receive all essays offered in competition for prizes which may be offered by this Society.

The Committee shall make all necessary rules and regulations for the award of prizes subject to the terms of the deeds of gift, and shall report the result at the next annual meeting of the House of Delegates. They shall give notice through the Society's publications or by other methods within thirty days after their appointment, of the amount of the prize essays and when the essays shall be submitted to the Committee.

Members of the Committee on Prize Essays shall be elected by the House of Delegates for the term of two years.

MEMBERSHIP OF COMMITTEES.

Sec. 10. Any member of the Society shall be eligible to serve on Standing or Special Committees. All members of committees who are not members of the House of Delegates shall have the right to present their reports in person to the House of Delegates and to participate in the debate thereon, but shall not have the right to vote.

CHAPTER VIII.

DISTRICT BRANCHES.

SECTION 1. The First District Branch shall comprise the members of the medical societies of the Counties

of New York, Westchester, Rockland, Putnam, Orange and Dutchess.

The Second District Branch shall comprise the members of the medical societies of the Counties of Kings, Queens, Nassau, Suffolk and Richmond.

Section 1. The First District Branch shall comprise the members of the medical societies of the Counties of New York, Westchester, Rockland, Putnam, Orange, Dutchess and Richmond.

The Second District Branch shall comprise the members of the medical societies of the Counties of Kings, Queens, Nassau and Suffolk.

The Third District Branch shall comprise the members of the medical societies of the Counties of Albany, Rensselaer, Schoharie, Greene, Columbia, Ulster and Sullivan.

The Fourth District Branch shall comprise the members of the medical societies of the Counties of St. Lawrence, Franklin, Clinton, Essex, Hamilton, Fulton, Montgomery, Schenectady, Saratoga, Warren and Washington.

The Fifth District Branch shall comprise the members of the medical societies of the Counties of Onondaga, Oneida, Herkimer, Oswego, Lewis, Madison and Jefferson.

The Sixth District Branch shall comprise the members of the medical societies of the Counties of Otsego, Delaware, Chenango, Cortland, Tompkins, Schuyler, Chemung, Tioga and Broome.

The Seventh District Branch shall comprise the members of the medical societies of the Counties of Monroe, Wayne, Cayuga, Seneca, Yates, Ontario, Livingston and Steuben.

The Eighth District Branch shall comprise the members of the medical societies of the Counties of Erie, Niagara, Orleans, Genesee, Wyoming, Allegany, Cattaraugus and Chautauqua.

Sec. 2. Each District Branch shall elect annually a President, a Vice-President, a Secretary, and a Treasurer.

Sec. 3. The President of the District Branch shall be the Councilor for that branch.

Sec. 4. Each District Branch may adopt a constitution and by-laws for its government, provided that the same shall first be approved by the Council of the Society.

CHAPTER IX.

SECTIONS.

Section 1. The Sections designated by the House of Delegates shall each annually elect a Chairman and Secretary provided that each Section may elect its Secretary to serve a longer time at its discretion.

Sec. 2. The Chairmen of the various sections shall be members of the Committee on Scientific Work.

Sec. 3. The election of officers of sections shall be the first order of business of the morning meeting of the second day of each annual session. To participate in the election of any section a member must be registered with such section and must have recorded his name and address in the Section registry book.

Sec. 4. Each section shall hold its meetings at such times as designated by the Committee on Scientific Work.

CHAPTER X (formerly CHAPTER IX).

COUNTY SOCIETIES.

SECTION I. County societies shall be organized as soon as practicable in every county of the State in which no county society exists, but there shall be but one county society in each county.

Sec. 2. Full and ample opportunity shall be given to every reputable physician to become a member of the society in the county in which he resides, and if there be no such society, then in the county society of an adjoining county.

Sec. 3. Whenever a member in good standing in any county medical society removes to another county in this State, his name, upon his request, shall be trans-

ferred to the roster of the county society of the county to which he removes, without cost to him.

Sec. 4. At its annual meeting each county society shall elect a delegate or delegates to represent it in the House of Delegates of this Society in accordance with the Constitution and By-Laws of this Society.

Sec. 5. The Secretary of each county society shall keep a roster of its members and of all other registered physicians of the county, in which shall be shown the full name of such physicians, with their addresses, the colleges from which they graduated, and the date of graduation, the date of their license to practice in this State, and such other information as may be deemed to be useful. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death or by removal to or from the county, and in making his annual report he shall account for every physician who shall have practiced in the county during the year.

Sec. 6. The Secretary of each county society shall forward a copy of its roster of officers and members, list of delegates and list of other registered physicians of the county, to the Secretary of this Society thirty days before the date of its annual meeting.

Sec. 7. On or before the first day of June of each year the Treasurer of each county society shall forward to the Treasurer of this Society the amount of the assessment made upon it by the House of Delegates, which assessment shall be at a uniform per capita rate throughout the State based upon membership.

Sec. 7. On or before the first day of June of each year the Treasurer of each county society shall forward to the Treasurer of this Society the amount of the State per capita assessment.

Sec. 8. Each county society may adopt a constitution and by-laws for the regulation of its affairs, provided that the same shall first be approved by the Council of this Society.

Sec. 9. The term county society as used in these By-Laws shall be deemed to include all societies which may be organized and chartered by the House of Delegates.

Sec. 9. The term county society as used in these By-Laws shall be deemed to include all societies now in affiliation with this Society or which may be organized and chartered by the House of Delegates.

CHAPTER XI (formerly CHAPTER X).

MISCELLANEOUS.

SECTION I. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by consent.

Sec. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in The New York State Journal of Medicine.

Sec. 3. Any distinguished physician of a foreign country or a physician not a resident of this State, who is a member of his own State Association, may become a guest during any annual session upon the invitation of the President or officers of the Society, and may be accorded the privilege of participating in all the scientific work of the session.

Sec. 4. The deliberations of the Society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, when not in conflict with the Constitution and By-Laws of the Society.

CHAPTER XII (formerly CHAPTER XI).

AMENDMENTS.

These By-Laws shall not be amended except by a majority vote of all the delegates present at a meeting of the House of Delegates, nor unless ten days' notice

of the meeting and of the proposed amendment shall have been given to each member of the House of Delegates.

CHAPTER XII.

AMENDMENTS.

Section 1. These By-Laws shall not be amended except by a majority vote of all the delegates present at a meeting of the House of Delegates, nor unless ten days' notice of the meeting and of the proposed amendment shall have been sent to each member of the House of Delegates.

Sec. 2. The Council of the Society may, between meetings of the House of Delegates, make such changes in these By-Laws as may be required to adapt them to the Laws of the State of New York or the United States or to resolutions of the Post Office or any Federal department. Such amendments must be approved at the next meeting of the House of Delegates.

REPORT OF THE COUNSEL.

To the Officers, Council, and House of Delegates of the Medical Society of the State of New York:

SIRS:

Herewith I transmit my report as the legal representative of the Medical Society of the State of New York for the year 1912.

I am pleased again to report that there are no appeals pending and no verdict has been rendered against any member of the State Medical Society, defended by me during the past twelve years.

In this connection it is proper, and indeed important, that I report with reference to the weakness of some of the members of the State Society in applying for and securing insurance against malpractice suits. This is deplorable. I recommend that hereafter no physician who is insured in any fidelity company be defended by the State Society. It is against the theory of the establishment of this malpractice defence by the State Society; the insurance companies benefit by the State Society's efforts; the question of whether or not an expert shall be paid by the State Society or the insurance company recurs; and, altogether, it is an unwise position for the State Society to take in any event. The insurance company under the law has to deposit money against the recovery, and attorneys have come to understand that it is a matter of business between their clients and the insurance company, and the doctor's reputation is largely excluded from consideration.

As I reported last year, this organized malpractice defence, conducted as it is by the Medical Society of the State of New York, the profession's representative medical organization, should be more publicly and widely disseminated. It should be brought to the attention of the belligerent patients that if the doctor has done what he considers proper, he will not be subject to blackmail under any consideration. I am frank to add that I have been opposed to this publicity for many years, but the increase

of new suits during the past year or two has made me feel that more publicity will be of benefit.

Owing to the largely increased number of cases brought during the past year, your counsel has tried to find the reason therefor, but unfortunately the only explanation which can be vouchsafed is that the members have awakened to the fact that the State Society stands behind its members. The occasional epidemic of recovery in malpractice cases in various localities has stimulated shyster lawyers and unappreciative patients to bring these actions. I regret to say that the profession itself is largely to blame for this increase. Too many times it happens that the physician who is called in to supplement the work initiated by the unfortunate defendant says something in depreciation of the original effort. Either "I wish you had come to see me first," or the shrug of his shoulders, or "I don't like the looks of things," or "I wish he had not done that," too often starts trouble. There is hardly a case brought against a physician or surgeon which is not attributable directly to some such word or act on the part of the new doctor.

During the past two years there have been brought to the Board of Censors appeals in two extremely important cases,—one a member of the Oneida County Medical Society, and one a member of the New York County Medical Society. Your counsel has acted as the advisor of the censors in both instances, and the greatest care has been taken to see that not only the rights of the one claiming to be aggrieved were looked after, but also that the privileges and rights of the county societies as laid down in their constitutions and by-laws should be lived up to. I believe that both of these appeals, decided after the greatest care and consideration by the Board of Censors, have been correctly decided and that all parties interested have done and have required to be done what was right.

On behalf of the Medical Society of the State of New York, as well as on my own behalf, I desire to thank the physicians and surgeons who have from time to time gratuitously and by their self-sacrificing efforts been of great aid to your counsel in the defence of malpractice actions.

A great majority of cases brought during the year 1912 will develop for trial during 1913 and 1914, and I will have occasion to report upon them in subsequent reports.

The following is a list of cases begun during the year 1912:

1. This action was begun by the service of a summons only, and was brought against a reputable physician of New York County in which it was claimed that he had committed or had attempted to commit an unlawful abortion. Plaintiff appeared to have been a prostitute, and your counsel awaited the service of a summons and complaint with some thoughtfulness, expecting to place under arrest the plaintiff for perjury. The attorney for the plaintiff made several calls on your counsel with the result that finally the case was abandoned and discontinued without costs.

2. The foundation of this action was claimed by

a married woman that the doctor had been employed to treat her incident to the delivery of a child, and that he was unskilful in that he did not give her proper advice and care before delivery, and that his instruments used during confinement were improperly prepared for operation and that she became septic. The complaint states that she was taken to a hospital and there had to submit to an operation to save her life. This action was begun in January, 1912, an answer was interposed, but so far nothing has been done to bring the case on for trial.

3. This action was brought to recover for an X-ray burn resulting, it was claimed by the complaint, from attention given by the physician in a case where the plaintiff had rheumatism, and that the result of said burn was several running sores which disabled the plaintiff, and that eventually the complaint alleges, the arm will have to be amputated. This case was brought early in the year, but no attempt has been made to put the case on the Calendar nor move it for trial. I believe the case has no merit whatever.

4. This action was brought in one of the minor courts, the contention of the plaintiff being that the doctor had made a contract to attend a woman in confinement, and that he had not lived up to his contract, with the result that she had to be taken to a hospital for treatment and thereby had been put to unnecessary expense and hardship, pain and suffering.

5. This is an action brought against a physician conducting a health resort. The claim of the plaintiff is that having before been treated at the same health resort for alcoholism, he again came and was assigned to a room on an upper floor, from a window of which he jumped, and fractured his leg. There is no question raised in this case as to the treatment of the fractured leg, but the one claim of the plaintiff is that he should have been placed in a room with a barred window so that it would be impossible for him to jump out. This case is perhaps somewhat outside the defence of malpractice actions, but your counsel has felt that he should perhaps undertake this defence, and he did so. The case has not yet been tried.

6. This claim has never yet been dignified by the service of a summons and complaint. It was claimed on the part of a woman's husband that the doctor had been careless in the delivery of her child, that he had torn the fetus, and that although he had called in an expert to assist him he had been negligent in his care of the mother, and she and her husband thereby were damaged. This action presents some interesting details which are unnecessary to describe here, but your counsel is satisfied that with letter writing the plaintiff and her husband will be satisfied and no action will be brought.

7. This is an action brought by the administrator of the estate of a child who was operated upon by a well-known surgeon for the removal of the child's tonsils. The complaint of the plaintiff alleges that the anæsthetic was improperly given, and that an unnecessary and additional quantity was used, with the result that the child died by reason of the carelessness of the defendant, and without any negligence on the part of the child or its parents. This case has a right of advancement by reason of its being one by an administrator, and for a time the plaintiff was extremely active, but since that time and since the case first appeared on the calendar their activity has ceased.

8. This case was begun as a malpractice action. Other lawyers appeared for the defendant surgeon, but finally your counsel was brought into the case. Soon the action was changed from one of malpractice to one of contract, but the case being one involving the question of the treatment by a surgeon, your counsel felt that it was his duty to defend the action and he has gone on with that defence. The question involved was one of surgery on a young woman's face, known as cosmetic plastic surgery, and the plaintiff now claims that the surgeon made a contract by which he was

to secure a satisfactory face for the plaintiff. This case will be tried probably during the early part of 1913.

9. The foundation of this case is claimed improper and negligent treatment of a fracture of the leg. There were two defendants to this action, and both defendants were represented by your attorney only as counsel. The statement of the physicians show clearly that there was no omission on their part so far as the care of this leg was concerned, and there is no semblance of any right of recovery.

10. This action is one brought by a plaintiff who claims that his shoulder was broken, or as he alleges it in his complaint, that his "collarbone or some other bone of his body in that part of his body" was fractured. The answer of the defendant surgeon is a general denial, and from the doctor's statement of the case it is clear that there is nothing to fear in the result of this case, and your counsel believes that with the service of the answer the case is terminated. A complaint and amended complaint were served, and answers interposed in reply thereto.

11. This action plaintiff claims is founded upon a wrong diagnosis in a case of measles, and it is charged that the doctor was wrong and careless in permitting the child to leave his home and go out into the streets, when as a matter of fact he should have known that a child suffering from measles should have been kept indoors, and the result was that the child contracted a cold and died. The claim of the plaintiff is that she is deprived of the society, comfort and aid of said infant. This action was begun in June, 1912, and nothing has been done to put the case on the Calendar or serve a notice of trial.

12. The foundation of this action is a claim insisted upon by the guardian *ad litem* of an infant, in which it was claimed that the infant fell and fractured the "collum of femur of her left hip." The amount sued for in this case is \$10,000, and it is claimed that while the defendant made frequent physical examinations of the plaintiff's left hip, he failed to conduct such examinations with due and proper care. Your counsel served an answer and demand for a bill of particulars, but up to date no notice of trial or other evidence that the plaintiff desires to proceed with the trial of the action has been received.

13. This claim has never been put in the form of an action. The doctor had a small bill to collect, and he was informed that if he began an action plaintiff would put in a claim for \$500 as a counter-claim. The communication received from this doctor was received in August. Nothing has been done since, and it is quite evident that there is no intention of bringing an action.

14. The basis of this action as set out in the plaintiff's complaint is that the plaintiff was suffering from a malady or growth of the nostril, and that she employed the defendant to treat her for the same, and that he continued to treat her for some time and thereafter advised that an operation was necessary to cure her. It is claimed by the plaintiff that in performing such operation the defendant was careless and negligent, and incident to the use of certain drugs prescribed by the doctor she was damaged. Plaintiff states that her blood has become infected, and that her body is covered with rashes, and that she has otherwise been injured in her health to the extent of \$10,000. This action was begun early in 1912, but no notice of trial or other evidence that the plaintiff desired to proceed with the action has been received.

15. This action is one brought by a woman, wherein it is claimed that she went to a hospital and was there operated upon by the defendant; that the operation was one requiring an incision into the abdominal cavity of the plaintiff, and that the defendant allowed to remain in the abdominal cavity a pad or gauze, and that she was prevented from recovering from her illness and unnecessarily suffered from the effects of such operation, and the irritation and physical and mental disturbance caused by the presence of the gauze in her

abdomen. This patient went to the hospital voluntarily and was under the care of the nurses in the hospital, and these nurses had charge of the operating room. This case will be reached for trial early in 1913.

16. This action according to the letter from the attorney to the defendant, has as its foundation a cur-rettement of the defendant's uterus. She claims that she did not consent to the operation, and that as a result of the operation which she claims was carelessly performed, she has paralysis from her hips down. Your counsel served notice of appeal in this action, and the time for the plaintiff to file her complaint and serve the same on your counsel has been from time to time extended, but said complaint has not yet been served.

17. This action is one brought by a woman. In her complaint she alleges that the doctor agreed to attend her on the delivery of her child whenever he was called to do so, for the sum of \$15.00, and that when he was called she claims that he improperly advised her as to the time when she would be confined, and upon the approaching delivery she sent for the defendant but that he failed to respond, and that the child with which she was confined died, according to her contention, for lack of medical attendance. This action was brought in June, 1912, and a notice of trial has been served. The case will probably be reached during 1913.

18. This action was begun early in 1912, and simultaneously with the beginning of the action there was served a notice on the part of the plaintiff's attorney that your counsel could not settle the case without consulting him; there has been no such consultation. The case involves a fracture of the leg of the plaintiff at the upper end of the femur, and it is claimed that in addition to said fracture the femur was also dislocated, and it is intimated that there may be some claim that the dislocation was caused by the treatment of the surgeon. It is also claimed that the defendant allowed the plaintiff to suffer with the broken bone and dislocation without making a proper and adequate examination, and that he allowed the plaintiff to suffer without intelligently finding out the injuries from which the plaintiff was suffering. This case has been on the Calendar and notice of trial has been served, but the plaintiff has not appeared to be ready for trial.

19. This action was begun in 1911, but did not reach your counsel until 1912 because the doctor was represented by another attorney. It was claimed by the plaintiff that she had by reason of a fall, broken and dislocated her left hip, and that the defendant had been careless in his treatment in not properly treating the condition, and by reason of the same she suffered great pain and anguish, and that her leg had become shortened, out of place and crooked. There were two causes of action stated in this complaint, the second one being that in the repair of the first injury and while attempting to get up, she had broken her arm, and that the defendant was employed to heal that injury, and that he was careless in that connection, and it is claimed by her complaint that her wrist, arm and hand have also become crooked and the bones thereof have also become out of place. Since your counsel has had charge of this case there has been but little progress made towards a trial of the case, and he considers that the case is unlikely to come to court.

20. This action is one begun against a physician in one of the remote counties of the State, wherein the physician undertook to reduce a fracture sustained by a seven year old child. It is claimed by the lawyer who wrote a letter to the defendant originally, that the efforts of the doctor had not been satisfactory, and that as a result the limb had been shortened two inches, and that the child is a cripple for life. Your attorney is called into this case as counsel only, and he has no knowledge that the case has made any progress in being reached.

21. The foundation for this action is a claim by a woman that a prescription given by a physician was

improper. A summons was served, and a notice of appearance served by your counsel, but no complaint has ever been served by the plaintiff. Recently the plaintiff herself called on your counsel and was extremely bitter, and expressed the hope that the doctor would do something for her. Nothing has been or will be done. The attorney who brought the action has asked for time to serve his complaint, which was granted, and that time has now expired.

22. This action is based on a claim of the plaintiff that she had suffered from a wound of the finger of one of her hands, and that she had employed the defendant to treat it, but that he was so unprofessional and negligent in connection with his treatment of the case that her finger became infected, a bone in the finger became poisoned, and an operation subsequently had to be performed to cure her of the trouble caused by the negligence and unprofessional treatment of the defendant, as she claims. This action was brought early in April, notice of trial has been served, and if the plaintiff desires to proceed the case will probably be reached some time early in 1913.

23. This action was brought against two doctors, one who is and one who is not a member of the State Medical Society. The claim is that our defendant was called in consultation with the other defendant to treat a condition of her leg, the bone whereof was infected in some way that she did not know, but that by reason of the defendants' negligence the plaintiff's leg was amputated, and that the amputation was made necessary by reason of the ignorance and unskilfulness of the defendants and each of them. This action was brought more than two years after the cause of action had accrued; the Statute of Limitations was set up as an answer, and in spite of that fact the case has been noticed for trial, but so far as the defendant member of the society is concerned, the statute is a complete bar.

24. This case is one where the father as administrator of a deceased child, sued the doctor because of his failing to diagnose a scarlet fever case, and that he did not use proper care in treating the case in that he diagnosed and treated it as a case of German measles and mumps. The defendant doctor is charged with causing the death of this child. A notice of trial has been served in this action, and it may be reached for trial during the coming year.

25. In this case there are two actions brought, one by the husband and one by the wife, wherein it was claimed that the doctor was careless in the delivery of a child. In the first instance the doctor brought an action to recover his bill in the Municipal Court. This action has been pending for approximately two years and should be disposed of during the early part of the coming year. Of course if the doctor succeeds in the Municipal Court, that will be a bar to the other action. The Municipal Court case and the two cases against the doctor will probably be disposed of during next year.

26. This action was begun by the husband against the doctor for the loss of his wife incident to an operation upon her neck. It is claimed that the defendant was fraudulent in his statements. There has been considerable litigation, motions, etc. made by the attorneys. A bond for security for costs has been required of the plaintiff who is a non-resident, and just now the matter is quiescent.

27. This action was brought by the husband on behalf of his wife wherein the complaint alleges that the defendant was employed to treat, advise and care for the wife during her pregnancy, but that the defendant was negligent, careless and unskilful and that by reason of his acts the wife will be confined to her bed and in a hospital for some time, and will have to employ other medical and surgical aid to restore her health. This action is one for \$20,000 and since the service of the answer, a notice of trial has been served,

and the case is on the Calendar of the Supreme Court for trial.

28. The plaintiff in this action sues the defendant, alleging that he was kicked by a horse and sustained a fracture of the femur of his left leg, and that the defendant immediately began the care of his patient, but that he was unskilful, negligent and unprofessional, endeavoring to set the said leg; that it was not properly healed, but was permitted to remain "out of space" for several weeks, and that the plaintiff was caused to suffer great pain. This case will be reached for trial during 1913.

29. This action was begun against two physicians who were employed to treat the plaintiff, who it is claimed in the complaint, was suffering from "climatic poisoning." In this case it was claimed that one of the defendants employed the other to look after and diagnose the malady from which the plaintiff was actually suffering. The complaint alleges that both defendants did not use proper care in that they diagnosed the disease as a specific one, and that he be treated therefor. It is also charged that the plaintiff was advised to use mercury baths which were injurious, and that altogether by reason of the failure of the doctors to properly diagnose the condition, the plaintiff was subjected to great pain and that he expended unnecessarily large sums of money. This action was begun early in the year by a different attorney than the one now in charge. There is little likelihood that the case will ever be tried.

30. This action, begun early in 1912, is one wherein the complaint alleges that the plaintiff, a woman, broke her arm between the elbow and wrist, and went to a hospital and there placed herself under the care of the defendant doctor. She claims that he was careless and negligent in setting or attempting to set the bones of her arm, and that the bones by reason thereof were never brought into proper union, but allowed to lap over each other, also that the plaster cast applied was improperly and unskilfully applied. She further alleges that she has suffered unnecessarily, and has been permanently deformed and injured by reason of the carelessness of this defendant.

31. This action is one involving the treatment of a fracture of the leg, in which it was claimed that the doctor was negligent. Although a member now, in this case it appeared that the physician who applied for defence was not at the time of the bringing of the action or at the time the cause of action accrued, a member of the State Society, and for that reason the only assistance that was offered to the doctor by your counsel was one in an advisory capacity.

32. This action was brought by the father of a deceased child against two physicians who operated upon the infant for the removal of tubercular cervical glands of the neck, during which operation the child died. During the pendency of this action which was begun in 1912, there has been an examination of the defendants before trial, and from that examination it is clear that there is absolutely no responsibility on the part of the doctors, it appearing in that examination that the child had had a similar operation once before, and had taken the anæsthetic successfully and well.

33. The basis of this action is a claim addressed by the husband against two physicians and a hospital. The plaintiff complains that the wife went into the hospital to receive medical treatment, and that the defendant performed an abdominal operation on the plaintiff's wife, but that the same was performed without her consent or the consent of any one on her behalf, and that said operation was not imminently necessary. It is claimed by the plaintiff that by reason of the carelessness and negligence of the defendants she was compelled to and did employ other medical and surgical aid, and that she has been left with some abdominal weakness which is permanent. This case has been noticed for trial and may be reached in 1914.

34. This action is brought by an administrator against a physician, wherein it is claimed that the plaintiff's

wife was suffering from inflammation of the womb, and that the defendant so unskilfully and negligently operated on her that he punctured the womb and intestines of the plaintiff's wife, with the result that she became septic, and it was necessary to perform a subsequent operation upon her to relieve her of the effects of the unskilful and negligent treatment of the defendant. That in spite of the secondary operation performed upon her she died, and the plaintiff alleges that the defendant was responsible.

35. This action was begun by a strikebreaker employed in the American Locomotive Company's works, wherein the defendant who was then and there employed by the American Locomotive Company, undertook to care for an injury to the plaintiff's thumb. The defendant carefully and with great skill operated upon and amputated the thumb of the plaintiff, and finally the plaintiff was sent to his home and turned over to the care of his family physician. Some very interesting questions have arisen in this case, one of which is as to the value of a general release issued by the plaintiff in this case to the American Locomotive Company who was the employer of the defendant doctor.

36. This action is based upon a claim made by a woman who was treated at one of the maternity hospitals by the defendant, and during which care and treatment by the defendant it was claimed that he left a piece of gauze packed in the plaintiff's uterus for a considerable period of time, and that in consequence of such injuries received by the plaintiff she became disabled and suffered severe pain of mind and body.

There are five different cases which have been brought to the attention of the counsel during the past year which have not developed into the dignity of an action; some of them, however, may. The doctors in these instances have applied for defence, and counsel is ready for the service of papers. If in this list there develops an action for malpractice, the history of the case will be reported in my next annual statement.

A large percentage, indeed a majority, of the cases brought during 1911 have never been brought on for actual trial. Indeed, during 1912 but nine cases were actually tried in Court, and four were otherwise disposed of without going into court, plaintiffs having abandoned their cases at the last moment.

There has appeared during the last year that same desire on the part of the members of the State Society to consult your counsel on various subjects, which is most gratifying, and it has been his pleasure to give such advice as is requested from time to time to the end that the members of the State Society may feel that their membership really has significance and is important.

The ever broadening influence of the State Society is making itself felt in many directions and through many channels. Sister state societies are inquiring as to the success of the malpractice defence, and adopting your procedure, and your counsel has continued as heretofore to answer such legal questions as are propounded upon the various subjects which are presented.

All of which is respectfully submitted.

JAMES TAYLOR LEWIS,
Counsel.

December 31, 1912.

REPORT OF THE COMMITTEE TO CONSIDER THE RECOMMENDATION OF CHANGES IN THE MEDICAL PRACTICE ACT.

To the House of Delegates:

The committee appointed to act in conjunction with the Committee on Legislation to carry out the following resolutions:

Resolved, That the Board of Regents of the University of the State of New York be requested to recommend such change in the medical practice act as would raise the requirements for securing the medical student's certificate to include, in addition to the standard high school course, one year in college, or its equivalent, embracing especially the following subjects: physics, chemistry (inorganic and qualitative analysis), and general biology.

Resolved, That the State Society recommends to the Board of Regents that an investigation be conducted in order to ascertain the number of internships available in the hospitals of the state with a view to recommending a fifth year in hospital for the completion of the medical curriculum.

Begs to report that "The State Education Department proposes measures quite similar to those contained in the resolutions presented to this committee for consideration, and is carrying out investigations with reference thereto. It is, therefore, the opinion of the committee that no action should be taken by the Society.

Respectfully submitted,

H. M. HICKS, *Chairman*,
FLOYD M. CRANDALL,
W. H. THORNTON.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE FIRST DISTRICT BRANCH.

To the House of Delegates:

As councilor of the First District Branch my duties performed were mainly in preparation for the annual meeting of the district, held in Poughkeepsie, October 4, 1912. The program was interesting and well balanced, but of such length to permit brief discussion. The arrangements for entertainment were most agreeably planned. Attendance of members was large, and included the president of the American Medical Association, Dr. A. Jacobi. I also participated in meetings of the Council and Board of Censors in May, and of the Council in December.

Work in the county societies, with the exception of Putnam, which has no society, continues well sustained.

Respectfully submitted,

DANIEL B. HARDENBERGH,
President First District Branch.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE SECOND DISTRICT BRANCH.

To the House of Delegates:

The affairs of the Second District Branch are in a prosperous condition and have suffered no lack of interest during the year now closed. The president visited officially each of the county medical societies within the branch.

The annual meeting was held at Mineola on the evening of October 24th, preceding which a reception and collation was served to the members of the branch by the hospitality of the Queens-Nassau County Medical Society.

The attendance was large, about 75 present, and is believed to be the largest ever held in the history of the branch organization. Among the distinguished guests present were Dr. A. Jacobi, president of the American Medical Association, and Dr. William F. Campbell, vice-president of the Medical Society of the State of New York; Dr. Wisner R. Townsend, its secretary; Dr. A. T. Bristow, editor of the *NEW YORK STATE JOURNAL OF MEDICINE*, and the presidents of the several county societies, *viz.*, Dr. Elias H. Bartley of Kings, Dr. Horace Warner of Queens-Nassau, and Dr. Hugh Halsey of Suffolk County (all the counties being officially represented but Richmond, whose president, Dr. Fred Coonley, was detained by illness), and all of the gentlemen mentioned save Dr. Bristow responded to toast in a manner which stirred the enthusiasm of all present.

The scientific program of the evening consisted of a paper, "The Stomach as an Organ of Digestion," by Dr. Horace Warner, president of the Queens-Nassau Medical Society, and a paper by Dr. H. Albert Wade of Brooklyn on "Puerperal Eclampsia," which was discussed by Dr. Cornwall, Dr. Houghton and others. Owing to the lateness of the hour the president did not present his address paper entitled "The New Society of the State of New York and Its Constituent Societies." The president is of the opinion that the distinctive work of this and other branches is to cement the friendship of the members of the various county societies and to strengthen and stimulate their efforts along practical and ethical lines. It is worthy of special note that each of the several county societies exercised great care in selecting strong representative men to represent them in the House of Delegates.

The following constitutes the officers for the ensuing year: Dr. Victor C. Robertson of Brooklyn, president; Dr. James S. Cooley, Mineola, vice-president; Dr. Henry Eastmond of Brooklyn, secretary.

Respectfully submitted,

WALTER B. CHASE,
President Second District Branch.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE THIRD DISTRICT BRANCH.

To the House of Delegates:

The Third District Branch held its annual meeting in Troy, October 1, 1912. The morning was occupied with clinics in the hospitals, which were largely attended by the out of town members. The afternoon session was held in the Court House and consisted of the reading of papers. The program has already been reported in the account of the Sixth Annual Meeting. The various county societies throughout the district have been doing good scientific work, and are in a prosperous condition.

Respectfully submitted,

JOHN B. HARVIE,

President, Third District Branch.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE FOURTH DISTRICT BRANCH.

To the House of Delegates:

The Fourth District Branch covers so wide a territory and the medical practitioners are so widely scattered that it is a wonder that the stated meetings are so generally attended as they are.

The last year has shown an increase in membership in all of the counties, but most of the counties still show a fairly large proportionate number who are not members.

There has been a very small loss in nearly every society from non-payment of dues.

The attendance at the stated meetings has been exceedingly good and the interest shown in medical matters has been increasing.

Only one illegal practitioner has been reported up to date. The annual meeting of the branch was held at Glens Falls on October 12, 1912; the attendance was very large, about 100 being present, and the interest shown was most cheering.

A splendid scientific program was presented and the meeting was very successful, the presence of the president of the American Medical Association adding greatly to the success of the meeting. When you consider that members came from as far away as Ogdensburg, and from as far north as Plattsburg and Saranac Lake, which meant long and tiresome railway journeys, it certainly speaks well for the enthusiasm and interest of the medical profession in things medical.

The branch officers and officers of the county societies should be urged to special efforts to get in as many physicians into the different societies as possible this coming year; those who are members show splendid interest in the welfare of the society.

The greatest courtesy has been shown to the president of this branch during the year and the utmost willingness to present papers or to assist in obtaining papers for the annual meeting or to

do anything to add to the success of the year's work has been shown by every physician who has been approached.

In conclusion, it would seem that matters in the Fourth District Branch are in a healthy condition and it only needs a little more effort on the part of every member to get in a larger membership, and thus assure a more successful society.

Respectfully submitted,

FRED G. FIELDING,

President Fourth District Branch.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE FIFTH DISTRICT BRANCH.

To the House of Delegates:

The county societies of the Fifth District Branch are in good condition, holding regular meetings, but the increase in membership has not been as large as it should be. This is accounted for in part by the fact that some of the counties are very small and already have in their ranks the majority of the desirable practitioners of their neighborhoods. In Oneida County, the differences of opinions resulting from the expulsion of certain members, have tended to keep matters in the City of Utica and the outlying country in a condition where no great amount of recruiting need be expected until the matter is definitely settled one way or another. In regard to Onondaga County, it is hoped that the near future will show a considerable increase in membership.

The annual meeting was held at Oswego and was largely attended; papers were of great interest and the discussions worthy of the occasion. At the business meeting the following officers were elected for the ensuing year:

President, Otto Pfaff, Oneida; Vice-President, Homer P. Marsh, Fulton; Secretary, Frederick H. Flaherty; Treasurer, John A. Barnette, Watertown.

Respectfully submitted,

JAMES K. STOCKWELL,

President, Fifth District Branch.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE SIXTH DISTRICT BRANCH.

To the House of Delegates:

I have made visits to the various county societies in the sixth district, with the idea of popularizing the district branch meeting held in Binghamton October 15th. My efforts at these visits were entirely centered upon the object of getting from each county society a representative attendance at this meeting. In consequence, I made no more than a casual observation of county society conditions. I have not made visits to all of the county societies in this district, but will report on such visits as I have made.

I have attended nearly all the meetings of the Broome County society, which were fairly well attended. It is my opinion that the profession is not fully represented in the membership of the county society and that an active canvass for new members would bring results.

I have attended two meetings of the Chenango County society and found that society active, its officers energetic, meetings fairly well attended, and its membership fairly represents the profession in the county.

I was unable to accept the invitations extended to me by the Chemung County society to attend its meetings.

A joint session of the Cortland and Tompkins County societies was held at Freeville, which I attended. There was an attendance of nearly full membership from both societies and a good program. It was an enthusiastic meeting and there was excellent feeling shown among the members, and from my general knowledge of conditions in these societies I would think them fully up to the standard. It is also my opinion that each society has a fairly full membership.

I attended a meeting of the Delaware County society at Delhi, which was poorly attended, but I think the membership in this society is small. The papers read were excellent. In my talk with officers of this society I learned that members are widely scattered throughout the county and it is difficult for them to get together. It would seem that to hold meetings elsewhere than at Delhi at times would perhaps bring out a better attendance.

I found it difficult to get officers of the Otsego County society to answer letters relative to dates of meetings and other matters relative to district branch meeting. I attended no meetings of this society. Neither did I visit the Schuyler County society.

I attended a meeting of the Tioga County society at Owego, which was poorly attended, but the membership in this society is small.

The meeting of the Sixth District Branch was very well attended, and the following officers were elected for the ensuing year: President, Luzerne Coville, Ithaca; vice-president, Thomas F. Manley, Norwich; secretary-treasurer, R. Paul Higgins, Cortland.

Respectfully submitted,

FREDERICK M. MILLER,
President, Sixth District Branch.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE SEVENTH DISTRICT BRANCH.

To the House of Delegates:

The Seventh District Branch of the Medical Society of the State of New York had a very interesting meeting in Corning, October 10, 1912.

There was a good attendance at the meeting and the papers presented were very instructive.

The Corning Medical Association had the

pleasure of having the visiting men as their guests at luncheon at the Hotel Dickinson.

While it has been impossible for me to visit all of the societies which constitute the Seventh District Branch, yet I believe our branch is made up of good active county societies.

Sonyea was selected as the meeting place for 1913 and it is proposed at that time to have a joint meeting with the Eighth District Branch.

The following officers were elected for the year 1913: Dr. W. T. Shanahan, Sonyea, president; Dr. W. E. Bowen, Rochester, vice-president; Dr. J. F. Myers, secretary, and Dr. H. J. Knickerbocker, treasurer.

Respectfully submitted,

HERBERT B. SMITH,
President of the Seventh District Branch.

December 31, 1912.

REPORT OF THE COUNCILOR OF THE EIGHTH DISTRICT BRANCH.

To the House of Delegates:

The executive committee of the Eighth District held its first meeting at the Hotel Iroquois, Buffalo, the latter part of June and outlined the program for the annual meeting.

A few weeks later the committee met again in Buffalo at the office of Dr. McKee and completed the program.

The annual meeting was held September 24th and 25th at Buffalo with a full two days' program, including papers from members, ambulatory clinics, an address by the president of the State Society, Dr. John F. W. Whitbeck, and a paper by Dr. William Gerry Morgan of Washington, D. C., on "Einhorn's Bead Test As a Means of Estimating Intestinal Digestion," surgical clinic by Dr. Roswell Park at the Buffalo General Hospital.

On the evening of the 24th a subscription dinner was given at the University Club, which was well attended. Following the dinner all were invited to the residence of Dr. Lucien Howe, where light refreshments were again served and talks by members on lines of benefitting the organization.

The officers elected for the year 1913 are as follows: President, Dr. Arthur G. Bennett, Buffalo; first vice-president, Dr. Carl Leo-Wolf, Niagara Falls; second vice-president, Dr. Albert T. Lytle, Buffalo; secretary, Dr. Carl Tompkins, Buffalo, and treasurer, Dr. C. A. Wall, Buffalo.

I have visited several county societies and hope to meet with all the counties of my district before my term expires. I find the members enthusiastic and harmonious in all the counties so far visited.

Respectfully submitted,

H. A. EASTMAN,
President of the Eighth District Branch.

December 31, 1912.

HOUSE OF DELEGATES.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York was held in Convention Hall, Rochester, April 28, 1913, at 8.30 P. M., Dr. John F. W. Whitbeck, Rochester, President, in the Chair; Dr. Wisner R. Townsend, New York, Secretary.

On the roll call the following delegates answered to their names:

A. J. Bedell, L. H. Neuman, E. W. Ayars, J. H. Martin, E. Torrey, M. N. Bemus, V. M. Griswold, E. T. Bush, M. M. Lucid, A. L. Peckham, F. W. Parson, I. Sernofsky, A. G. Bennett, A. T. Lytle, T. H. McKee, J. Richter, W. H. Thornton, J. Ullman, C. A. Wall, J. F. Whitwell, G. Lenz, V. M. Rice, F. R. Calkins, C. B. Forsyth, J. C. Rappold, E. E. Cornwall, C. N. Cox, J. W. Fleming, O. A. Gordon, J. C. Hancock, J. R. Kevin, J. C. MacEvitt, J. J. O'Connell, J. O. Polak, R. F. Barber, E. N. K. Mears, W. T. Shanahan, W. M. Brown, R. R. Fitch, O. E. Jones, W. T. Mulligan, W. D. Ward, H. M. Hicks, E. Altman, T. P. Berens, L. F. Bishop, S. M. Brickner, S. J. Kopetzky, G. E. Davis, F. M. Crandall, W. L. Culbert, E. F. Smith, H. Fox, E. E. Harris, I. S. Haynes, C. Herrman, H. S. Houghton, E. LeFevre, S. Lloyd, R. L. Loughran, J. M. Lynch, J. M. Mabbott, G. H. Fox, R. S. Morton, R. D. Moffett, V. C. Pedersen, W. C. Phillips, C. H. Richardson, G. R. Satterlee, T. S. Southworth, J. B. Squier, H. S. Stark, I. D. Steinhardt, B. H. Wells, T. H. Allen, J. Van D. Young, C. L. Preisch, H. U. Cramer, F. J. Douglas, H. G. Jones, F. H. Peck, A. S. Hotaling, A. E. Larkin, D. H. Murray, H. L. Winter, J. H. Taylor, W. H. Kidder, B. W. Stearns, J. J. Kindred, R. F. Macfarlane, W. J. Malcolm, W. Kirk, Jr., H. C. Gordinier, A. Trenchard-Wood, G. A. Leitner, W. B. Hanbidge, G. C. Madill, H. G. Hughes, J. K. King, O. K. Stewart, M. B. Haynes, M. B. Tinker, M. O'Meara, E. A. Nevin, A. H. Palmer, P. S. Goodwin. Total, 106.

The following officers and chairmen of committees were present:

John F. W. Whitbeck, President; W. Stanton Gleason, First Vice-President; William Francis Campbell, Second Vice-President; R. Paul Higgins, Third Vice-President; Wisner R. Townsend, Secretary; Alexander Lambert, Treasurer; Thomas J. Harris, Chairman Committee on Scientific Work; Joshua M. Van Cott, Chairman Committee on Public Health; Wesley T. Mulligan, Chairman Committee on Arrangements, also the following Councilors: John B. Harvie, Third District Branch; Henry A. Eastman, Eighth District Branch.

A quorum having answered to their names on the roll call, President Whitbeck declared the meeting open for business, and stated that the first order was the reading of the minutes of the previous meeting by the Secretary.

DR. CHARLES A. WALL: There is no necessity of having the minutes read, as they have been published in volume 12, No. 5, May, 1912, NEW YORK STATE JOURNAL OF MEDICINE, and I move that they be adopted as printed.

Motion seconded and carried.

THE PRESIDENT: You have the reports before you as published in this pamphlet. What will you do with these reports? See pp. 261-284.

DR. WALL: I move these reports be received and that the recommendations in them be referred to a reference committee of five, to be appointed by the chair, who shall report to the House of Delegates later. Seconded.

THE SECRETARY: With the exception of the report of the Committee on By-Laws.

DR. WALL: I accept the amendment.

The motion as amended was seconded and carried.

The chair appointed as a reference committee: Dr. Wall, Chairman, Drs. Peckham, Bush, Fleming, and LeFevre.

THE PRESIDENT: We will now take up unfinished

business and receive the report of the Committee on Revision of By-Laws.

DR. LE FEVRE: As chairman of the committee appointed last year, I move that the report of the Committee on By-Laws be considered *seriatim*.

DR. WALL: I second that motion, and would move as an amendment that the part of the report which refers to the constitution be received and referred to the House of Delegates for action next year, and that the By-Laws be taken up *seriatim*. Seconded.

DR. LE FEVRE: I accept the amendment.

Motion as amended seconded and carried.

DR. LE FEVRE: There are certain changes to be made in the Constitution as printed. There is to be added to Article II, Section 2, after the word "societies" the following, "now in affiliation with this society, or which may be organized and chartered by the House of Delegates."

Article III, Section 3, after the words "candidate for" the words "a general" to be added. See page 272.

DR. WALL: I would like to substitute for Article III, Section 1, the following:

ARTICLE III.

OFFICERS.

SECTION 1. The administrative officers of this society shall be (a) the general officers, consisting of a president, three vice-presidents, a secretary, and a treasurer. (b) The chairmen of the various standing committees. (c) A councilor from each district branch, who shall be the president thereof.

These officers shall be the directors of this society forming the executive body to be known as the Council. The president, secretary and district councilors shall constitute the Board of Censors.

SEC. 2. The general officers and the chairmen of the standing committees shall be elected by a majority ballot vote for the term of one year at the annual meeting of the House of Delegates and shall assume office at the close of the meeting at which they are elected.

The councilors shall be chosen for the term of two years by the district branch to which they belong and shall assume office at the close of the next annual meeting of this society, following their election. The evenly numbered branches electing their councilors the even years, the odd numbered branches on the odd years, but a branch may at any intermediate meeting hold a special election for a shorter term, and, should occasion arise, to fill a vacancy, the vice-president of the branch filling the vacancy until an election is held.

DR. LE FEVRE: In the remaining articles of the Constitution, as printed, there are no corrections to be made, and no further amendments offered. (All received to lie over for action until next year.)

DR. WALL: I now move that we take up the By-Laws chapter by chapter and act on them *seriatim*.

Motion seconded and carried.

The By-Laws were then taken up chapter by chapter, and section by section, and each adopted separately and then as a whole.

BY-LAWS ADOPTED APRIL 28, 1913.

BY-LAWS.

CHAPTER I.

MEMBERSHIP.

SECTION 1. A copy of the roster of members of a county society, certified by the secretary of that society to be correct, shall be prima facie evidence of their right to membership in this Society; but the delegates of a county society which is in default in the payment of any dues or assessments imposed by the House of Delegates or by any county society which shall be under sentence of suspension imposed by the House of

Delegates, shall not be entitled to sit in the House of Delegates during the continuance of such default, or suspension; nor shall any person who is under sentence of suspension from a county society be entitled to exercise any of the rights or privileges of membership in this Society during the period of his suspension.

RETIRED MEMBERSHIP.

SEC. 2. Members in good standing who are seventy years of age or over may, by a majority vote of the House of Delegates present and voting at any annual meeting, become retired members. Applicants for retired membership must be approved and endorsed by the President and Secretary of the County Society to which they belong, and the application must be sent to the Secretary of the State Society in time for presentation at the first meeting of the House of Delegates. Retired members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded other rights or privileges of membership, nor be subject to assessments.

HONORARY MEMBERSHIP.

SEC. 3. Honorary membership may be conferred upon distinguished physicians residing outside of the State of New York at any annual meeting, by a two-thirds vote of the delegates present and voting, provided the nomination has been made at a previous annual meeting. All such nominations must be endorsed by three members of the Society and forwarded to the secretary in time for presentation at the first meeting of the House of Delegates. Honorary members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded other rights or privileges of membership, nor be subject to assessments.

Honorary membership created by this section shall include the list of honorary members already enrolled.

CHAPTER II.

MEETINGS.

SECTION 1. Each member in attendance at the annual session of the Society shall enter his name and the name of his county society in the register to be kept by the Secretary of the Society for that purpose. No member shall take part in any of the proceedings at an annual session until he shall have complied with the provisions of this section.

SEC. 2. All registered members may attend and participate in the proceedings and discussions of the general meetings of the Society and of the sections.

SEC. 3. The following shall be the order of business at all general meetings of the Society:

1. Calling the Society to order.
2. Address of welcome by the Chairman of the Committee on Arrangements.
3. Reading the minutes of the last meeting.
4. Reports of special committees.
5. Special addresses.
6. President's address.
7. Reading and discussion of papers.
8. Miscellaneous business.

SEC. 4. Special meetings of the Society shall be called by the President upon the request of one hundred members; and in case of the failure, inability or refusal of the President to act, such meetings may be called by a notice thereof subscribed by one hundred members.

SEC. 5. Special meetings of the House of Delegates shall be called by the President upon the request of fifty delegates; and in case of the failure, inability or refusal of the President to act, such meetings may be called by a notice thereof subscribed by fifty delegates.

CHAPTER III.

HOUSE OF DELEGATES.

SECTION 1. The House of Delegates shall meet annually in the evening of the day before the annual

meeting of the Society. It may adjourn from time to time as may be necessary to complete its business, providing that its meetings shall conflict as little as possible with the annual meeting of the Society.

SEC. 2. Thirty delegates shall constitute a quorum.

SEC. 3. The House of Delegates shall make careful inquiry into the condition of the profession in each county of the State, and shall have authority to adopt such methods and measures not in conflict with the Constitution and By-Laws of the Society as it may deem most efficient for building up and increasing the interest in such county societies as already exist; for organizing the profession in counties where societies do not exist; for organizing district branches, and for protecting the members of the Society against suits for alleged malpractice.

SEC. 4. It shall elect delegates to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body, and it may elect or appoint such other delegates as in its judgment the interests of the Society may require, and it shall provide for the issue of credentials to all delegates.

SEC. 5. It shall upon application provide for the issue of charters to county societies in affiliation with the Society, and it shall hear and finally determine all appeals taken from decisions of the Board of Censors.

SEC. 6. It shall have authority to appoint committees for special purposes from among members of the Society. Such committees shall report to the House of Delegates, and may be present at and participate in the debates on their reports.

SEC. 7. It shall have authority to organize the physicians of two or more sparsely settled and adjoining counties into societies to be suitably designated so as to distinguish them from District Branches; and the societies so organized shall be entitled to all rights and privileges of county societies and the members thereof to the rights and privileges of members of county societies.

SEC. 8. The following shall be the order of business at the meetings of the House of Delegates.

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of the minutes of the previous meeting.
4. President's report.
5. Annual report of the Council.
6. Report of the Secretary.
7. Report of the Treasurer.
8. Reports of standing committees.
9. Reports of special committees.
10. Unfinished business.
11. New business.

SEC. 9. The officers and committees of the Society to be elected by the House of Delegates shall be elected at an adjournment of the annual meeting of the House of Delegates, which adjourned meeting shall be held at a convenient hour on the first day of the annual meeting of the Society. No member shall be eligible for any office, or entitled to vote for any officer or delegate who is in arrears for county dues and State per capita assessment.

SEC. 10. Method of Holding Elections.—All elections shall be by ballot, and a majority of the votes cast shall be necessary to elect. In case no nominee receives a majority of the votes on the first ballot, the nominee receiving the lowest number of the votes shall be dropped and a new ballot taken. This procedure shall be continued until one of the nominees receives a majority of all the votes cast, when he shall be declared elected, but in case no delegate or alternate for the American Medical Association receives on the first ballot a majority of the votes, the nominees shall be declared elected in the order of the highest number of votes received, until the allotted number shall have been chosen. In case of a tie vote for delegate or alternate a new ballot shall be taken.

CHAPTER IV. COUNCIL.

SECTION 1. The Council shall meet at the close of the annual session of the Society, to organize for the ensuing year.

It shall meet once during the months of May and December of each year, the time and place to be selected by the President, and it shall meet at such other times as occasion may arise, upon the request in writing of five members of the Council, or upon the call of the President.

SEC. 2. Seven members shall constitute a quorum.

SEC. 3. The Council shall provide for and superintend all publications and their distribution, and shall have authority to appoint an editor and such assistants as it may deem necessary. All moneys of the Society received by the Council shall be paid to the Treasurer of the Society. The Council shall audit the annual accounts of the Treasurer and Secretary and other agents of the Society, and present a statement of the same in its annual report to the House of Delegates. The report shall also specify the character and cost of all publications of the Society during the year, and the amount of all property belonging to the Society under its control. The Council shall be empowered to fill any vacancies which may occur in any elective or appointive office not otherwise provided for. The Council shall also have general supervision of all arrangements for the Annual Meeting.

SEC. 4. The following shall be the order of business at meetings of the Council:

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of minutes and communications from the Secretary.
4. Communications from the Treasurer.
5. Communications from the chairmen of standing Committees.
6. Unfinished business.
7. New business.

CHAPTER V. CENSORS.

SECTION 1. The President, Secretary and the district councilors shall be the Board of Censors of the Society, who shall hear and determine all appeals from the decisions of county societies which may involve the rights and standing of members whether in relation to one another, or to county societies, or to this Society. Five Censors shall constitute a quorum.

CHAPTER VI. DUTIES OF OFFICERS.

SECTION 1. The President or one of the Vice-Presidents shall preside at all meetings of the Society, the House of Delegates, the Council and the Censors. The President shall appoint all committees not otherwise provided for. He shall deliver an address at the annual meeting of the Society, and he shall perform such other duties as custom and parliamentary usage may require. He shall be ex-officio a member of all standing committees.

SEC. 2. The Vice-Presidents shall assist the President in the discharge of his duties, and in his absence the Vice-President next in numerical order shall perform his duties. In the event of the President's death, resignation, removal, incapacity or refusal to act, the Vice-President next in numerical order shall succeed him, and the other Vice-Presidents advanced in order.

SEC. 3. The Secretary shall attend all meetings of the Society, the House of Delegates, the Council and the Censors, and shall keep minutes of their respective proceedings in separate records. He shall be the custodian of the seal of the Society and of all books of record and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep an account of and promptly turn over to the

Treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members at all sessions of the Society. With the aid and co-operation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the Councilors in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official correspondence notifying members of meetings, officers of their election and committees of their appointment and duties. He shall affix the seal of the Society to all credentials issued to members of the Society elected or appointed by the House of Delegates and to such other papers and documents as may require the same. He shall make an annual report to the House of Delegates. He shall supply each county society with the necessary blanks for making their annual reports to this Society. Acting under the direction of the Committee on Scientific Work, he shall prepare and issue all programs. The amount of his salary shall be fixed by the Council. He shall be ex-officio a member of all standing committees.

SEC. 4. The Treasurer shall keep accurate books of accounts of all moneys of the Society which he may receive, and shall disburse the same when duly authorized by the Council; but all checks drawn by the Treasurer upon the funds of the Society shall be countersigned by the President or by the Secretary of the Society. He shall give security for the faithful performance of his duties, which shall be approved and placed in the custody of the President. He shall make an annual report to the House of Delegates. The Treasurer shall be a trustee of the Merrit H. Cash fund, and Lucien Howe Fund, and such other special funds as may be established. His salary shall be fixed by the Council.

SEC. 5. Each District Councilor shall visit the counties of his district at least once a year. He shall make an annual report of his work and of the condition of the profession in each county in his district at the annual session of the House of Delegates. The necessary traveling expenses incurred by each councilor in the line of his duties as herein defined may be allowed by the Council on a proper itemized statement; but this shall not be construed to include his expenses in attending the annual session of the Society.

CHAPTER VII. COMMITTEES.

SECTION 1. Classification of Committees. Committees shall be classified as a. Standing Committees. b. Reference Committees. c. Special Committees.

SEC. 2. The following shall be the standing committees of the Society:

- A Committee on Scientific Work.
- A Committee on Legislation.
- A Committee on Public Health.
- A Committee on Arrangements.
- A Committee on Medical Research.

SEC. 3. The Committee on Scientific Work shall consist of the Chairman, a member to be appointed by the President of the Society and approved by the Council, and the Chairman of the different sections. It shall hold meetings and prepare the necessary programs for the annual meeting of the Society and for such other special meetings as may be designated by the House of Delegates. It shall forward programs in ample time for publication, and not later than thirty days before the annual session shall send a completed program to the Secretary for the printing of the final program.

SEC. 4. The Committee on Legislation shall consist of three members, including the Chairman. It shall keep in touch with professional and public opinion. Under the direction of the House of Delegates it shall represent the society in procuring the enforcement of the medical laws of the State in the interest of public

health and of scientific medicine, and in procuring the enactment of such medical laws as will best secure and promote the welfare of the whole people.

SEC. 5. The Committee on Public Health shall consist of three members, including the Chairman. It shall report upon and present to the Society such subjects as may seem to the committee to be of special importance in their relation to the public health.

SEC. 6. The Committee on Arrangements shall consist of eight members, including the Chairman. It shall provide suitable accommodations for the meeting places of the Society and of the House of Delegates, Council and Censors, and shall have general charge of the arrangements for all meetings. The Chairman of the committee shall report an outline of the arrangements to the Secretary for publication in the program, and shall make such additional announcements during the session as occasion may require.

SEC. 7. The Committee on Medical Research shall consist of the Chairman and one member for each 200 or fraction thereof, of the membership of the eight District Branches of the Medical Society of the State of New York. It shall adopt such measures as may be necessary, to instruct the public and the profession in the desirability of animal experimentation and shall use all honorable means to oppose such bills as may be presented to the Legislature with the view of limiting or restricting scientific progress. In legislative work it shall act in co-operation with the Committee on Legislation.

SEC. 8. The Chairman of all Standing Committees shall be elected by the House of Delegates, unless otherwise provided for in the By-Laws. The remaining members may be elected by the Council at the recommendation of their respective chairmen.

REFERENCE COMMITTEES.

SEC. 9. a. Immediately after the organization of the House of Delegates at each annual session the President shall appoint from among the members present such committees as may be deemed expedient by the House of Delegates. Each committee shall consist of five members, unless otherwise provided, to be appointed by the President. These committees shall serve during the session at which they are appointed.

b. To the appropriate committee shall be referred resolutions, measures and propositions presented to the House of Delegates before final action shall be taken, unless otherwise unanimously ordered by the House of Delegates.

c. Each reference committee shall, as soon as possible after the adjournment of each meeting, or during the meeting, if necessary, take up and consider such business as may have been referred to it, and shall report on the same at the next meeting, or when called on to do so. Three members shall constitute a quorum.

SPECIAL COMMITTEES.

SEC. 10. a. Special Committees may be created by the House of Delegates to perform the special functions for which they are created. They shall be appointed by the officer presiding over the meeting at which the committee is authorized, unless otherwise ordered by the House of Delegates.

b. The Committee on Prize Essays shall consist of three members including the chairman. Its duty shall be to receive all essays offered in competition for prizes which may be offered by this Society.

The Committee shall make all necessary rules and regulations for the award of prizes subject to the terms of the deeds of gift, and shall report the result at the next annual meeting of the House of Delegates. They shall give notice through the Society's publications or by other methods within thirty days after their appointment, of the amount of the prize essays and when the essays shall be submitted to the Committee.

Members of the Committee on Prize Essays shall be

elected by the House of Delegates for the term of two years.

MEMBERSHIP OF COMMITTEES.

SEC. 11. Any member of the Society shall be eligible to serve on Standing or Special Committees. All members of committees who are not members of the House of Delegates shall have the right to present their reports in person to the House of Delegates and to participate in the debate thereon, but shall not have the right to vote.

CHAPTER VIII.

DISTRICT BRANCHES.

SECTION 1. The First District Branch shall comprise the members of the medical societies of the Counties of New York, Westchester, Rockland, Putnam, Orange, Dutchess and Richmond.

The Second District Branch shall comprise the members of the medical societies of the Counties of Kings, Queens, Nassau and Suffolk.

The Third District Branch shall comprise the members of the medical societies of the Counties of Albany, Rensselaer, Schoharie, Greene, Columbia, Ulster and Sullivan.

The Fourth District Branch shall comprise the members of the medical societies of the Counties of St. Lawrence, Franklin, Clinton, Essex, Hamilton, Fulton, Montgomery, Schenectady, Saratoga, Warren and Washington.

The Fifth District Branch shall comprise the members of the medical societies of the Counties of Onondaga, Oneida, Herkimer, Oswego, Lewis, Madison and Jefferson.

The Sixth District Branch shall comprise the members of the medical societies of the Counties of Otsego, Delaware, Chenango, Cortland, Tompkins, Schuyler, Chemung, Tioga, Broome and Steuben.

The Seventh District Branch shall comprise the members of the medical societies of the Counties of Monroe, Wayne, Cayuga, Seneca, Yates, Ontario and Livingston.

The Eighth District Branch shall comprise the members of the medical societies of the Counties of Erie, Niagara, Orleans, Genesee, Wyoming, Allegany, Cattaraugus and Chautauqua.

SEC. 2. Each District Branch shall elect annually a President, a Vice-President, a Secretary, and a Treasurer.

SEC. 3. The President of the District Branch shall be the Councilor for that branch.

SEC. 4. Each District Branch may adopt a constitution and by-laws for its government, provided that the same shall first be approved by the Council of the Society.

CHAPTER IX.

SECTIONS.

SECTION 1. The Sections designated by the House of Delegates shall each annually elect a Chairman and Secretary provided that each Section may elect its Secretary to serve a longer time at its discretion.

SEC. 2. The Chairmen of the various sections shall be members of the Committee on Scientific Work.

SEC. 3. The election of officers of sections shall be the first order of business of the afternoon meeting of the second day of each annual session. To participate in the election of any section a member must be registered with such section and must have recorded his name and address in the Section registry.

SEC. 4. Each section shall hold its meetings at such times as designated by the Committee on Scientific Work.

CHAPTER X.

COUNTY SOCIETIES.

SECTION 1. County societies shall be organized as soon as practicable in every county of the State in which no county society exists, but there shall be but one county society in each county.

SEC. 2. Full and ample opportunity shall be given to every reputable physician to become a member of the society in the county in which he resides, and if there be no such society, then in the county society of an adjoining county.

SEC. 3. Whenever a member in good standing in any county medical society removes to another county in this State, his name, upon his request, shall be transferred to the roster of the county society of the county to which he removes, without cost to him.

SEC. 4. At its annual meeting each county society shall elect a delegate or delegates to represent it in the House of Delegates of this Society in accordance with the Constitution and By-Laws of this Society.

SEC. 5. The Secretary of each county society shall keep a roster of its members and of all other registered physicians of the county, in which shall be shown the full name of such physicians, with their addresses, the colleges from which they graduated, and the date of graduation, the date of their license to practice in this State, and such other information as may be deemed to be useful. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death or by removal to or from the county, and in making his annual report he shall account for every physician who shall have practiced in the county during the year.

SEC. 6. The Secretary of each county society shall forward a copy of its roster of officers and members, list of delegates and list of other registered physicians of the county, to the Secretary of this Society thirty days before the date of its annual meeting.

SEC. 7. On or before the first day of June of each year the Treasurer of each county society shall forward to the Treasurer of this Society the amount of the State per capita assessment.

SEC. 8. Each county society may adopt a constitution and by-laws for the regulation of its affairs, provided that the same shall first be approved by the Council of this Society.

SEC. 9. The term county medical society as used in these By-Laws shall be deemed to include all societies now in affiliation with this Society or which may be organized and chartered by the House of Delegates.

CHAPTER XI.

MISCELLANEOUS.

SECTION 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by consent.

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in The New York State Journal of Medicine.

SEC. 3. Any distinguished physician of a foreign country or a physician not a resident of this State, who is a member of his own State Association, may become a guest during any annual session upon the invitation of the President or officers of the Society, and may be accorded the privilege of participating in all the scientific work of the session.

SEC. 4. The deliberations of the Society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, when not in conflict with the Constitution and By-Laws of the Society.

CHAPTER XII.

AMENDMENTS.

These By-Laws shall not be amended except by a majority vote of all the delegates present and voting at a meeting of the House of Delegates, nor unless ten days' notice of the meeting and of the proposed

amendment shall have been given to each member of the House of Delegates.

SEC. 2. The Council of the Society may, between meetings of the House of Delegates, make such changes in these By-Laws as may be required to adapt them to the Laws of the State of New York or the United States or to resolutions of the Post Office or any Federal department. Such amendments must be approved at the next meeting of the House of Delegates.

THE PRESIDENT stated that unfinished business was now in order.

DR. MURRAY: I desire to make a supplementary report for the Committee on Expert Medical Testimony.

TO THE HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

It is the pleasure of your Committee on Expert Medical Testimony to make the following supplemental report:

On March 17, 1913, Assembly Bill No. 2016 was introduced by Assemblyman S. Gay Daley, and the Senate Bill No. 2016 was introduced by Senator J. Henry Walters, both of Onondaga County.

The bills were identical and the following is a copy:

An Act to amend the judiciary law, in relation to examining physicians.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1.—Article two of chapter thirty-five of the laws of nineteen hundred and nine, entitled "An act in relation to the administration of justice, constituting chapter thirty of the consolidated laws," is hereby amended by adding at the end thereof a new section, to be section thirty-one, to read as follows:

SECTION 31.—EXAMINING PHYSICIANS. In a criminal action or proceeding or in a special proceeding instituted by the State writ of habeas corpus or certiorari to inquire into the cause of detention, in which the soundness of mind of a person is in issue, the court in which or the judge or justice before whom the action or special proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of the examination. Any such examining physician may be sworn as a witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying when certified by the presiding judge or justice of the court or judge or justice making the appointment, shall be paid out of any funds available for the payment of and in the same manner as other court expenses.

SECTION 2.—This act shall take effect immediately.

The bill has been very carefully drawn with the idea, from past experience, that it is much wiser to get half a loaf than to have no bread.

I have shown this bill to a number of first-class lawyers as well as to the judges of the Supreme Court and Court of Appeals, and it has met with universal approval.

It was drawn, at the instance of the Committee on Expert Medical Testimony, by Ray B. Smith, who is probably the greatest expert in this state on the question of drafting legislative bills and their constitutionality.

We were not able to get the bill ready for introduction into the Houses of the Legislature until very late in the session, and had very little hopes of getting any action upon it this year even at the time of introduction, but next year the bill will be ready and can be introduced at the beginning of the session.

Copies of this bill have been sent to the secretary of every county society in the state, and I hope they will take occasion to get up some sentiment in favor of it

during the year with their representatives in the legislature.

Nothing that is worth while is ever gained without a fight, and those who fight for a principle should never give up until they have accomplished the end desired.

I believe the disposition of your committee is along these lines.

Respectfully submitted,

DWIGHT H. MURRAY, *Chairman.*

DR. MURRAY: I move the report be referred to the reference committee.

Motion seconded and carried.

THE SECRETARY: Action on a notice presented at the last meeting to change the time and place of meeting can now be taken.

DR. E. ELIOT HARRIS moved, in accordance with Article VI, Section 1, of the Constitution, that notice is hereby given that a motion will be made at the next annual meeting to change the time and place of meeting.

Seconded and carried.

THE PRESIDENT: We will take up the time and place of the next meeting.

DR. E. ELIOT HARRIS: I move the time for the annual meeting be the third Monday in April. Seconded.

DR. WALL: I move to amend "that it be the fourth Monday in April, 1914."

The amendment was seconded, accepted, and the original motion as amended was carried.

THE PRESIDENT: The next is the place of meeting.

DR. E. ELIOT HARRIS: I move that the next annual meeting be held in the city of New York. Seconded and carried.

Dr. A. Vander Veer, Albany, Chairman of the Committee on Prize Essays, sent a communication stating that the three members of the committee were in favor of awarding the Merrit H. Cash prize to the author writing under the title, "Jus Suum Cuique," and honorable mention to the one giving the title "Dolores."

The President opened the envelopes and announced the winner of the Merrit H. Cash prize for 1913, as Dr. William Kirk, Jr., Troy. The title of winning essay was "Brown Sequard Paralysis; Review of Subject with Summation of Cases, Report of Case Resulting from Stab Wound with Autopsy."

Winner of honorable mention was Dr. George L. Rohdenburg, New York, for an article entitled, "A Survey of the Malignant Tumor Problem."

THE SECRETARY: I have the following letter from Dr. Walter Lester Carr announcing his resignation:

Dear Doctor Townsend: As I am unable to be present at the meeting of the House of Delegates, I desire to resign as alternate to the American Medical Association.

WALTER LESTER CARR.

April 27, 1913.

On motion, duly seconded, the resignation was accepted.

THE SECRETARY: I have the following communication from the Department of the Interior:

DEPARTMENT OF THE INTERIOR.

Hot Springs Reservation.
Office of Medical Director
Hot Springs, Ark.

March 25, 1913.

DR. JOHN F. W. WHITEBECK, President Medical Society of the State of New York, 800 East Avenue, Rochester, N. Y.

My Dear Doctor:

The Secretary of the Interior has been charged by Congress with the administration of the Hot Springs Reservation upon which are located the hot springs of Arkansas. The American Medical Association at the Los Angeles 1911 Session passed a resolution urging the Government to make a thorough study of the

mineral springs of this country and a bill has since been introduced in Congress providing for research work by competent men to determine the physiological and therapeutic effects of the hot water from these springs and to report upon the application of the waters to the relief and cure of disease. The Department of the Interior in administering the affairs of the federal reservation upon which the springs are located, in formulating rules with reference to the use of the water as a remedial agent and in supervising the operation of the bathhouses, is providing for the care of the sick, and desires to better the service along scientific and ethical lines, and to place in the hands of the profession and of the public accurate and reliable information concerning the use of the water. The research contemplated is of general rather than local interest as patients come from every state to take the baths, for many diseases, and frequently by the advice of their home physicians.

Under separate cover there has been transmitted to you the annual report from this office, on page 14 of which will be found a copy of the bill. There are also enclosed copies of a few letters received from prominent medical men, resolutions passed by medical societies and editorials from medical journals received since the report of the Secretary on the bill was printed.

It is desired to have this bill considered by all of the state medical societies at their next annual meetings and to obtain from them in the form of resolutions, opinions as to whether or not the Government should undertake this work. Will you not bring the matter up for consideration by your state society or place it in the hands of some member who will attend the annual meeting and who will interest himself in the subject?

I am sure that your assistance will be greatly appreciated by the officials of the department in Washington as well as by myself.

Very sincerely yours,

HARRY M. HALLOCK,

Medical Director.

THE PRESIDENT: What action will you take on this communication?

THE SECRETARY: I move it be referred to the Council with power so that they can investigate and act upon the matter.

Motion seconded and carried, and the communication was so referred.

The secretary read the resignation of Dr. John B. Harvie as president of the Third District Branch, which was referred to this branch.

THE SECRETARY: I have a "petition of the Medical Society of the Borough of the Bronx in the matter of its application for a charter for a county society as a constituent body of the Medical Society of the State of New York."

PRESIDENT: What disposition will you make of this petition?

DR. WALL: I move that it be referred to the Council with power to investigate. Seconded.

DR. KOPETZKY: To facilitate matters, I move as an amendment that it be the sense of this House that the members of the Medical Society of the State of New York resident in the new county of the Bronx be organized into a county medical society which will be recognized as in affiliation with the state society, this organization to be irrespective of whether the members belong to one or the other or all local societies now in the Bronx.

The amendment was seconded, accepted, and the original motion as amended was carried.

THE PRESIDENT: We are under the head of New Business. Is there any new business?

DR. WILLIAM FRANCIS CAMPBELL: I desire to present the following preambles and resolutions:

WHEREAS, There exists on finished surgical instru-

ments imported into this country a duty of 50 per cent., and instruments in the rough are admitted with a duty of 15 per cent., while scientific instruments and apparatus are admitted free; and

WHEREAS, This condition puts an unnecessary tax on all physicians in the purchase of their instruments, either domestic or foreign, which is both unjust and unnecessary; therefore, be it

Resolved, That we, the members of the Medical Society of the State of New York, respectfully petition the Congress of the United States now in session assembled to pass the bill introduced by Hon. S. Sherley, taking the duty off the aforesaid articles, since instruments and medical appliances used in the practice of medicine and surgery in saving life and alleviating human suffering should be accorded the same economic privilege as those used for teaching.

Resolved, That a copy of these resolutions be sent to every member of Congress from the State of New York, and that they be printed in the NEW YORK STATE JOURNAL OF MEDICINE.

It was moved and seconded that the resolutions be adopted. Carried.

DR. THOMAS H. MCKEE: The Medical Society of the County of Erie, at its annual meeting, held December 16, 1912, passed the following resolution unanimously:

Resolved, That the Medical Society of the State of New York be asked to consider the desirability of attempting to educate the profession, and the Board of Regents to see the necessity for establishing a special, voluntary degree in surgery (possibly later in other subjects) analogous to the F. R. C. S., which the public will learn to recognize as an assurance of the holder's skill. (Referred to Reference Committee.)

DR. MCKEE: The Medical Society, County of Erie, at its annual meeting, held December 16, 1912, passed the following resolution unanimously:

Resolved, That the Medical Society of the State of New York be asked to exert their influence to secure from the legislature an amendment to the criminal code making it a felony for the holder of a medical license to solicit, offer, give or receive a secret division of a professional fee, as a conviction under such a law would result in cancelling the holder's license. (Referred to Reference Committee.)

DR. WILLIAM H. THORNTON: I move that the House of Delegates do now adjourn until 9.30 A. M., Tuesday, and that the first order of business shall be the election of officers.

Motion seconded and carried.

Whereupon the House adjourned at 10.15 P. M.

ADJOURNED MEETING OF THE HOUSE OF DELEGATES.

The adjourned meeting of the House of Delegates was called to order at 9:30 A. M., Tuesday, April 29, 1913. Dr. John F. W. Whitbeck, President, in the chair; Dr. Wisner R. Townsend, Secretary.

The nomination and election of officers being in order, the following officers were nominated and duly elected:

President, Dr. William Francis Campbell, Brooklyn; First Vice-President, Dr. W. Stanton Gleason, Newburgh; Second Vice-President, Dr. G. F. Blauvelt, Nyack; Third Vice-President, Dr. Myron B. Palmer, Rochester; Secretary, Dr. Wisner R. Townsend, New York, re-elected; Treasurer, Dr. Alexander Lambert, New York, re-elected.

Chairman of the Committee on Scientific Work, Dr. Thomas J. Harris, New York City, re-elected; Chairman of the Committee on Legislation, Dr. L. K. Neff, New York; Chairman of the Committee on Public Health, Dr. J. M. Van Cott, Brooklyn, re-elected; Chairman of the Committee on Arrangements, Dr. Charles H. Richardson, New York.

The President appointed as tellers to count the votes for delegates to the American Medical Association, Drs. Samuel Lloyd, Joseph J. O'Connell, and Ralph R. Fitch.

In connection with the election of delegates to the American Medical Association, the Secretary stated that the blanks which had been forwarded to the Society to be filled out, signed by the President and Secretary of the State Society, and returned to the Secretary of the American Medical Association, 535 Dearborn Avenue, Chicago, including the certificate of election of delegates, contained the following clause, "Note the standing rules printed on the back of this form." The printed form was as follows:

EXTRACTS FROM THE BY-LAWS OF THE AMERICAN MEDICAL ASSOCIATION.

Chapter III.—Qualifications, Term, Apportionment, and Registration of Delegates.

SECTION 1. Delegates must have been members of the American Medical Association two years. No one shall serve as a member of the House of Delegates who has not been a member of the American Medical Association for at least the two years immediately preceding the meeting of the House of Delegates at which he is to serve.

SEC. 2. Term.—Delegates and alternate from constituent associations shall be elected for two years. Constituent associations entitled to more than one representative shall elect them so that one-half, as near as may be, shall be elected each year. Delegates and alternates elected by the Sections, or delegates appointed from the United States Army, United States Navy and United States Public Health and Marine Hospital Service, shall hold office for one year.

STANDING RULES.

At the meeting of the House of Delegates of the American Medical Association, held at Atlantic City, June 6, 1912, the following Standing Rules were adopted for the guidance of the Committee on Credentials of the House of Delegates:

Rule 1.—Credentials shall be of two parts. The first part shall be sent to the office of the Secretary of the American Medical Association by the Secretary of the constituent association and shall be a list of delegates for that association, with an alternate designated for each delegate to act in his stead when so authorized by the principal.

Rule 2.—Each delegate shall be furnished with a credential by the Secretary of the association by which he is elected on a prescribed form furnished by the Secretary of the A. M. A., which shall give the date and term for which he was elected and who was elected to act as alternate for him in case of his inability.

Rule 3.—A delegate, on presenting himself to the Committee on Credentials, may be seated even though he may not present part 2 of his credentials, provided he is properly identified as the delegate who was elected by his association and whose name appears on the Secretary's record.

Rule 4.—No alternate may be seated unless his credentials meet the same requirements as designated for the delegate and he can show written evidence that he is empowered by his delegate to act for him.

And on the opposite side of the page were the delegates and alternates arbitrarily arranged by the A. M. A. as follows: Delegate, William D. Johnson; Alternate, Walter Lester Carr; Delegate, Grant C. Madill; Alternate, Owen E. Jones; Delegate, Dwight H. Murray; Alternate, Rosalie S. Morton; Delegate, Wendell C. Phillips; Alternate, Leo H. Neuman; Delegate, James P. Warbasse; Alternate, Julius Ullman.

The attorney for the State Society, Mr. Lewis, was consulted as to the legality of these papers because of

the fact that the standing rules adopted at Atlantic City conflicted with the by-laws, which was contrary to Robert's Rules of Order, which are in force in the A. M. A. The Secretary sent a protest to the A. M. A., but so far has not received any definite reply in the matter, except that Dr. Craig believes the standing rules to be right and proper. The opinion of Mr. Lewis is herewith appended.

April 26, 1913.

D. Wisner R. Townsend,

Secretary of the Medical Society of the State of New York,

17 West 43d Street, New York City.

MY DEAR DOCTOR SECRETARY:

I have your letter of request for an opinion as to the effect of the American Medical Association's resolutions in regard to the election of delegates which you sent me.

In my opinion these resolutions conflict with the by-laws of the American Medical Association, and the resolution also conflicts with the provisions of Robert's Rules of Order, which the American Medical Association accepts as its governing authority in parliamentary matters.

The delegates elected at the last annual meeting of the Medical Society of the State of New York were elected pursuant to the by-laws of the American Medical Association, and any resolution passed at the last annual meeting of the American Medical Association would of course have no binding effect upon the delegates already elected. A different question is presented with reference to the delegates to be elected at this annual meeting of the Medical Society of the State of New York.

I am of the opinion that the delegates to be elected at this present meeting of the Medical Society of the State of New York, should be elected in conformity with the resolution passed, although it contravenes the by-laws of the American Medical Association, and although in my opinion such a resolution is absolutely illegal. But it is proper for me to add that the delegates from the State of New York should immediately see to it that this resolution is rescinded, because it is likely to interfere with the proper representation from the various states, is in contravention of the Statute Law of the American Medical Association, and violates even Robert's Rules of Order.

The American Medical Association's by-laws, and constitution provide ample means of changing its by-laws, and they should not be changed in such an informal way as by the adoption of a resolution.

To enter into an argument as to the importance of attacking this resolution at the next meeting of the American Medical Association, is unnecessary. The meeting place of the national body in various states makes it imperative that there be no hard and fast rule with reference to delegates and their alternates. Any alternate should be allowed to represent any delegate, otherwise it might often occur that a State would be deprived of representation. The sooner the New York delegates attend to this matter, the better for the interests of the American Medical Association.

Faithfully yours,

(Signed) JAMES TAYLOR LEWIS.

DR. WENDELL C. PHILLIPS: I think it would be well for the secretary to give us his views regarding this communication from the secretary of the American Medical Association.

THE SECRETARY: I will endeavor in a few words to explain this action, although in some respects it is unexplainable. In the first place, the By-Laws of the American Medical Association give to the differ-

ent state societies the right to elect delegates to the American Medical Association, provided they had been members for two years of that body, and stated that the delegates and alternates should be elected for two years. We have complied strictly with the By-Laws. The Committee on Credentials at the last meeting of the American Medical Association, held in Atlantic City, had some trouble with delegates from Illinois, one man having no less than three alternates with certificates, all duly signed and vouched for. These vouchers were presented to the Committee on Credentials and it put them in a very embarrassing position, and to prevent a repetition of such a state of affairs a resolution was then introduced in the House of Delegates on the last day formulating these new rules which will prevent delegates in the future from designating their alternates. Now, they come to us and arbitrarily assign certain alternates to certain delegates. This arrangement the Secretary of the American Medical Association justifies by these rules, which in my opinion is no justification whatever, because if the rules are invalid and illegal, they are not binding. Any law is a law, however, until it is repealed or declared unconstitutional by some higher authority, and the Medical Society of the State of New York not being a higher authority can only make a protest. The American Medical Association through its House of Delegates, can repeal these Rules, and we shall have to obey them until they are repealed. In the meanwhile we will have to designate each individual as the alternate for a particular member. In the place of Dr. Carr, we will have to elect some one for alternate of Dr. Johnson, of Batavia, until these rules are set aside.

In electing delegates I would like to make the suggestion that the delegate receiving the highest number of votes shall be No. 1, and so on down to the last delegate; that the House then proceed to elect the alternates, and the alternate receiving the highest number of votes shall be declared the alternate for the delegate No. 1 and so on. This will simplify the election.

DR. PHILLIPS: I move we adopt the suggestion of the secretary.

Motion seconded and carried.

On motion, duly seconded and carried, Dr. Irving D. Steinhardt, of New York, was elected alternate of Dr. Johnson, of Batavia, delegate to the American Medical Association.

The following were placed in nomination for delegates for 1913-1914: Drs. Floyd M. Crandall, New York City; J. C. MacEvitt, Brooklyn; John O. Polak, Brooklyn; Henry L. Elsner, Syracuse; E. A. Vander Veer, Albany; Wesley T. Mulligan, Rochester; Anthony Bassler, New York City; T. H. McKee, Buffalo; J. M. Lynch, New York City; Charles A. Wall, Buffalo; H. D. Furniss, New York City; S. W. S. Toms, Nyack; G. E. Davis, New York City.

The following received a majority of the votes cast: Henry L. Elsner, 77; Floyd M. Crandall, 77; E. A. Vander Veer, 65; Wesley T. Mulligan, 59; S. W. S. Toms, 50; John O. Polak, 49.

Upon motion, duly seconded and carried, they were declared elected delegates to the American Medical Association.

Upon motion, duly seconded and carried, the following were elected alternates: Dr. J. M. Lynch, New York City, elected as alternate for Dr. Elsner, received 48 votes; Dr. H. D. Furniss, of New York City, elected as alternate for Dr. Crandall, received 42 votes; Dr. Charles A. Wall, Buffalo, elected as alternate for Dr. Vander Veer, received 42 votes; Dr. J. C. MacEvitt, Brooklyn, elected as alternate for Dr. Mulligan, received 38 votes; Dr. T. H. McKee, Buffalo, elected as alternate for Dr. Toms, received 30 votes, and Dr. G. E. Davis, New York City, elected as alternate for Dr. Polak, received 23 votes.

DR. CHARLES A. WALL, Chairman, presented the
REPORT OF REFERENCE COMMITTEE.

The Reference Committee begs leave to report that after careful examination of the annual reports, they recommend that action be taken thereon, as follows: The new amendments to the By-Laws make it unnecessary to appoint any new special committees, as they may be created as necessity arises.

We recommend that the question of co-operation of the Committee on Legislation with that of the American Medical Association be referred to the Council with power.

We recommend that the Society again put itself on record as being in favor of a National Department of Health with the secretary a member of the Cabinet.

The recommendation of the president regarding industrial disease laws should be referred to the Committee on Legislation.

We recommend that the present five sections be continued.

We find that there is no necessity to act on the recommendation of the Secretary, as the question was settled last evening.

It is advisable that a special committee be appointed to investigate the subject of the prosecution of illegal practitioners and report next year.

The Committee on Legislation is requested to confer with the county committees on legislation as to the necessary action needed to carry out our present state laws.

There seems to the committee no need to take any action on the recommendations of the counsel.

We recommend that the House approve the bill reported by the Committee on the Regulation of the Introduction of Medical Expert Testimony, and that the committee be continued.

There is nothing in the other reports that requires action by the House.

As to the resolution offered by the Erie County Medical Society, in regard to establishing a special voluntary degree in surgery, we recommend that it be referred to the Council for their consideration.

With reference to the resolution offered by Erie County Medical Society concerning the division of fees, we recommend that it be referred to the Committee on Legislation.

Signed, C. A. WALL,
EBERT LE FEVRE,
JAMES W. FLEMING,
G. L. PECKHAM,
E. T. BUSH.

DR. PHILLIPS: I move the adoption of the report with the exception of that part relating to the continuance of the five sections, and that this matter be left to the power and discretion of the Council.

Motion seconded and carried.

DR. GEO. HENRY FOX, of New York, nominated for honorary membership Professor John G. Adami, Montreal. (To lie over one year, according to By-Laws.)

DR. E. ELIOT HARRIS: The communication from Mr. Lewis, which was read by the secretary, is a very important one, and I move that it be referred to the delegates from this society to the American Medical Association with power to act, and that each delegate receive a copy of the letter of Mr. Lewis.

DR. WALL: I second the motion. Carried.

DR. MURRAY: I would like to introduce the following resolution:

Resolved, That this Society request each county society and each district branch society to pass resolutions endorsing the expert medical testimony bill which is now before the legislature, and if it does not pass this year, that those resolutions be forwarded to the proper committees next winter at the proper time.

Motion seconded by several and carried.

DR. WALL: I understand, the Chairman of the Com-

mittee on Expert Testimony employed a lawyer to look over the various laws and to draft this bill; therefore, we should offer him a slight honorarium. I move that twenty-five dollars be set aside as a honorarium for the lawyer who drew up the bill, and that the matter be referred to the Council with power.

Motion seconded and carried.

The chair appointed as a committee to study the question of illegal practitioners in the state Dr. R. P. Higgins, Cortland, Chairman; Dr. W. J. Peckham, Poughkeepsie, and Dr. C. H. Richardson, New York.

DR. LE FEVRE: If there is no further business to come before the House, I move we adjourn *sine die*.

Motion seconded and carried.

WISNER R. TOWNSEND,
Secretary.

The Medical Society of the State of New York ANNUAL MEETING.

President Whitbeck called the One Hundred and Seventh Annual Meeting of the Society to order in Convention Hall, Rochester, at 11.30 A. M., Tuesday, April 29, 1913, for the transaction of scientific business, and introduced the Rev. R. R. M. Converse, LL.D., who invoked divine blessing.

The president requested the following delegates from other state societies, if present, to occupy seats on the platform: Dr. G. R. Anderson, Brattleboro, Vermont; Dr. Orlando B. Douglas, Concord, N. H.; Dr. Chas. S. Little, Thiells, N. H.; Dr. P. H. Seelye, Springfield, Mass., and Dr. J. B. Thomas, Pittsfield, Mass.

None of these delegates responded.

Dr. Wesley T. Mulligan, Chairman of the Committee on Arrangements, said the committee had worked hard and arrangements for the meeting of the various sections were as complete as possible.

He hoped the members would visit the scientific exhibit, as it was well worth seeing. Furthermore, the members should not forget the exhibit.

There would be a dance this evening, and he hoped the members would attend it as they would find it to be a very enjoyable affair.

The annual dinner would occur on Wednesday night, and he expressed the hope that as many members as could do so attend this function.

It gave him great pleasure to welcome the members to Rochester.

THE PRESIDENT: The next order is the reading of the minutes of the last annual meeting by the Secretary.

THE SECRETARY: As these minutes have been published in the JOURNAL, I move they be adopted as printed without being read.

Motion seconded and carried.

THE PRESIDENT: We have with us today the Hon. Hiram H. Edgerton, Mayor of Rochester, who will deliver an address of welcome.

ADDRESS OF WELCOME BY MAYOR EDGERTON.

Mr. President, Ladies and Gentlemen: I feel somewhat embarrassed and very much honored in being asked to come here this morning and extend to you a welcome on behalf of the citizens of Rochester. We are to be congratulated in having you here with us, and you are to be congratulated on the wisdom displayed in selecting Rochester as your meeting place. We have a beautiful city, but I am not going to tell you much about it, as your hosts will see that you are properly taken care of and shown the sights while here. Perhaps there are some whom you have left home that are to be congratulated. They will have a brief respite, and one more chance possibly.

I have heard a great many stories told at the expense of the doctors. I am only going to tell you one which I can vouch for. A dear old lady, who had been ill for many moons, and was being cared for daily by her family doctor without very much relief, decided she would change physicians. She did so with the same result. One morning she said to the members of her family, "Oh, dear, if I had only stuck to Dr. John, I would have been at rest long ago."

It has been my duty and pleasure to extend welcomes to a great many conventions, but none of them so distinguished as this. I extend to you the most cordial greetings, and trust that your deliberations here will not only be profitable to you, but will be of great benefit to us. I extend to you, as far as possible, the freedom of the city. Go where you will, I am sure you will find a hearty welcome.

Again, I thank you for inviting me here. Your committee will take care of you.

THE PRESIDENT: It gives me great pleasure to introduce to you Professor John G. Adami, of McGill University, Montreal, who will deliver the oration on Medicine, entitled "Certain Elementary Concepts in Education Applied to Medicine."

Professor Adami was warmly received. He then addressed the Society on the above subject. See page 235.

At the conclusion of Professor Adami's remarks, President Whitbeck said: The distinguished honor of presiding over the deliberations of this learned society is largely due to the profound respect which we owe to the high office of president.

The great organized body of the commonwealth of New York may be likened unto the ship of state. One may address it as Longfellow did "the body politic." Your ship's captain and the lieutenant commander have striven in accord to make your mission felt in preventive and progressive medicine, and we bespeak for the convention a full measure of success. With one voice let us exclaim:

"Thou, too, sail on, O ship of state
Humanity with all its fears, with all the hopes
of future years,
Is hanging breathless on thy fate.
Fear not each sudden sound and shock,
'Tis of the wave, and not the rock.
In spite of false lights on the shore,

Sail on; nor fear to breast the sea,
Our hearts, our hopes, are all with thee.
Our hearts, our hopes, our prayers, our tears,
Our faith triumphant, all our fears,
Are all with thee, are all with thee."

There being no further business, the meeting adjourned.

WISNER R. TOWNSEND, *Secretary.*

MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held in Convention Hall, Rochester, May 1, 1913, at 11 A. M. Dr. William Francis Campbell, President, in the chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President and on roll call the following answered to their names:

William Francis Campbell, Silas J. Banker, Luzerne Coville, Myron B. Palmer, Otto Pfaff, William T. Shanahan, Wisner R. Townsend, and Joshua M. Van Cott.

The Secretary read the minutes of the last meeting held in Rochester, December 6, 1912.

Moved, seconded and carried that the minutes of the last meeting be adopted as read.

Moved, seconded and carried, that all communications received from the House of Delegates be taken up at the next meeting.

Moved, seconded and carried, that Dr. Robert Selden, Vice-President, be made President of the Third District Branch in place of Dr. Harvie resigned.

Moved, seconded and carried, that Dr. Wm. H. Park be appointed Chairman of the Committee on Medical Research.

Moved, seconded and carried, that the Council confirm the action of the Finance Committee in the appointment of Mr. James Taylor Lewis as Counsel for the year 1913.

Moved, seconded and carried, that Mr. Alfred H. Wicks be appointed auditor for the year 1913 at a salary of \$200 a year.

Moved, seconded and carried, that the President appoint a Committee of three from the Council to pass on amendments to county by-laws.

The President appointed Lewis K. Neff, William T. Shanahan and Luzerne Coville.

Moved, seconded and carried, that a Committee on Finance be appointed to consist of the President, First Vice-President and Treasurer.

Moved, seconded and carried, that on and after July 1, 1913, no member of the Medical Society of the State of New York shall receive the Directory, the New York State Journal of Medicine, nor be entitled to malpractice defense until his county dues and state assessments have been paid.

Moved, seconded and carried, that in order to encourage increase in membership for the year 1913, all members who are elected between October 1, 1913, and December 31, 1913, and who shall pay during that period their state assessment may have the same credited to 1914, provided that they request it. All whose assessments are so credited shall be entitled to malpractice defense for 1913, but shall not be entitled to receive the Directory or the Journal for 1913. State assess-

ments so credited shall be immediately forwarded by the County Treasurer to the State Treasurer.

Moved, seconded and carried, that the chairmen of standing committees present for endorsement at the May meeting of the Council, the names of the members of their committees.

There being no further business the meeting adjourned to meet on Friday, May 16th, at 2 P. M., at the offices of the State Society, 17 West 43rd Street, New York City.

WISNER R. TOWNSEND,
Secretary.

SECTION OFFICERS ELECTED

APRIL 30, 1913.

Medicine:

C. Stover, Chairman, Amsterdam.
G. R. Satterlee, Secretary, New York City.

Surgery:

L. H. Hotchkiss, Chairman, New York City.
G. D. Gregor, Secretary, Watertown.

Eye, Ear, Nose and Throat:

T. H. Halsted, Chairman, Syracuse.
P. Fridenberg, Secretary, New York City.

Gynecology and Obstetrics:

R. McPherson, Chairman, New York City.
J. A. Sampson Secretary, Albany.

Pediatrics:

T. S. Southworth, Chairman, New York City.
J. R. Roby, Secretary, Rochester.

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF
DUTCHESS.

REGULAR MEETING, AT POUGHKEEPSIE, APRIL 9, 1913.

SCIENTIFIC SESSION.

SYMPOSIUM ON VACCINE THERAPY.

"In Tuberculosis and Typhoid," L. H. Marks, M.D., Poughkeepsie.

"In Ear Inflammations," F. J. Mann, M.D., Poughkeepsie.

"In Skin Troubles," C. E. Lane, M.D., Poughkeepsie.

"In Kidney Cases," R. A. Hayt, M.D., Fishkill.

"In Surgery," J. E. Sadlier, M.D., Poughkeepsie.

Dr. R. A. Hayt reported a case of Hour-Glass Stomach.

MEDICAL SOCIETY OF THE COUNTY OF
SCHENECTADY.

REGULAR MEETING, AT SCHENECTADY, APRIL 8, 1913.

SCIENTIFIC SESSION.

"Medical Aspects of Eugenics," C. C. Duryee, M.D., Schenectady.

"The Most Effective Method of Asexualization of the Male," Wm. P. Faust, M.D., Schenectady.

"The Most Effective Method of Asexualization of the Female," Harvey P. Groesbeck, M.D., Schenectady.

MEDICAL SOCIETY OF THE COUNTY OF
ALBANY.

REGULAR MEETING, AT ALBANY, APRIL 9, 1913.

SCIENTIFIC SESSION.

"The Present Status of Renal Functional Tests with Especial Reference to Phenolsulphonophthalein," N. K. Fromm, M.D., and J. F. Southwell, M.D., Albany.

"The Surgical Aspect of Certain Types of Bone and Joint Lesions, with Lantern Slide Demonstration," J. L. Bendell, M.D., Albany.

MEDICAL SOCIETY OF THE COUNTY OF
SARATOGA.

REGULAR MEETING, SARATOGA SPRINGS, MARCH 26, 1913.

SCIENTIFIC SESSION.

"The Diagnosis and Treatment of Pulmonary Tuberculosis in the Early Stage," Horace J. Howk, M.D., Med. Supt., Mt. McGregor Sanatorium.

"Blood Pressure; Its Significance," A. Sherman Downs, M.D., Saratoga Springs.

"Diagnostic Aids," J. S. Brotherhood, M.D., Saratoga Springs.

"Lane's Plates in the Treatment of Fractures," G. Scott Towne, M.D., Saratoga Springs.

"Report of Cases," F. A. Palmer, M.D., Mechanicsville.

"Report of Cases," Arthur J. Leonard, M.D., Saratoga Springs.

"Historical Note," J. B. Ledlie, M.D., Saratoga Springs.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

REGULAR MEETING, AT BUFFALO, APRIL 21, 1913.

BUSINESS SESSION.

The Chairman of the Board of Censors reported the prosecution of a woman "Spiritual Healer," who has been driven out of business.

A rag picker, prescribing medicine for which he charged \$20, when arrested, returned the amount to his victim, and was also fined \$50.

Other cases under investigation were disposed of in a manner to convince the violators that it is unsafe to tamper with the medical laws.

The question of a proposed amendment to by-laws whereby there would be constituted three classes of members in the A. M. A. was brought to the attention of the meeting and the subject matter was referred to the delegates to the State Society.

A committee to investigate the question of fees for examination in lunacy was appointed.

Attention was directed to the coming meeting of the State Society and members urged to attend.

SCIENTIFIC SESSION.

"The Foods, Air, Water and the Salts," Henry R. Hopkins, M.D., Buffalo.

"Sane and Insane," Sydney A. Dunham, M.D., Buffalo.

LEGISLATIVE NOTES.

BILLS INTRODUCED INTO THE LEGISLATURE.

MARCH 21 TO APRIL 18, 1913.

IN SENATE.

Inserting new Article 20-a in Education Law, providing for medical inspection of pupils attending public schools in this state, such inspection to include the service of a trained and registered nurse, if one is employed, and for the examination of pupils for the existence of diseases or physical defects and for testing the eyes and ears. Medical inspectors are to be employed by the Board of Education in each city and union free school district. (Same as A. 1897.) By Mr. Blauvelt. To Public Education Committee. Printed Nos. 1696, 2275. Int. 1415.

Amending Subdivision 6, Section 2, Sections 93, 62, 64, Tenement House Law, relative to exterior stairs, court stair recess and to the lighting and ventilation of water closets and bathrooms, and to the minimum size of rooms in tenement houses. (Same as A. 1582.) By Mr. Boylan. To Cities Committee. Printed No. 1767. Int. 1439.

Adding new Section 20, Insanity Law, enlarging the

powers of the State Hospital Commission, relative to the detention and care of insane persons prior to their transfer to institutions for the insane. (Same as A. 1931.) By Mr. Blauvelt. To Judiciary Committee. Printed No. 1803. Int. 1467.

Authorizing the selection of lands as a site for the Western New York State Custodial Asylum, establishing said asylum, and appropriating \$1,000. By Mr. Ramsperger. To Finance Committee. Printed No. 1874. Int. 1520.

Amending Section 17, Chapter 646, Laws of 1905, by permitting the Sanitary Trunk Sewer Commission for Westchester county to authorize the use of such portions of the sewer as may be completed and extending the term of office of the commissioners to two years and eleven months from date of their organization. (Same as A. 2096.) By Mr. Healy. Printed Nos. 1965, 2146. Int. 1568.

Amending Section 1, Chapter 822, Laws of 1911, relative to the appropriation for additional land for the New York Custodial Asylum for Feeble-Minded Women at Newark. (Same as A. 2091.) By Mr. Foley. To Finance Committee. Printed No. 2001. Int. 1592.

Incorporating the Doctor J. H. Dye Medical Institute. By Mr. Ramsperger. To Judiciary Committee. Printed No. 2026. Int. 1615.

Adding new Section 1242 to Greater New York Charter, providing that any licensed physicians shall have in each borough the same powers as to making and filing certificates of death within such borough that he has with respect to death of persons attended by him in the borough in which he resides. By Mr. Seeley. To Cities Committee. Printed No. 2142. Int. 1688.

To enable the city of Rome to provide for a more adequate and efficient treatment of persons suffering from pulmonary tuberculosis and creating the Rome Anti-Tubercular Commission. By Mr. Peckham. To third reading and Cities Committee. Printed No. 2225. Int. 1721.

Adding new Article 17-a, Sections 343-a to 343-c, Public Health Law, providing for an inspection by the State Health Commissioner, of kitchens of all hotels, public restaurants, public dining rooms, dining cars and steamboats, and of all public, penal and charitable institutions, to enforce the provision prohibiting the use of utensils or dishes not previously cleansed in a sanitary manner. Violation of the act is made a misdemeanor. By Mr. Foley. To Public Health Committee. Printed No. 2230. Int. 1726.

IN ASSEMBLY.

Adding new Subdivision 4, Section 232, Public Health Law, providing for the issuance of licenses to practice as licensed pharmacists, in certain cases. By Mr. J. D. Kelly. To Public Health Committee. Printed No. 2492. Int. 2111.

Amending Section 198, Public Health Law, by directing the Regents to issue a dental license to an applicant who has practiced for more than twenty-five years without the state but within the United States, but who is a graduate of a standard dental school and holds a license to practice in any other state. By Mr. Caughlan. To Public Health Committee. Printed No. 2610. Int. 2165.

Striking out Section 1202-a, Greater New York Charter, and inserting a new Section 1202-a, authorizing the Board of Health to appoint and organize a corps of special officers for enforcing the Sanitary Code and other health laws. The police detailed to perform this work are to be transferred. (Same as S. 1674.) By Mr. McKee. To Cities Committee. Printed No. 2636. Int. 2192.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A TEXT-BOOK OF PHYSIOLOGY. By ISAAC OTT, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia; Ex-fellow in Biology, Johns Hopkins University; Consulting Neurologist, Norristown Asylum, Pa.; Ex-President of American Neurological Association, etc. Fourth edition, revised and enlarged. Illustrated with 434 half-tone and other engravings, many in colors. Philadelphia. F. A. Davis Company, Publishers. 1913.

DISEASES OF WOMEN—A Clinical Guide to Their Diagnosis and Treatment. By GEORGE ERNEST HERMAN, M.D., Lond., F.R.C.P., Consulting Physician to the London Hospital, Late President of the Obstetrical Society of London, etc. Enlarged Edition revised by the Author, assisted by R. DRUMMOND MAXWELL, M.D., Lond., F.R.C.S., Eng., Assistant Obstetric Physician to the London Hospital, etc. Illustrated with eight full-page color plates, and 292 figures in the text. Octavo. Price, \$7.50, net. Funk & Wagnalls Company, New York, Publishers.

SOLIDIFIED CARBON DIOXIDE in the successful treatment of Cutaneous Neoplasms and other Skin Diseases, with Special Reference to Angioma, Epithelioma and Lupus Erythematosus. Fully illustrated by RALPH BERNSTEIN, M.D., Philadelphia, Pa., Clinical Instructor in Skin Diseases, Hahnemann Medical College, Philadelphia, Pa., Consulting Dermatologist to the Women's Southern Homœopathic Hospital, Philadelphia, Pa., Consulting Dermatologist to the J. Lewis Crozer Hospital and Home for Incurables, Chester, Pa., Consulting Dermatologist to House of Detention for Juveniles, Philadelphia, Pa., Dermatologist to West Philadelphia General Homœopathic Hospital and Dispensary; Dermatologist to Hahnemann Hospital Dispensary, Philadelphia, Etc. Frank S. Betz Co., Hammond, Ind.

NERVOUS AND MENTAL DISEASES. For Students and Practitioners. By CHARLES S. POTTS, M.D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia. New (third) edition, enlarged and thoroughly revised. In one 12mo volume of 610 pages, with 141 engravings and 6 full-page plates. Price, cloth, \$2.75, net. Lea & Febiger, Publishers. Philadelphia and New York, 1913.

TRANSACTIONS OF THE FOURTEENTH ANNUAL MEETING of the American Gastro-Enterological Association. Held at Philadelphia, Pa., April 19 and 20, 1911. Officers: President, WALTER B. CANNON, Boston; Vice-Presidents, J. A. LICHTY, Pittsburg, W. G. MORGAN, Washington; Secretary and Treasurer, FRANKLIN W. WHITE, Boston; Councillors, S. J. MELTZER, New York, J. FRIEDENWALD, Baltimore, C. D. AARON, Detroit; Committee on Admission and Ethics, H. W. BETTMAN, Cincinnati, A. A. JONES, Buffalo, J. KAUFMANN, New York.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume II, Number 2, April, 1913. Published by-monthly by W. B. Saunders Company, Philadelphia and London.

DEATHS.

P. H. JOHNSON, M.D., Adams, died April 16, 1913.

FRANK LITTLE, M.D., Brooklyn, died April 4, 1913.

FRANCIS PARKER KINNICUTT, M.D., New York City, died May 2, 1913.

JOHN D. MACPHERSON, M.D., Akron, died October 31, 1912.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

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Vol. XIII.

JUNE, 1913

No. 6

EDITORIAL DEPARTMENT

THE NEOPHYTE.

ONCE upon a time a woodchopper was asked if he could play the fiddle. "I don't know," he replied, "but I can try." The writer has not chopped wood since he was a youngster, living on the banks of the Mississippi, and then only under parental compulsion, but the woodchopper's answer serves as an admirably pointed rejoinder to the query: "Can we edit the NEW YORK STATE JOURNAL OF MEDICINE?" It is a chemical law that unlike particles attract; and so, when our modesty and our assumption meet in violent contact there results a *tertium quid* which we hope, upon analysis, will prove to be—an editor.

The honor of our election to the editorship of the JOURNAL has not filled our soul with unalloyed bliss, having reached the age when slippered ease and the solace of "My Lady Nicotine" are more conducive to rest of body and peace of mind than the constant cry for "copy." We are somewhat disturbed over the prospect of a discontinuance of those happy moments of indolence, but having crossed the Rubicon of acceptance and buckled on our armor which,

while it may not be impervious to javelin and arrow, we beseech the God of War that the wounds be not mortal.

THE PITY OF IT.

TO the Bureau of Social Hygiene the public owes a debt of gratitude for its exposure of vice as it exists in New York City, particularly its horrifying commercial aspect, through a report recently published by its chief investigating agent George J. Kneeland. The investigation was cold, dispassionate, truthful and convincing. The facts are so plainly stated that they require no impassioned verbal embellishment to make them sink into one's soul and wring from the lips a cry of impotent anger. The report pulls from off this festering mass the cover of idiotic sentimentality and exposes its rottenness to the sun of reason. The surgeon cannot cure the foul-smelling, corroding cancer, but he can cut away its putrefying elements, and cleanse, and lessen its awful ravages. At its inception he can cure. So with prostitution: it has existed since the commencement of time and will always exist. It can be lessened by the convic-

tion of its commercial exploiters, by the united unceasing and watchful efforts of social betterment workers in lifting from the mire the young girl but recently fallen, by closure or constant surveillance of dance halls, saloons and low resorts, by a law requiring the registration of every inmate of houses of ill-fame with the Department of Health on the ground that such inmates are a menace to the public health and morals. Until a few fanatics, obsessed with the ideal of the unholiness of the recognition of the vice which surrounds them everywhere, see a great light, medical supervision of prostitution will be combatted.

It is truly appalling when one considers the moral and physical destruction which is daily occurring in this and other large cities through prostitution. According to the report of the Bureau, in New York City there are 15,000 prostitutes and 150,000 males who frequent the houses of ill repute which shelter these unfortunate, pitiable creatures. Would that the moral transgression were the only evil, but when it is stated that 90 per cent. of these women are infected with venereal disease, compute the ratio of men who go forth infected from their embraces, to disseminate the infection, God only knows where. We of the medical profession can see the innocent bride in her youthful beauty, blushing beneath her bridal veil, crowned with the blossoms of orange, walking down the church's aisle, leaving behind her the strains of Mendelsohn and the fragrance of Jacquimots only to proceed in a direct path to the operating table and the suffocating fumes of the anesthetic, a sacrificial offering to cupidity and fanaticism.

LODGE PRACTICE IN ITS RELATION TO QUALIFICATIONS FOR MEMBERSHIP.

THE solution of an interesting problem confronts one of our constituent county societies which is of interest to the organized medical profession of the state as a whole. Recently three physicians were proposed and duly

seconded for membership in this County Society by highly reputable sponsors. When these three names appeared for consideration by the Board of Censors they were recognized as what are popularly known as "ten cent doctors," *i. e.*, doctors who agree to render medical service to members of an organization on the basis of a monthly charge of ten cents per capita. The Board of Censors, believing that in order to become members of the Society they might be willing to relinquish this mode of practice, invited these gentlemen to appear before them.

One responded in person, the other two by letters. The former created a very favorable impression. He stated that circumstances compelled him, against his inclination, to act as he did. He further volunteered some interesting information concerning other sources of revenue from this form of practice, such as resulted from selling to the patients medicinal tablets, from opportunities gained through acquaintance of securing new patients who were not members of the organization for which he worked under contract, from the privilege of making his own charge for obstetric cases, and from the possibility of establishing a reputation which in time might permit him to practice independently.

The letters of the other two candidates were practically identical in phraseology. They demanded to know why their election to membership was held up for three months, maintaining that there was nothing unethical in their conduct, that they would continue in the future as in the past to practise their calling at their own discretion, that if their manner of practising their profession was a cause for discussion or discrimination against them they desired to withdraw their applications, pertinently asking the question why they had been so persistently solicited for five years by the Membership Committee of the Society to become members, and then after yielding to the request, to be compelled to suffer the indignity of a rejection.

The Board of Censors reported to the Council of the Society that they were unable to agree

either for or against a recommendation that these candidates be accepted, and requested the advice of the Council. The Council, in its desire to advise, was confronted by the fact that there were already in the Society a number of members who pursued the same method of practice, and by a resolution referred the matter to the Medical Society of the State of New York.

The matter is of importance because it opens up the question of lodge practice and the eligibility of this class of physicians to membership in the constituent county societies. It would seem a logical assumption that the unfortunate "ten cent" doctor is in practically the same category as the \$10,000 a year doctor employed by the large insurance companies or the large number in the intermediate gradations, upward or downward as you choose, practising medicine under contract upon a collective group of individuals—civic, industrial, economic, etc. A possible reason for undesirability for membership might lie in the belief that lodge doctors have not the time to devote to the proper examination and care of their numerous patients, which condition might lead to malpractice suits which the State Society would be compelled to defend unless the lodge or employing organization could be held responsible. As a matter of fact, under any such contention it may safely be stated that there are doctors in good standing in their respective county societies who have such a large private clientele that they cannot possibly give to their patients any greater degree of scientific skill.

It is to be hoped that the matter may be definitely decided by this appeal to the Medical Society of the State of New York. While an adverse decision would prevent the admission of a small number it would not be retroactive in its effect and deprive those present members who are engaged in this line of practice from the privileges of membership. It is the opinion of the writer that unless it is in conflict with established ethics, should there be no other adequate cause for rejection, lodge doctors should be considered eligible for membership.

OUR NEXT ANNUAL MEETING.

THE pibroch has sounded and the clan Campbell, of which none is more capable of greater achievements, is preparing an assault upon a time honored usage—the traditional plan and scope of our annual meeting. The man, the occasion, the place, the hour, are in perfect harmony for a successful issue. Profiting by the success of the last meeting of the Clinical Congress of Surgeons of North America (held in New York City, Nov. 11-15, 1912), a tentative program for the next annual meeting of the Medical Society of the State of New York has been arranged by the Committee on Scientific Work, of which Dr. Thomas J. Harris is chairman, and the Committee on Arrangements, of which Dr. Charles H. Richardson is chairman. The Hotel Astor has been selected as the headquarters, and all meetings except those of a clinical nature will be held there. The banquet on Wednesday evening, April 29, 1914, will also be held at the same hotel.

The long daily sessions of the different sections at which even the most interested listener becomes fatigued will give place to morning sessions for the reading of scientific papers while the afternoons will be devoted to clinical meetings of the sections at the various hospitals. An effort will be made to have a co-relation between the afternoon clinics and the topics discussed at the morning session. An interesting recreation feature, instructive and delightful, is in tentative consideration.

AN ACT TO AMEND THE PENAL LAW IN RELATION TO THE SALE OR POSSESSION OF COCAINE OR EUCAINE.

This act became a law May, 1913. So many inquiries have reached us regarding its provisions that though lengthy we deem its publication in the JOURNAL called for. (See page 344.)

Like many laws framed to prevent evil, it will be circumvented by the criminal and unfortunate habitué of the drug at whom it is aimed. It will cause hardships and annoyance to the conscientious physician, dentist and pharmacist and produce undue alarm to the patient using it under the order of a medical attendant. However, let us be thankful for its existence. The more drastic the law against this crime-creating poison the better. Objectionable or impractical provisions can be amended in the future.

Original Articles.

FURTHER CONTROL OF THE MORBIDITY AND THE MORTALITY IN ABDOMINAL OPERATIONS FOR PELVIC DISEASES.*

By GEORGE W. CRILE, M.D.,

CLEVELAND, O.

THE steady fall in the mortality rate in abdominal operations since the inauguration of the aseptic era is due to the improvement in technique and to the exercise of a more critical judgment in the selection of cases. While the degree of protection and the standardization of technique determine the general end result, the result secured by the individual operator depends on two factors—his personal and operative judgment (and here there is a wide range of difference), and his policy in the selection of cases for operation. By the selection of only those cases that have the required resistance to endure his technique and his hospital organization, an indifferent operator may show as low a mortality rate as is shown by the most expert operator who has the advantage of the best hospital organization, but who includes all justifiable hazards. Unless all the facts are known, therefore, comparisons of individual statistics may be of no value.

A better clue to the value of methods is found in a study of the post-operative morbidity, because the morbidity is governed by the same influences that govern the mortality. It is the purpose of this paper to present a study of morbidity and mortality following the "ether-unprotected operation" as compared with that following the "nitrous-oxide-anoci" operation. The operations on which this study is based were performed by my associates and myself in the same hospital and under similar conditions.

After the operations performed under ether anesthesia alone, we were confronted constantly with a familiar train of troublesome sequelæ, painful to the patient and discouraging to the surgeon. The immediate sequelæ included gas pain, nausea, and aseptic wound fever. The later results ranged all the way from painful scar alone to the long train of symptoms accompanying "post-operative neurasthenia."

Since the same train of effects may be seen in persons who have been traumatized in accidents and also in physically uninjured persons who have undergone some psychic shock or prolonged nervous strain, it became evident both that inhalation anesthesia had no power to prevent the train of symptoms, and that their cause must be found, not in the immediate field of the operation, but in some lesion of the brain tissue.

That only a few of the brain cells are "asleep" in inhalation anesthesia is shown constantly in the course of the operation itself by the responses of the vasomotor, the cardiac and the respiratory centers to the traumatic stimuli. The examination of the brain cells of animals subjected to trauma while under ether anesthesia showed exhaustion varying according to the extent and intensity of the injury inflicted. That is, we proved that the traumatic impulses do reach and influence every portion of the brain despite the complete paralysis of voluntary motion and the loss of consciousness due to inhalation anesthesia. In every case, also, we found that the changes in the brain cells of the cortex and of the cerebellum were more marked than those in the medulla and cord. We were compelled to conclude, therefore, that although ether anesthesia produces unconsciousness, it is in reality only a veneer, as it protects but few of the brain cells against exhaustion from the trauma of surgical operation.

If the morbid results from operation were due to the brain exhaustion caused by traumatic impulses from the seat of injury, it was logical to conclude that they could be prevented if the connection between the field of operation and the brain could be interrupted; and we reasoned that this could be done by preceding each division of tissue by the infiltration of a local anesthetic. Our results abundantly justified our theory, and we adopted a new operative principle, coining for it the name anoci-association, since by its use all nocuous or harmful associations are excluded from the brain.

It might be argued, and has been, that the use of local anesthesia should do away with all need of a general inhalation anesthetic. In certain selected cases this may be true, but we should remember that not only the contact, but the distance ceptors as well carry the nocuous impulses to the brain; and also that the preoperative psychic strain may have deleterious effects. The complete anoci-association then includes a lessening of preoperative psychic strain by the administration of solacing drugs; the administration of a general inhalation anesthetic to obliterate harmful impressions which might be received in the course of the operation by the distance ceptors; and the use of a local anesthetic to interrupt the passage to the brain of the traumatic stimuli from the field of operation.

Before proceeding to the description of the technique employed in abdominal operations, let me say a word regarding our reasons for making nitrous oxide our anesthetic of choice.

Ether anesthesia has, in truth, certain advantages. It is relatively safe in inexperienced hands; its bulk is small; it is inexpensive; and it requires the simplest apparatus for administration. Against ether stands the malodor; the choking sensation in going under its influence; the drunken nausea sensation when becoming

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

conscious again; and the fact that the dose required to dissolve the lipid in the brain sufficiently to cause anesthesia, also dissolves the lipoids in the liver, the kidneys, the red blood corpuscles and other important structures. Ether also chemically hinders or prohibits phagocytosis, hence, in addition to anesthesia, this powerful chemical solvent may produce nephritis, pneumonia, anemia, and many other tissue impairments. Besides, in the presence of infection ether arrays itself on the side of infection against the patient. We have already referred to the sense of irritation and suffocation when going under the influence of ether. This is probably the meaning of the "stage of excitement," because the feeling of suffocation is one of the most powerful brain stimulants.

These objections led us to turn to nitrous oxide, an anesthetic pleasant to take, devoid of baneful after results, and serving as a measurable protection against shock, because as our experiments have shown, by its hindrance to oxidation nitrous oxide diminishes the changes in the brain cells, which would otherwise be caused by the emotional and traumatic stimulation incident to the operation.

Our complete technique in abdominal operations is as follows: When the preoperative strain is great, an hour or so before the operation we administer to the patient a hypodermic injection of one-sixth of a grain of morphia and 1/150 of a grain of scopolamin, that he may receive the solace and quiet which come from the use of these drugs. The inhalation anesthetic may be administered in the patient's room; or else in the apathetic state produced by the morphia and scopolamin, the patient is gently conveyed to the operating room where a specially trained anesthetist administers nitrous oxide. When the patient is anesthetized the division of tissue is preceded by nerve blocking by means of the local administration of 1/400 novocain. Each division of tissue in the course of the operation is preceded by the infiltration of this local anesthetic, the blocking being made so complete that no nerve is left free to carry a single activating impulse to the brain. First the skin, therefore, then the subcutaneous tissue, then the fascia, and finally the remaining muscle or posterior sheath and the peritoneum are in turn novocainized, subjected to momentary pressure to spread the anesthetic, and then divided within the blocked zone. If the blocking has been complete, then upon opening the abdomen there will be found no increased intra-abdominal pressure, no tendency to expulsion of the intestines, and no muscular rigidity.

The peritoneum is next everted and a one-half per cent. solution of quinine and urea hydrochloride is infiltrated about the line of proposed sutures, and, as before, the parts are then subjected to momentary pressure. This infiltration serves as a block, and as its effects last for

several days, it should prevent, or at last minimize, the post-operative wound pain and the post-operative gas pain, and by so much minimize post-operative shock. Quinine and urea hydrochloride causes a certain amount of edema of tissue which lasts for some time after the wound is healed.

The relaxed abdominal wall will permit exploration of the entire abdominal cavity with ease. If there is no cancer or acute infection in the field of operation, then the following regions may be blocked as completely and in the same manner as the abdominal wall, viz.: the meso-appendix, the base of the gall bladder, the uterus, the mesentery, and any portion of the peritoneum. In performing a hysterectomy the broad and round ligaments are thoroughly infiltrated with novocain before they are severed, and again before the wound is closed the stumps may be completely infiltrated with quinine and urea hydrochloride, thus giving a degree of anesthesia for at least two days. On account of the absence of nociceptors, operations on the stomach and intestines made without pulling on their attachment cause no pain, and hence the novocain infiltration of these viscera is not required. If the brain has received no stimuli during the operation, then the closure of the upper abdomen is as easy as the closure of the lower—all is done with the ease of relaxation. What is the result? No matter how extensive the operation, no matter how weak the patient, no matter what part is involved, if anoci technique is perfectly carried out the pulse rate at the end of the operation is the same as at the beginning. The post-operative rise of temperature, the acceleration of the pulse, the pain, the nausea, and the distension are minimized or wholly prevented.

We have described the complete anoci operation. What is its effect on the post-operative conditions—the morbidity and the mortality? Let us take each morbid manifestation in turn.

1. *Post-operative Pain.*—Quinine and urea hydrochloride wholly prevents pain if it is injected into the entire wound. But quinine and urea causes some edema of the wound, hence one should limit the wound infiltration to cases needing it, *e. g.*, exophthalmic goitre cases—bad risks generally.

2. *Post-operative Gas Pain.*—This baffling phenomenon may be largely or wholly prevented by the technique already described, *i. e.*, by the hypodermic infiltration with quinine and urea hydrochloride of a wide margin of tissue, including every part of the divided peritoneum. The stitches must be inserted within the blocked zone. Post-operative gas pain can be explained as a biologic adaptation to overcome infection. In the course of evolution all abdominal penetrations are infected, but the peritoneum is able to overcome most infections if they can be localized. To localize an infection, the intestine and the ab-

dominal wall must be kept fixed against each other; that they may do so, each must be inhibited; the intestine must be distended with gas, the abdominal muscle must be rigid. If the intestine be distended with gas and fixed, then digestion must cease. If digestion be arrested, then there is anorexia, or even vomiting to expel food from the stomach. This shows us how post-operative gas pain is due to a biological adaptation to overcome infection, and explains its resemblance to incipient peritonitis. Nature does not depend upon the surgeon, or perhaps she knows the surgeon too well. The test of this hypothesis is easily made. If the brain through which this adaptive response is made is kept in ignorance of the incision into the peritoneum (a) by progressive novocain blocking throughout the operation, and (b) by post-operative quinine and urea blocking to break later communication with the brain through stitch tension, then there should be no gas pain. Clinical experience has abundantly confirmed this hypothesis. It must be remembered that if a single nerve filament escapes the block there will be gas pain.

3. *Painful Scar.*—I postulate that the lesion of a painful scar is in the brain, not in the scar; that it is due to the low threshold produced by injury, and is intimately connected with a fundamental principle of nerve conduction. This fundamental principle relates to the fact that a strong traumatic or psychic stimulus produces some change in the conductivity along its cerebral arc, the effect of which is that of lowering the threshold of that arc. This might be illustrated by the phenomenon following a hold-up at the point of a pistol on a certain street corner. For a long time after such a psychic stress any association with that corner would recapitulate the experience. In this manner throughout life various experiences may lower the threshold in innumerable ways. I assume that there is a similar result after a traumatic stimulus. The arc receiving the stimulus suffers a lowered threshold and hence from that time on mere trifles become adequate stimuli. Such a result is seen in the sensitiveness after fractures and in the painful stumps of crushed limbs.

Now, if an operation is so performed that no strong stimulus reaches the brain either during or after the operation, then the thresholds of the cerebral arc from the wound will not be lowered. Since the threshold is not lowered, contact with the scar or any injury to that part will have no more effect than will contact with any other part of the body. In other words, the scar will be no more sensitive than is the skin elsewhere. Hence, we see how painful scars may be prevented by complete anoci. Our clinical data seem to support this hypothesis, although it has not as yet been fully worked out.

4. *Nervousness.*—When in the night one is threatened with an unknown danger, the brain

threshold is always lowered—apparently as an adaptation to the more swift and accurate detection of the danger. Likewise when one has received a crushing physical injury there is a universal lowering of the threshold. During these states of tenseness minor stimuli have major effects, or, in other words, one is “nervous.”

Now, as we have seen, the subconscious brain is tortured directly during unblocked operations under inhalation anesthesia. The resultant general effect on the brain thresholds is demonstrably the same as if the injury had been inflicted without anesthesia—*i. e.*, after the ordeal of punishment of the subconscious mind during an operation the patient emerges “nervous,” “exhausted”—and since a low threshold is lavish in its waste of nervous energy, recuperation is slow. Hence there results a period of post-operative nervousness,—of post-operative loss of efficiency. It is obvious—and clinical experience abundantly proves—that the threshold is preserved by complete anoci, hence the unpleasant, damaging post-operative phenomena are avoided.

5. *Aseptic Wound Fever.*—Since it is a physical law that any form of force may be converted into heat, and that heat thus produced, if not at once transformed into motion, must increase the temperature of the body affected, we see readily why any stimulus, mechanical or physical, which normally would cause increased motor activity, must cause a rise in temperature if complete motor expression is impossible. Anything, therefore, that drives the motor mechanism of the body beyond the point of normal expression will cause fever. Anger, athletic contests, fear, physical injuries, all produce a rapid oxidation of certain body compounds too great for complete translation into motion.

In operations under general anesthesia only, we expected routinely to see some post-operative rise of temperature as a result of the suppressed power of motor response to the physical and psychological injury; but by the use of anoci-association, both during and after the operation, we discovered a change of post-operative temperature and pulse rate. We were therefore forced to the conclusion that, barring infection and the absorption of hæmoglobin, post-operative fever is the result of increased oxidation, this being in turn the result of the psychic and traumatic stimuli of the operation to which natural response has been denied.

So much for the post-operative morbidity. Not only does the surgeon, but so also do the patient, the interne, and the nurse corroborate the story. As for the mortality rate, hospital statistics abundantly verify our conclusion. At the Lakeside Hospital since the introduction of this method, my associate, Dr. W. E. Lower, and myself have performed 250 pelvic operations, with but two deaths—a mortality rate of eight-tenths of one per cent.

CONCLUSIONS DRAWN FROM A QUARTER CENTURY'S WORK IN BRAIN SURGERY.*

By ROSWELL PARK, M.D., LL.D.,
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ENOUGH time has elapsed since the furor aroused in 1888 concerning the prospects opened up by the then rapidly accumulating discoveries in cerebral localization, and consequent hopes with regard to the possibilities of such surgery of the brain as had never before been contemplated, to not only permit but justify us in pausing to review the accomplishments of the past quarter of a century in this domain, and to orient ourselves regarding our present attitude. A memorable event occurred in that year, 1888, on the occasion of the first Congress of American Physicians and Surgeons, in Washington, when one session was devoted to a symposium upon brain surgery. At this time the then young and brilliant apostle or exponent of the new surgery, Mr., now Sir Victor Horsley, was present and took active part, as did also Dr. Ferrier of London, with Drs. Keen, Weir and myself. Upon that occasion a glamour and attractiveness were made to so enshroud this new brain surgery that surgeons, throughout the country, hailed the date as ushering in the dawn of a new era, apparently doubting little but that in a short time the topography of the brain would be charted out for us as are obstructions in navigation charted out for the marine pilot. "Cerebral localization" was the watch-word of the day, and in fact not without reason, for had not Hughlings Jackson already requested his friend, the surgeon Richard Godlee, to open the skull at a certain point and thereby expose the lesion which he had accurately localized beneath the bone? This was indeed a triumph in analytical reasoning or ratiocination comparable only, as I am fond of putting it, with the discovery of the planet Neptune. This was based upon a study of the perturbations shown by the planet Uranus in its orbit which, upon careful analysis, could evidently only be produced by the disturbing attractions of an outer planet. When the astronomer Leverrier wrote to his friend Wolff, who possessed a telescope of sufficient power, and asked him, on a certain night, to direct his instrument toward a designated point in the heavens, and when, at this point, a new planet was actually found, the mind of man perhaps achieved the greatest triumph in the history of science; a triumph which again seemed to verify the opinion of the ancient philosopher Pythagoras that the universe is founded upon number. It was by an exactly similar process of reasoning, differing only in the magnitude and character of the computation, that Bennett and Godlee worked out their memorable discovery.

Have the hopes thus aroused twenty-five years

ago been realized? That is a very important question which no individual can settle. I have been asked, however, to express my own convictions as gathered from personal experience, as well as from the sources available to all students of the subject. During this period some memorable monographs have appeared. Of these the most valuable, according to my notion, are the large work of Krause; the quite recent one of Rawlings; Cushing's work upon the hypophysis; the comprehensive collective studies of Chipault; and the scattered, but always valuable, papers of Sir Victor Horsley. In addition to these should be mentioned the very recent and memorable work of Dr. Huney, of our own state. Most unfortunately for the profession, the man who could tell us the most, and best guide us, *i. e.*, Horsley, has written relatively almost the least, and while his enormous experience is available by his colleagues and his students, the profession at large have not been able to profit by it as we could had he also written such a work as perhaps none other but himself could produce.

With this introduction it is my purpose in this paper simply to give certain conclusions which I have reached for my own guidance, as well as the facts upon which some of them are based. If the first personal pronoun appears in the paper more often than might seem becoming it is then because of its personal character.

EPILEPSY (INCLUDING THE OTHER LEPSIES).

In but few studies of this kind are statistics of less value than here. Personal experiences are always of interest and should be of importance, but those of different surgeons differ so widely that any advice given must be based upon almost anything rather than mere statistics. Have large gains been made in the surgical treatment of epilepsy? In reply I would say that such gains have been relatively small, and that we know little more about the prime factors of this syndrome than we did thirty years ago, and that operative technique has made but small advance. Operations indiscriminately performed must always be unsatisfactory, and this discrimination has been too seldom evinced in this direction. True we have much with which to contend, including especially vagueness of history, uncertainty of observation, and the fact that a period of years is often allowed to elapse between injury or even the first symptoms of the condition and the attempt at operative relief. During these years cicatricial and other changes have taken place, and the epileptic habit has become formed, while dementia or even mania have so altered the patient's finer brain characteristics as to ruin almost every prospect of the success that might have been attained had the interval been much shorter. Disappointment, then, so frequently results that operations for epilepsy are now quite frequently discouraged, since they have brought surgery into a sort of ill-repute which it does

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

not deserve. The trouble is not so much that operation itself is a mistake, since it is a perfectly justifiable late or even last resort, but patients are led consciously or unconsciously to expect too much. So soon as the term "experiment" or "legitimate experiment" is used in this connection a large proportion of people jump at the conclusion that we mean something by the expression which it is really not intended to convey. Personally I believe in operating in many instances where the outlook is even unpromising, simply because this outlook is still more unpromising without it. In the strict meaning of the term such intervention is an experiment, justifiable of course, but an experiment in the sense that a voyage of discovery is such. If intelligently accepted in this significance no blame attaches even to a fatal result; in fact this may often be in effect a blessing in disguise. But there are certain indications which are accepted by every conscientious surgeon, indications as clear as, in fact much clearer than many of those which are supposed to call for specific remedies.

For instance, several localizing phenomena, such as the constant occurrence of a sensory or motor aura, especially if this correspond to that part of the brain where it apparently properly belongs. Parents or patients frequently forget that epileptic convulsions were at first strictly localized, and that only in the course of time have the phenomena spread to adjoining areas. This is particularly true when paralysis or spastic condition has finally involved the muscles which, at first, were only occasionally affected. When it appears that throughout the convulsive phenomena consciousness remains, or is but momentarily or partially diminished, then the indication is much stronger.

Convulsions lose their typical Jacksonian features when fits become frequent and prolonged, and it may well be that separate groups are involved in such rapid succession that all typical features are lost.

Non-traumatic and non-surgical epilepsy sometimes deceives even the elect, since it occasionally displays focal features for which, upon exposure of the corresponding areas, absolutely no tissue changes are observed; but even then improvement may result. Therefore in cases of idiopathic epilepsy with marked Jacksonian features intervention is indicated, while the operation should be completed as a decompression when nothing more definite is found. Kocher's experience is illuminating, and encouraging in that he has shown that many idiopathic cases receive considerable benefit from operation.

Still more specific indications for operative intervention may be found underneath definite areas of the skull. Lesions of the motor area about the Rolandic fissure begin usually with twitchings of the extremities, not often preceded by sensory auræ, although the patient is usually able to fortell the immediate onset of the seizure

and, occasionally, to abort it by pressure upon the part first involved. Lesions in the speech centre are often preceded by alterations in speech, grinding of the teeth and the like, the spasms then spreading to other parts. The sensory auræ are usually most marked when there is irritation of one of the posterior portions of the cortex, while, when preceded by sensations of smell or taste, the trouble will usually be found over the temporo-sphenoidal lobe, and when by light sensations, flashes, etc., over the occipital lobe.

Some of these lesions are merely limited to the membranes, many to the cortex, and quite a proportion to both. Osseous defects by themselves count for little, the trouble depending upon the condition of the brain or membranes. In cases of distinct history of meningeal hemorrhage it is often possible to safely assume the presence of a cyst; in fact the *first* case ever accurately localized and successfully operated upon in this country, where the whole procedure was based upon the, then, new principles of cerebral localization, was a case operated by myself in the Buffalo General Hospital, in 1886. The frequency with which epilepsy in the young follows birth-injuries should never be overlooked, and careful inquiry should be made to determine the possibility of such accident. Doubtless a goodly proportion of cases of epilepsy dating from childhood are due to this cause. Finally, with regard to the success of operative measures, it is pretty safe to assume this general rule—that when definite brain degeneration has taken place, as evidenced by exaggerated reflexes, spastic muscles, or other pronounced features indicating deep brain lesion, it is then too late to expect relief from the principal condition, although some peculiar feature of a given case may justify operation for relief of some distressing or disabling condition.

So far as the operation itself is concerned it should be directed either toward some evident external marking, such as a scar or a depression, or else upon a definite localizing symptom, pointing to a more or less defined area of meningeal or cortical irritation. Osteoplastic flaps are now generally adopted, and the larger, within reason, the better, since not merely is opportunity for better survey afforded but the decompression effort may be better attained.

The temptation is always to remove scars, and the tendency to forget that every scar is followed by another. Here we are forced to limit our effort to the endeavor to make the second scar less irritating or disquieting than the first. Many attempts have been made to prevent the formation of adhesions by insertion of some material like foil, egg-albumen, gutta percha and the like. Perhaps the best of all membrane for this purpose is afforded by a saturated solution of collodion, allowed to evaporate on a flat surface. (Pierce.) It has been shown by experiment to

be far less irritating than any celluloid membrane. It can be made of requisite thickness and is, perhaps, the best medium that we have today for this purpose.

For the closure of bony defect we may choose between a peri-osteoplastic graft and a bone graft taken from some quite different location, for example a rib; it has been shown that bone from the same individual will regenerate far better than bone from another, even from the same species, while bone from a different species is very unreliable. We have learned, also, that the periosteum *per se* has very little, if any, bone forming property, the latter being due to the real osteoblasts or osteoclasts which adhere to it as it is stripped up; it is, however, a simple matter to mark out a periosteal flap, and then with sharp chisel raise a sufficient amount of the external table along with it, so that when carried over to its new location it shall have all the effect of a bone graft. In this way, then, actual bony openings can be closed when this is considered desirable.

Removal of cortical tissue is probably not now as frequently practised as a few years ago, simply because we better realize that a second scar must follow the first; nevertheless my own conclusion is that, if such a given area when electrically tested reproduces the epileptic phenomena, it would be better to remove it than to leave it undisturbed, and thus take chances on a later duplication of the original condition.

IMBECILITY AND PSYCHIC DISTURBANCES.

But little has been accomplished in recently past years to clear up those conditions of microcephaly, imbecility and like defects, whose origin is probably essentially congenital, or due to injuries received at birth, and until clearer notions can be held there is small chance for more accurate direct operative attack. The prime causes of congenital defects are too remote and, of necessity, too inaccessible to permit of surgery, until they are first reasonably established and, secondly, until indications become clearer. Craniectomy or craniotomy, so generally credited to Lannelongue, was really first proposed by an American surgeon, and appears to have dropped into disfavor rather than into wider acceptance. Instead of adhering to, or imitating, the ancient Spartan custom of exposing defective children modern sentimentality tends to become even more morbid, and parents of these defectives cling to them with an amount of solicitude and attention which is phenomenal, while at the same time they make any resort to surgery always the last, and usually the least promising, effort to alter conditions. The tenderness with which the average mother of today clings to her imbecile child is appealing, and, at the same time, appalling. The state does not begin to care for those who should be entrusted to it rather than left at home, largely because the almost frantic mother continues to sacrifice

herself and all her other interests in misdirected care of an idiot child. It is going far too wide to intimate that surgery might be effective in even a large proportion of these cases, but there certainly is a period in their early history when some operative attack might be brought to bear upon a sufficiently encouraging percentage to justify anything and everything in this direction. It is usually a delicate and difficult task to make a mother appreciate that her child is a menace to society, and that it would be far better that it should die rather than grow up, and when a mother does appreciate this it is usually too late to accomplish much.

Still I believe in operating upon a good many of these children, performing operations whose essential feature is a decompression, believing that we err usually in making it insufficiently complete. True this is a discouraging field of surgery but, again, it is largely so because individuals are led to expect too much. When it can be established that paths of conduction are completely interrupted, or that brain structure itself is defective, then little or nothing can be expected, and yet the greatest good to the greatest number justifies an euthanasia for these children which many are not quite willing to accord them, at least not their own. On the other hand if reasonable integrity of brain structure can be fairly assumed there is no reason why craniectomy or decompression should not be given the opportunity to release pressure and permit more normal development. I believe, then, in operating upon these cases at the most favorable time, being well aware of the discredit which is likely to be reflected upon our efforts in case of failure; in fact I would suggest that in every such case the parents, or those responsible, should sign a definite statement to the effect that they realize the difficulties and dangers, and are perfectly willing to accept the latter. If but one case out of twenty of this character can be benefited is it not better than to let it go with the rest, regarding it as we do the one sheep that was saved in the story of the ninety-nine which were lost,

For mental perturbations of the kind that distinctly follow injury very much more encouragement can be afforded. For traumatic cephalgia, and for those psychoses, as well as for those neuralgias which bear definite relation to a previous injury, there is opportunity for brilliant results, if only the remedy be not too long withheld. The excision of painful scars, of painful nerve trunks, of intracranial cysts, of depressions, in fact of all the somatic consequences of injury, afford as much encouragement as almost anything in pathological surgery.

The same is true of alterations of temperament and of temper, of sensory disturbances, or of gradual development of psychic changes which fall under the same head, and may be regarded as furnishing a similar indication. Were I to endeavor to epitomize my own experience in this

line of work I could say nothing more than probably every surgeon would say, namely, that my own results have ranged all the way from complete failure and disappointment to most surprising restoration to mental health and strength. Every case coming under this category must be a study by itself, and while general experience counts for a great deal, case histories and figures of others mean but little.

BRAIN TUMORS.

Brain tumors subtend the widest angle of any of the topics under present consideration; they constitute the least illuminated and most difficult study in surgery. Of the reasons thereof there is here no need to make mention. We are still confronted by so many discouraging failures, due partly to difficulties of localization and partly to purely surgical considerations, that many of us have become almost discouraged. Here more than anywhere else hopes first aroused have proven fallacious. True it is that it is not our fault that there are still so many silent areas within the brain, nor is it our fault, again, that few patients give such definite and connected histories as to be of great advantage. Confusion arises also in this fact, which is true of tumors in general, that they have no symptomatology peculiar to themselves, and that practically every symptom or sign that brain tumors produce may be produced by some other lesion. How, then, *can* we be exact? Especially so when the limit of possible exploration seems to have been about reached. The apparent contradictions are so numerous, and the features which, by dove-tailing into each other make a case perfectly plain, are so rarely met that it is not strange that this chapter is always a most difficult one to write.

To be sure we have many suggestive symptoms, general and localizing; among the former, headache, vomiting, optic neuritis and, perhaps, mental disturbances. Yet patients in whom large tumors have been found have presented not one of these classical manifestations. The localizing symptoms are due either to pressure or to degeneration, or both. As illustrating difficulties frequently met with I recall two instances where I was summoned considerable distances to operate for obstruction of the bowel; both cases were found to have brain tumor. Again, I have operated for tumor guided by indications which seemed of the clearest, and yet have found nothing, at least of this character. Had I been alone in perpetrating this last error it would have worn a different aspect, but it occurred in the practise of men considered thoroughly capable, and not alone but in consultation.

To consider for a moment these general symptoms it is held, for instance, that the headache so commonly present is due to dural tension, and is more pronounced when occurring beneath the quite rigid tentorium. The importance attaching to localization of this pain is relatively small,

since a cerebellar tumor may produce an intense frontal headache, as well as the reverse. Mental disturbances usually give way to apathy and somnolence, which increase finally to stupor and coma. Mania is rare. For these manifestations there is no satisfactory explanation.

Optic neuritis is perhaps the most generally present of all symptoms, and is associated especially with tumors of the temporo-sphenoidal or cerebellar lobes, while in pontile tumors it is either late or quite absent. Naturally in pituitary tumors pressure is directly exerted, and optic atrophy would occur early. Even unilateral symptoms are not reliable in localization, and Gowers maintains that, even with a strictly unilateral optic neuritis, a general rather than a local cause should be suspected. That this neuritis is sometimes due to damming up within the optic sheaths of cerebro-spinal fluid is doubtless true, circulation being thus impeded; accumulation also in the ventricles, especially from pressure along the anterior part of the third, may do direct damage. The relatively great frequency with which it is met in sub-tentorial tumors is probably due to their rigid envelope, and the effect of pressure upon the iter and the veins of Galen, thus producing intraventricular pressure. The ordinary theory was one of toxemia due to liberation of toxic substances in consequence of tissue destruction. This is no longer tenable. Whatever its value the symptom (optic neuritis) begins usually in the upper nasal quadrant; pupillary changes are usually associated with those in the fundus, dilatation becoming more marked as atrophy increases.

The vomiting, so often met with, must be due to irritation within the medulla or to the dura which is in relation with the tumor itself, this membrane being supplied by branches of the fifth. The headache usually keeps pace with the vomiting, and the more severe the latter the more likely are we to have a cerebellar tumor.

The features pertaining to respiration and the circulation have to do mainly with irritation along the vagus and in the vasomotor centres. When, at the last, these become exhausted then the pulse rate rapidly increases, blood pressure fails, and Cheyne-Stokes respiration is noted; temperature, as in case of abscess, is frequently subnormal, thus confusing many cases, while fever is to be interpreted as due to cerebritis.

Time fails in which to even discuss the numerous localizing symptoms, so-called, which are yet so often misleading. Early in the study of every case the cranial nerves on each side should be catechized, as I call it, and the results tabulated, preferably on paper. These should be compared not only with the course of the nerve trunks and their foramina of exit, but with their nuclei of origin. In this effort the greatest difficulty will often be met with when dealing with irrational or unconscious patients, in fact in such cases the method may completely fail. Thus

nystagmus is one of the most frequent symptoms of cerebellar tumor, the deviations being mostly directed toward the side of the lesion.

As distinguished from those outside of the cerebellum tumors situated within it rarely give isolated pressure symptoms, although one must respect ipso-lateral paralysis with exaggerated reflexes. Nevertheless with a tumor centrally located we may have contra-lateral paralysis, due to pressure on the pyramidal fibres. Dana's classical symptom, the so-called "cerebellar fits," considered to be almost pathognomonic of tumor in the pontine angle, consists of some loss of consciousness, with tinnitus, vertigo, etc. Before the state of unconsciousness is reached the latter symptom may be noted, or the case may not be seen until it is lost, suddenly and without preceding symptoms. Sometimes these attacks are brought on by sudden alteration in position.

Regarding the hypophysis, the latest candidate for study and interest within the cranium, so much has been said and written within the recent past, that it calls only for brief reference here, but permits no conclusions based upon studies over a considerable period of time.

The latest aids to diagnosis are supposed to be afforded by the Röntgen rays, and by lumbar puncture. A thoroughly good skiagram may be of very great service, especially in showing bony changes, such as alterations of the sella turcica. Too often the average tumor does not display sufficient alteration of density to cast a shadow which is above suspicion, although occasionally a brain tumor shows up in this way to advantage.

Lumbar puncture, ordinarily harmless, is not without its possible danger in cases of pressure confined beneath the tentorium; nevertheless the very fact that alarming symptoms might be produced in such an instance would of itself be quite suggestive. Microscopic examination affords small evidence. It is mainly the degree of tension with which fluid is confined within the spinal canal which will prove, in this respect, indicative.

The practical side of all this is, what can be accomplished by operation or, in other words, of what benefit is surgery in cases of brain tumor?

This question must be answered partly according to what may be held to be the indications. These latter are divisible into two groups—those for palliation, and those for radical operation.

We may decide to operate in apparently quite hopeless cases for the sake of

1. Relief of pain or disturbing symptoms.
2. To preserve sight as long as possible.
3. To check convulsions.
4. In general for such prolongation of life as possibilities may permit.

Of these the most important are preservation of vision, and relief of distress. If vision be already practically lost it will be practically a case to decide according to amount of suffering experienced by the patient. When headache is un-

bearable vomiting is usually an accompanying distressing feature; these are both principally due to pressure, and this pressure may be relieved by sufficient decompression. In fact such a case will be practically narrowed down within these limits.

On the other hand radical operation may be planned and, so far as possible practised, and by all means most effectively

1. When tumor can be accurately localized, providing that it be accessibly situated (cortex, lateral lobe of cerebellum, or pontile angle) or

2. When there is sufficient reason to regard the growth as single, simple and probably removable.

3. A third reason may sway judgment in a few instances, namely, that circumstances seem to justify it; and that we may regard the tumor operation as not being extra hazardous, and not likely to lead to serious complications, such as aphasia, permanent paralysis, etc.

The results of surgical intervention for removal of brain tumors form one of the most discouraging chapters in surgery. True some most brilliant results have been achieved and, equally true, these have mainly occurred within the experience of not to exceed ten or a dozen of the world's most distinguished operators. Their work, however, constitutes no criterion for that of the hundreds of men who are today doing general surgery. These results must be considered both from the standpoint of mere recovery from the operation, but particularly from that of the permanent benefit accruing to the patient. It is in the latter respect that the greatest discouragement has been produced. I need not, in this paper, endeavor to rehearse the experiences of others. I simply record my own conviction that this subject has lost the glamour which once surrounded it, and that a very small percentage of radical operations prove permanently successful. There is no way of formulating this in figures. The statement must stand as it is for I cannot qualify it nor be more accurate. Here, as in the case of epilepsy, I have seen some beautiful results, but the large proportion of my own cases have early or ultimately proven disappointing. Not that I do not believe in operating, but that even after many hours spent in careful study, so many of these cases present such contradictory features that one must explore, or literally grope, rather than feel confident that he is operating along clearly indicated lines. Moreover anything like a definite assurance of success should be carefully avoided.

To repeat, I believe in operating when things appear at all favorable, but I believe most thoroughly in making such representations, to those interested or concerned, as to leave no opportunity for imputation of ignorance or lack of science. It is from the cases where too much is prophesied that we meet with our most serious setbacks. However, inasmuch as these cases are

practically all of them progressive, and tend to kill, one may have a justification for any effort of even dangerous character, when he considers the otherwise hopeless nature of the disease process. Perhaps no one has given more judicious advice than Rawlings. It appears from his studies that according to the earlier records immediate mortality was estimated as in the neighborhood of forty per cent.; this has diminished with time, and now it may be placed in round numbers at, perhaps, twenty per cent. To quote his expression, "So long, however, as surgeons will persist in burrowing into the brain substance for a supposed subcortical tumor, so long will the mortality remain high. The great secret in operating on a brain tumor lies in knowing when to terminate the attempt at removal of the tumor and when to rest content with a pure decompression." This is so thoroughly in accord with my own convictions that I quite willingly rest the matter here.

BRAIN ABSCESS.

Nor is the surgical therapy of brain abscess in a much more satisfactory state than that of brain tumor. We are, again, confronted by the same difficulties of accurate localization, and by the fact that these lesions are perhaps more often multiple than single. Could one accurately appreciate every abscess or tumor before operating he could carry out a concerted plan which would be almost ideal. Of course much help would be afforded if one could trace the path of infection. When from the nasal cavities it usually involves the frontal portion; this being frequently true of infection proceeding from the mouth, *i. e.*, especially from the tooth sockets. When from the ear the abscess is usually found in the temporo-sphenoidal lobes, or posterior to them. When it follows external injury that itself will usually afford the clue to its recognition. In the latter class of cases the abscess is usually superficial, with irregular boundaries, while the surrounding brain is usually quite softened and infiltrated. It is only in the chronic cases that a more or less definite pyophylactic membrane is produced.

Two early experiences stand out most distinctly in my memory. One that of a man of forty-five who, twenty years previously, had struck the top of his head against a stable-doorway. He was made unconscious at the time but shortly recovered, and during the long interval had no particular brain symptoms. Suddenly, and while suffering from influenza, he developed brain symptoms, and died. A thick-walled abscess was found in one frontal lobe, and around it an area of active and destructive inflammation. Undoubtedly this purulent focus had become encapsulated, and remained latent during the intervening twenty years, to be fired up, again, so soon as his general vitality was lowered by another infection.

Again, I was invited to consult with several

neurologists regarding a man who presented nearly every indication of either abscess or tumor in the frontal region, and who was desperately sick. Something led me to examine his mouth, which I found studded with decaying and defective teeth; these were all cleared out and he made a prompt recovery from his brain symptoms.

These two cases thus taught me early the valuable lessons that early history is not to be neglected, while the latter case showed how serious brain symptoms may arise from causes primarily within the mouth.

In yet another case I was taught a most important lesson. This pertained to a somewhat elderly lady who had undergone repeated minor operations within the nasal cavity. She suddenly developed indications of cerebritis, with symptoms pointing to the frontal lobe. I trephined and found an abscess nearly an inch in diameter, which was evacuated. She improved for two or three days, then became rapidly worse and died. At autopsy another abscess, almost the counterpart of the first, was found on the other side.

Regarding suppuration extending from the middle ear within the cranium it must be said that the surgery of thrombosed sinuses is, as a rule, quite satisfactory. If by legitimate exploration, or by following evident indications, abscess within the brain proper may be also discovered, the patient's chances are obviously thereby improved; and yet here, again, we must never forget the possibility of multiple lesions, being tempted too often to rest content with the discovery of one.

Regarding the temperature fluctuations it has been held as significant that in most cases of chronic abscess of brain the temperature is subnormal, but this occurs not infrequently in connection with brain tumor as well, while, in both cases, the terminal stage is usually accompanied by pyrexia, to be explained by advancing cerebritis, or destructive changes, or perhaps both.

Ordinarily speaking the history of a case of brain abscess is of brief duration, while from the customary initial headache to the terminal coma is a matter of days or but a few weeks; nevertheless this does not make diagnosis much easier, since it often happens that a brain tumor which has finally declared itself will make very rapid progress and kill within six or eight weeks. We have, moreover, the same symptoms due to pressure and irritation, *i. e.*, headache, vomiting and optic neuritis. Definite motor symptoms are less likely to be pronounced and the general features are perhaps more confused even than in tumor.

What may be said, then, regarding surgical therapy? Obviously the inevitable course of acute abscess formation is toward a fatal termination. There is, therefore, every legitimate temptation toward operating in spite of the many discouragements met in this work. Here the aspirating needle may render valuable service, al-

though when the localizing features are misleading, and the abscess is small, pus may escape detection. It may even happen that pus is too thick to pass through the small needle ordinarily used, and thus a collection may be traversed without being tapped. For this very reason Horsley's evacuator is frequently a better instrument to use than the needle, if only one feels reasonably confident. It has, moreover, happened that the somewhat resisting wall of an old abscess has been pushed ahead or aside by the needle point and its contained material thus missed. After opening the dura the cortex is usually found to be pressed up against the latter with sufficient force to prevent leakage; but should a considerable amount be withdrawn and the surface then collapse, there would be abundant chance for leakage if precaution be not taken.

There is, at least, this to be said for surgical treatment of abscess that, if found, more can usually be accomplished for relief than is the case with brain tumors, certainly with those deeply situated. Furthermore, whereas, in but a small proportion of brain tumors is operation ever attempted, we may hold with regard to abscess that if it be producing *any* symptoms it is a perfectly legitimate object for attack. One may think then of operating for abscess when he would not think of doing the same thing in case of a tumor in the same location.

CONCLUSIONS.

In conclusion I realize that this may seem a pessimistic presentation of matters therein treated. I do not wish it to be so regarded. But I believe that the majority of surgeons throughout the country will agree with my position when they sum up their own experiences. The era which I have attempted to cover opened too brilliantly and too promisingly to permit the pace to be maintained. At its beginning there came, and within a short time, such a flood of light over a field previously so dark, that we all naturally enjoyed the glow and looked for a yet more brilliant aftermath. It is in this respect that disappointment has come to us. There has been but little to unlearn, but there is yet so much to be learned, and in directions where we still sadly need it. Until some better and more accurate way of localizing mental and body functions has been discovered we must still grope as we have been doing. Nowhere perhaps are men more tempted to report success, and more disinclined to silence regarding their reverses, than in just this sort of work; by this, too, we have been much misled.

To be sure, in the foregoing, I have referred only to the most difficult class of cases, and have said practically nothing about the *traumatic surgery of the cranium*, or certain other topics in which there has been great advance. So far as the actual structure of the brain permits our re-

sources today, in dealing with injuries, leave little to be desired. In the treatment of *hemorrhage*, spontaneous or traumatic, great advance has been made; in the treatment of *hydrocephalus* not so much; here the condition itself is almost insuperable. In the matter of technique a great advance has been made. We now have very nearly perfect contrivances for any manipulation which the construction of the parts may justify. Never until recently, for instance, have instruments been devised by which it appears impossible to injure the brain while perforating the skull. These, Hudson, of Atlanta, has finally succeeded in producing, and with them, as with forceps also of his device, the matter of raising osteoplastic bone flaps of almost any size or shape has been greatly simplified. With such instruments as these it is therefore a comparatively simple matter to carry out operations intended for decompression, which shall, in all probability, prove most effective in the relief of symptoms of brain pressure produced by lesions not permitting radical attack. In this respect there has been, even in the features which I have particularly discussed, a very distinct advance in the surgery of the brain; namely, the substitution of a decompression operation, planned and intended as such from the outset, for the much more radical yet much less safe and haphazard procedure so often previously adopted.

The surgery of the *hypophysis*, and one or two other of the recent methods of attack for particular indications, are yet so recent as not to come within the scope of this paper. They give every indication of brilliancy and promise, but are still on trial.

Finally I have endeavored to be perfectly frank in detailing my own experience and conclusions. As I look around me I do not observe that my colleagues are having any much larger measure of success in the same character of work. I think it would be well for all of us to thus compare experiences and, then try to reach an honest verdict, and that I think might be summed up in about the following terms: The surgery of *brain tumors* in general is still a disappointment, so far as radical measures are concerned. In all but a very small percentage of cases a decompression operation will better serve the purpose. With regard to *abscess* precisely the same statement cannot be made, because here unless we find the focus we accomplish practically nothing; but the localization of this focus is but slightly more accurate than formerly. In the matter of the *leptics* and the *psychoses* our operative measures are ample, and our technique sufficient save in one respect, the prevention of fresh adhesions. But we need far more accurate notions regarding etiology, and must learn to discriminate yet better between surgical and non-surgical cases.

Intracranial surgery has then, made large advance, but I must still feel that the hopes raised in 1888 have not yet been fully realized in 1913.

THE PRESENT STATUS OF NERVE INJECTION.*

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WE inject into nerves to interrupt conduction, either of pain in sensory nerves, as in neuralgias, or for local anesthesia for operative purposes, for spasms in mixed or purely motor nerves, or for the alleviation of disturbances which we are wont to call *trophic*.

If we take up first the alleviation of pain, our intentions are entirely different in the treatment of neuralgias, where we try to supplant the severing, resection or extirpation of nerves by injecting a fluid into the nerve which destroys the conductivity of the nerve, if not forever, then for as long a time as is feasible. While for local anesthesia (not in the "old sense," but local anesthesia by conduction, *Leitungs-Anæsthesie*) preparations are injected into the nerve to benumb it for the time of operation, or at least not much longer. In this case, the nerve is expected to recover again shortly, wherefore we can afford to inject into mixed nerves when injection produces not only anesthesia but motor paralysis at the same time.

One other purpose of injection I might mention here and that is injections according to Crile, called "blocking," to prevent shock to the central nervous system during operations.

I will begin to report on treatment of facial neuralgia by injecting into the branches of the trigeminal nerve, either peripherally, where they enter the face through their respective foramina, or at the base of the skull, where they emerge, or into the ganglion itself. Since Schloesser's first publication, in 1903, and shortly afterward, that of Ostwald and Levi-Baudoin, the literature on the subject has grown to such an extent that even to mention it would be far beyond the scope of this paper. It must therefore suffice to say that all the different methods strive to make sure of hitting the nerve by using anatomical landmarks. This necessitates two things, first, a more intimate knowledge of finer anatomy and topography, and secondly, the development of a technique which is decidedly more minute than we have been accustomed to heretofore.

If I may cite my own experience, I wish to give my results at large, taking 400 cases where the time elapsed since the alcohol injection has been at least one year. Wherever feasible I tried to produce the desired effect by peripheral injections, first, because it is technically much easier; secondly, because the possible danger of complications is more easily avoided; also because the foramen rotundum at the base of the skull, the exit of the second branch, is inaccessible in about 30 per cent. of skulls for anatomical reasons, and, finally, because the injection

into the ganglion itself carries with it the danger of ulcer of the cornea, just as in extirpation of the ganglion. During the last three years I have not had one failure, that is, all patients with facial neuralgia were relieved of pain following my injections. This is not only because naturally my technique has improved, but principally for the reason that I have learned in diagnosis no longer to mistake other nervous conditions for tic douloureux.

The fluid injected is 80 per cent. alcohol, the amount varying from 1 to 2.5 c.c. For a syringe I use a 5 c.c. record syringe, to which Schloesser's needles of rather heavy calibre, with non-cutting point, are attached by a bayonet lock. The needles are straight, of different lengths, or bent at different angles. I avoid curved needles, although Schloesser has recommended one for the injection of the mandibular branch, because the point of a curved needle is hard to locate during insertion.

All the methods of technique and the pertinent anatomy for injection into the trigeminal nerve have been described so admirably in Haertel's last publication (*Archiv f. Klin. Chir.*, Vol. 100, No. 1, 1912) that I will simply refer to it.

As everybody knows, this treatment is a *cure* only in so far as it frees the patient entirely of his pain attacks and anxiety, but recurrences are frequent, if not the-rule. According to my experience, about 22 per cent. have remained free longer than three years. These cases include patients who have been free for five years, and one might feel tempted to consider the result as permanent. In all the rest of the cases recurrences appeared between eight months and two years and a quarter, but the attacks were much milder, of less frequency, and usually submitted easily to a renewed treatment by injections, with the exception of a very small percentage of cases which seem to become refractory, where the recurrences follow each other in short remissions, and finally are very difficult to treat. Nevertheless, of nearly 500 cases, only two thus far have been operated after having been treated by me.

I have shown before that extirpation of the ganglion, after the method of Krause-Hartley, does not prevent recurrences, four cases having come under my observation. The opinion of Krause, that this is only possible where the operation is faulty, is erroneous, as is proved by Garré, where the second and third branch had been entirely regenerated, although the foramen ovale and rotundum had been closed by bone. Perthes has also seen one case and Oppenheim two. Whether Spiller's physiological extirpation of the ganglion by central severing of roots will prevent this I am unable to say. That all peripheral operations are bound to be followed by recurrences is so well known that it hardly requires mentioning.

The injections are made without narcosis or local anesthesia, because the patient is thus en-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

abled to tell you if the needle has struck the nerve. I attempted in patients who were more sensitive than others the following procedure, in order to spare them unnecessary pain: After injecting one or two drops of alcohol to make sure that the nerve was hit, I disengaged the syringe and injected .5 c.c. to 1 c.c. of 2 per cent. novocaine-suprarenin, to be followed by the 80 per cent. alcohol injection. But I found that the result was not so certain, the alcohol having been too much diluted by the preceding injection. As a matter of fact, hardly any of the patients object to the doubtless very painful procedure, since they have been submitted to so much violent, unnecessary pain that they are quite willing to stand a short pain for a therapeutic purpose. I have so far injected four patients at their own request under general narcosis with laughing gas.

DANGERS OF THE OPERATION.

I know of one death connected with alcohol injection for facial neuralgia. The patient had been treated by me and by others, and while it cannot be said that the brain abscess to which he succumbed was directly connected with the injection made by a colleague, because at that time the patient underwent operative treatment by a nose specialist also, the fact remains that the man died of a brain abscess subsequent to deep alcohol injections.

One of the four cases who had undergone Hartley-Krause ganglion extirpation and who was freed of his recurrence of pain by injection into the foramen ovale, died later, still free of pain, of an intercurrent disease. I had hoped to get very important information from the microscopic examination of that part of the brain where the ganglion is situated, first, what regeneration had taken place to explain the recurrence of pain after extirpation, and second, what changes had been produced by the injection of alcohol; but I was sadly disappointed, as even Spiller, who had the kindness to examine slides for me, could not come to any definite conclusions.

Other accidents have to be mentioned: amaurosis for half an hour to two hours after an orbital injection in two cases; four cases of facial paresis, which lasted from three to nine weeks, two published by Schloesser and two occurring in my own practice; two cases of oculomotorius paresis published by Schloesser and two by me; and in a small percentage (about 5 per cent.) of injections into the third branch, a more or less marked stiffness of the jaw, which caused the patient considerable inconvenience. A gangrenous herpes, which happened to one of Schloesser's patients, I have mentioned in a former publication.

One very peculiar feature of some of the cases where the third branch is involved is striking, namely, a snow-white coating of the tongue on the affected side, ending abruptly with the

median line of the tongue. This condition was described formerly as being very rare. Up to the present time I have personally observed six cases, in all of which the coating disappeared with the pain within twenty-four hours after injection.

To mention another detail, *viz.*, a diagnostic point of value: If a patient complains of constant pain, with no free intervals, it is at least doubtful whether we have to deal with a true case of facial neuralgia, which will yield to alcohol injection. In typical cases, certainly, the pain comes in attacks. As a curiosity, I might mention a case of facial neuralgia of W. Alexander and E. Unger, Berlin; they exposed the ganglion by trephining after Krause-Hartley, and then, instead of extirpating the ganglion, injected 80 per cent. alcohol into it, with a perfect result, and no danger of hemorrhage. I should like here to make a suggestion, although as yet I have not had any personal experience in this matter, and that is to inject alcohol into the nerves which supply the nose, namely, the supra-orbital and ethmoidal nerves, for hay fever, at least in those cases which are severe enough to rob the unfortunate victims of their enjoyment of life.

Of the other neuralgias which I have treated by injection may be mentioned occipital neuralgia, where the injection is somewhat more uncertain, since the point of exit of the nerve is very variable. Furthermore, for intercostal neuralgia with very good results; then two cases of herpes Zoster of long standing, where the trouble disappeared very shortly, and also injection for sciatica. In the latter cases, no alcohol has been injected, but 100 to 170 c.c. of ice-cold normal salt solution, under high pressure. Eighty per cent. of cures have so far been claimed, with the exception of Schlesinger, who claims 100 per cent. results or improvement.

Local anesthesia by infiltration with cocaine or similar substances into the tissues to be severed has been in use for quite a time, but in the last few years a new method has been developed by anesthetizing the trunks of the nerves supplying the operative region. It is the direct result of the injection method for facial neuralgia, at least as far as operations on the head are concerned. The same method has been pursued for major operations on the upper and lower extremities, and even for operations on the abdomen and pelvis. How far this has been developed may be seen from the statistics of certain clinics in Germany, where from 15 per cent. of all operations in the Berlin Charité up to 40.1 per cent. at the hospital in Zwickau have been done under local anesthesia.

To begin with operations on the head: Braun and Offerhaus injected into the respective branches of the trigeminus, but Haertel finally found it still more efficacious to inject directly into the ganglion of Gasser, giving .5 c.c. 2 per

cent. novocaine-suprarenin injection. He enters the foramen ovale according to Schloesser's method, going through the cheek, but not piercing the mucous membrane, thus avoiding the oral cavity with its dangers of infection, similar to the procedure recommended by me in 1908. The injection is to be very slow; after the third branch has been anesthetized, the needle is shoved still further upward, forward, to inject into the second branch. If the injection is successful the corneal reflex disappears. The anesthesia produced lasts from one to two hours. In spite of the anesthesia in all the deeper layers, the skin along the line of incision has to be injected specially by infiltration. Thus, resection of the lower jaw and an excision of the tongue for carcinoma have been carried out repeatedly, with full success.

Killian's operations for empyema of the frontal sinus can be performed by anesthetizing the first branch. Also operations on the nose and an evacuation of the orbit.

The principal advantage of this method is shown in the resection of the upper jaw, which until now was always considered an operation fraught with many dangers. With this method no tracheotomy is necessary, no tamponade of the trachea, no ligation of the carotid (as there is no hemorrhage), no narcosis, and therefore no aspiration pneumonia is possible. Eight resections of the upper jaw and twelve cases of carcinoma of the mouth have thus been operated, with no death, and only two slight post-operative lung complications.

The anesthetizing of the brachial plexus has been specially recommended by Kulenkampff, an assistant of Braun. He injects into the plexus above the clavicle, in the scalenus triangle, where injury of the subclavian artery can be easily avoided. Ten c.c. of 2 per cent. novocaine-suprarenin are injected, with the result of an immediate anesthesia and a complete paralysis, which follows somewhat later. The injections are made with a very fine needle, so that even the injury of a large vessel would be without consequences. Seven to eight minutes after the injection the Esmarch can be applied, and any operation on the upper extremity, including amputations, exarticulations, and so forth, may be performed. Kulenkampff reports 25 cases so far. Hirschel, of Heidelberg, injects into the plexus by injecting along the edge of the larger pectoral muscle, with the same results. He not only has thus operated on the upper extremity, but with certain modifications, also upon the mamma for cancer of the breast, and for thoracoplasty.

The anesthetization of the lower extremity, especially of the thigh, is decidedly more difficult. This method has been described by Babitzky, and more elaborately by Keppler, of Bier's clinic, in Berlin. While the anesthetization of the leg is comparatively simple, that of the

thigh necessitates injections into the lateral and posterior cutaneous nerve of the femur, the obturatorius and ischiadicus. With the many chances of missing one of the above nerves and the great technical difficulties, it seems to me that this is carried somewhat too far. I have the same impression of the attempts to inject into the minor pelvis, for operations on the female genitals and the prostate. The danger of injuring the rectum, the bladder and other organs seems to me too great to warrant its use.

As a historical remark, I should not omit to state that while conduction anesthesia has been studied and used mostly in Germany, Halsted, in 1885, was the pioneer in this regard.

FOERSTER'S OPERATION.

Resection of the posterior roots of the fifth to tenth dorsal nerves has been recommended lately and carried out a great deal for tabetic crisis. Since this operation is comparatively difficult, connected with a not very low percentage of death, especially where drainage had been resorted to, it was only natural that I should think of injecting alcohol into the posterior roots. For that purpose I made rather extensive anatomical studies, which convinced me that the posterior roots, from 6 to 10, can be found by the needle with reasonable certainty. But I was naturally somewhat averse to employ the method on the living, since it was impossible to say if the alcohol, even if injected very slowly, would not go beyond the root into the spinal-cord, and thus do unintentional damage. Nevertheless, I have injected in two cases .5 c.c. of 70 per cent. alcohol, with quite marked improvement for the patient, but not complete success, probably owing to the small quantity injected. Koenig has injected with the same idea 100 c.c. of $\frac{1}{2}$ per cent. novocaine solution into the muscles of the back on each side of the spinal processes and Cade and Leriche (*Deut. Zeit. f. Chir.*, February, 1913) have now proposed the method of treating gastric crisis like facial neuralgia, just as I carried it out three years ago.

Besides this, I shall try in future to inject the fifth lumbar and first sacral root in cases of *mal perforant* of the foot.

I have endeavored to give you as far as possible in such a short paper the present status of injections. While it may be left to the personal preference of the surgeons to use either general anesthesia or conduction anesthesia by injection, the treatment of facial neuralgia by alcohol injections has come to stay, and it is extremely desirable that more surgeons, and others who feel so inclined, should familiarize themselves with the technique, which is really not as difficult as it seems to be at first glance. The method is practically without any danger, and the results in nearly all the cases exceedingly gratifying to the surgeon and the patients, who are thus relieved of their frightful suffering.

RECURRENT VOMITING IN CHILDREN.*

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SYNONYMS.

CASES of recurrent vomiting in children have been reported as cyclic, periodical, fitful, lithæmic, bilious or nervous vomiting, migrainous gastric neurosis, and vomiting with acetonæmia or acetonuria. Recurrent vomiting and cyclic vomiting are the more usual synonyms met with. The former is the preferable term because the attacks of vomiting in this disease do not occur with the regularity implied by cyclic. The other would-be synonyms are not individually broad enough to include all the varieties of recurrent vomiting, which must remain grouped together until we command fuller and more certain knowledge of the causes and effects of faulty metabolism in their relation to clinical phenomena.

DISTRIBUTION AND OCCURRENCE.

The reports have come from widely distributed communities,⁴⁸ from Russia and Hungary on the east to Australia, Japan and China on the west, and from Canada on the north to Brazil on the south. The earliest report thus far discovered was made in France in 1841⁵⁷ as an account of periodical vomiting without signs of inflammation or organic lesion by Doctor Gruère,⁴⁸ which appeared in a publication of the Dijon Medical Society. The first paper in English was a report of nine cases contributed by Doctor Gee, of London, to St. Bartholomew's Hospital Reports for 1882. In later years American physicians have published their share of the important papers relating to this symptom-complex. Although recurrent vomiting cannot be classed as a very common disease, it undoubtedly occurs more frequently than it is recognized.

DEFINITION.

Recurrent vomiting may be defined provisionally as a toxic neurosis, characterized by uncontrollable but self-limited attacks of vomiting, attended with great prostration and marked wasting, lasting for a few hours to several days, recurring at intervals of weeks, months, or nearly a year, and tending to cease toward puberty or to be replaced in adult life by migraine.

ETIOLOGY.

While attacks of recurrent vomiting may occur in infants a few months old and in children approaching puberty, they are most frequently seen in the middle years of childhood. They are somewhat more common in girls than in boys. The patients are quite likely to be members of neurotic or gouty families of more or less wealth or indulgence, and the children themselves are

often high-strung and excitable. Some are easy vomiters, poor sailors and subject to car-sickness. Several patients may be found in one family. The subjects of recurrent vomiting are usually costive, may or may not have obvious digestive troubles, commonly lead an indoor life, and are somewhat more likely to have attacks in winter than in summer. An attack may be precipitated by unusual excitement or fatigue, by anger, fright, grief, shock, anxiety or overwork in school, a children's party, exposure to cold, general anesthesia with chloroform or ether, or blows on the abdomen. While some observers find that well marked errors in diet seldom determine an attack, others believe that over-eating and food idiosyncrasies are very commonly responsible for an onset. The exanthemata, bronchitis, rhino-pharyngitis, adenoids, refractive errors, appendicitis, intestinal toxæmia, genito-urinary irritation, lithæmia, acetonæmia or acidosis and intermittent hyperchlohydria have also been held to have a causal relation to recurrent vomiting.

Of the etiological theories of recurrent vomiting advanced in published articles that of acidosis as revealed by the presence of one or more acetone bodies in the urine has received most attention. Howland and Richards¹⁵ after two and one-half years of research work, during which period more than fifteen cases of recurrent vomiting came under observation, were led to believe that at the time of an attack the patient's power of oxidation is temporarily lessened and that he is therefore unable to detoxify an excess of poison absorbed from the intestinal canal in which putrefactive toxins are formed, as is indicated by the presence of abnormal amounts of indican in the urine. With diminished power of oxidation the catabolism of carbohydrates becomes inadequate for the simultaneous and dependent combustion of fats. The catabolism of fat is therefore incomplete. Acidosis results, and the acid products of the intermediate steps of fat catabolism find their way into the urine as acetone, diacetic acid or beta-oxybutyric acid. Interference with the oxidation of uric acid permits an increased amount of this acid to pass with the urine. Sedgwick^{26, 34} calls attention to the hypothesis that protein metabolism is also dependent upon carbohydrate catabolism and finds that in recurrent vomiting creatinuria is associated with acetonuria. The light colored stools commonly passed before and during the attack also indicate hepatic insufficiency.

Other observations have shown that acidosis occurs in many pathological conditions, in some of which it seems to be a matter of moment and in others not, and it may be present in the apparently well. During a year or so the urine of six hundred and sixty-two unselected cases was examined for the presence of acetone as the patients were admitted into London's Great Ormond Street Hospital for Sick Children. Acetonuria was discovered in four hundred and

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eight, or in 61.6 per cent. of these patients. The cases comprised most of the diseases met with in children between the ages of a few days and twelve years. Dr. Frew⁴⁴ shows that the occurrence of acetonuria did not depend upon the nature of the disease, but was definitely associated with the changes in the diet which occurred on entering the hospital. Acetonuria was found to be present in 100 per cent. of the infants changed from a diet of human milk outside the hospital to one of cow's milk within the hospital. A temporary inability to digest carbohydrates seemed to be the cause of a correspondingly temporary carbohydrate starvation which was slight or more marked in proportion to the degree of carbohydrate change there was in the hospital diet as compared with that which the child had had at home, and the carbohydrate starvation appeared to be the cause of the acidosis. The starvation was shown not to be due to the absence of carbohydrates from the diet, nor was it due to a diminished power of absorption or assimilation of carbohydrates, for in a majority of the cases the administration of dextrose would cause the acetonuria to disappear in about twelve hours.

The Great Ormond Street Hospital experience naturally suggests two questions: First, do similar changes in diet affect children outside the hospital in the same way? Second, if such effects do not occur at home, what other etiological factor was present in so many children as they entered the hospital? The first question has not been answered. In answer to the second one might suggest the possibility of a nervous disturbance due to the sick child leaving home and entering a hospital. Under such circumstances an infant will sometimes cry violently and almost incessantly for hours or even days, refusing to be pacified, and older children may suffer from fright, grief or homesickness. These are matters of nervous strain for little folk and quite sufficient in some cases at least to upset metabolism.

From a neurotic viewpoint recurrent vomiting seems to be related to migraine, and they may have common causes. Correction of refractive errors has relieved both, but, on the other hand, acidosis has occurred in both at the time of an attack. Fatal cases have been comparatively rare. Only about a dozen have been recorded. In them the finding of an enlarged fatty infiltrated or degenerated liver as the chief lesion has related these severe and fatal cases of recurrent vomiting to post-anesthetic poisoning. Both have received the title "crypto-genetic acidosis." The fact, however, that the excretion of acetone by the lungs, kidneys or skin sometimes does not occur in the prodromal period, but only after the onset of emesis, and is present at and after the crisis supports the view that acidosis is an incidental rather than a fundamental cause of recurrent vomiting.

Two attacks of recurrent vomiting in boy six years old were studied by Mellanby.⁴³ Normally at this age creatinin and not creatin is found in the urine. In the urine of this boy creatin was constantly present, and several days before any other hint of an approaching attack was observed the excretion of creatin gradually increased, while the output of creatinin decreased. Thus was the onset of symptoms predicted. On the other hand, acetone did not appear in the urine until the attack was fully developed, and the acidosis was cleared upon giving glucose without causing an abatement of the symptoms. Further, in an interval acidosis was produced by cutting out glucose and other carbohydrates from the diet without bringing on an attack. Mellanby thinks that the excretion of creatin was due to the action of some toxin, present through liver abnormality, which periodically became so pronounced as to make the child very ill. He says: "Undoubtedly one of the most important functions of the liver is to neutralize poisonous substances which may be either absorbed from the intestine or be formed in the metabolic changes of the body."

Rachford⁶¹ believes that "failure on the part of the liver to neutralize or destroy systemic and intestinal toxins is the most important cause of recurrent vomiting." His "hypothesis assumes that the liver from various causes, the chief of which is overwork, more or less suddenly develops a functional incompetency which renders it incapable of converting ammonia and the purin bodies into urea and destroys its so-called filtering function, which normally renders innocuous the fermentative products which pass through it from the intestinal canal. As a result of this liver inactivity both systemic and intestinal toxins escape into the general circulation and produce an auto-intoxication." He thinks that the widely varying symptom group seen in individual cases "may be explained by the fact that it is not always produced by the same autotoxins. In one group of cases the intestinal toxins may dominate, and in another the systemic; in still another the auto-intoxication may be almost or quite overshadowed by nervous symptoms produced by powerful exciting causes. In these cases the symptoms of hysteria and other neuroses may be commingled with those of auto-intoxication."

The etiology of recurrent vomiting is a subject which will bear further elucidation. The quotation from Rachford offers a suggestive working hypothesis. The possibility of predicting an approaching attack by the presence and gradual increase of creatin in the urine deserves wider attention.

SYMPTOMS AND COURSE.

Prodromata have been observed in only a portion of the cases reported. This may be due to the fact that many parents are inattentive or blind to minor initiative symptoms. For hours, a day or two, or sometimes nearly a week be-

fore an attack the child may be languid, pale, sallow, has dark rings about the eyes, may be irritable and easily fatigued, may be restless in his sleep, have a furred tongue, poor appetite, be constipated and pass light colored stools. Or the stools may be loose, spongy and sour. The breath may be offensive or sickish with the odor of acetone. There may be fever, flushing of the cheeks, epigastric discomfort or distress, nausea, headache, twitching of eyelids, stammering, or even a convulsion; or the child may be stupid or mildly comatose, or may have coryza, dyspnoea and sighing respirations. Sometimes the child is unusually thirsty. The urine may be decreased or increased in quantity, may be strongly acid, or emit the odor of acetone.

With or without premonitory symptoms vomiting begins abruptly, commonly in the night, and is violent or projectile and frequent, being either almost continuous or with intervals varying from fifteen minutes to a few hours. An attack lasts as a rule from several hours to four or five days, although exceptionally it may continue for one, two or three weeks. The vomitus consists at first of food, but soon of mucus and serum, which is later streaked with blood, or more rarely replaced by clear blood, and toward the end stained with bile. It may or may not contain free hydrochloric acid, may or may not smell sour, and may or may not emit the peculiar odor of acetone. The vomiting is uncontrollable. The stomach retains absolutely nothing swallowed, be it food, water or medicine. The abdomen may be somewhat tender as the result of straining in the act of vomiting, but is not frequently the seat of severe pain. While anorexia is complete the child usually suffers from great and distressing thirst. The tongue is coated, sometimes cracked, and the lips may be dry and parched. The breath often has the odor of acetone. The bowels are usually constipated, and the stools are whiteish or clay-colored and offensive. Exceptionally they may be somewhat loose and sour or offensive.

The temperature at first is usually but slightly elevated and later is normal or sub-normal. But the rare fatal cases with enlarged fatty liver die with a hyperpyrexia of 106 degrees F. or 107 degrees F. Vasomotor disturbances may cause coldness of the feet or of one side of the body. The skin may be dry and harsh, or cold and clammy. Occasionally slight icterus develops. Toward the end of an attack there may be present slight oedema or a pruritis with or without a rash, and the pruritis may be annoying for a time after vomiting has ceased. The pulse becomes rapid and weak, and may be irregular. Respiration may be rapid and shallow, or slow and sighing, and sometimes irregular. Dyspnoea without a pulmonary lesion, an air hunger, may be present. Exceptionally the presence of sore throat or tonsillitis is noted.

The patient may or may not have headaches.

Vomiting interrupts and seriously interferes with sleep. Restlessness is usually great, especially at the beginning of an attack, and choreiform movements of the muscles of the face, neck and upper extremities were observed in one case. Intolerance of the bed clothes is sometimes seen. The eyes may be half closed with the balls partly rolled up, and the conjunctivæ may be injected. Convulsions sometimes occur at the beginning of or during an attack. The patient may be delirious, or drowsy and stupid. The fatal cases with enlarged liver die in coma with or without convulsions.

Prostration is likely to be severe and may be extreme and dangerous. Wasting is rapid, the abdomen being retracted and the eyeballs sunken.

The urine is at first scanty, but toward the crisis is profuse and loaded with urates. It is strongly acid and commonly contains an excess of indican, uric acid, xanthin bodies, creatin, acetone, quite likely diacetic acid, and sometimes beta-oxybutyric acid. Much less commonly it may contain albumen and casts, or bile. Howland and Richards found an increase in the unoxidized sulphur and a decrease in sulphuric acid. The odor of acetone in the urine or vomitus, or from the lungs or skin, may be so strong as to be noticeable throughout the patient's room. The blood commonly exhibits a leukocytosis with a relative increase of the small lymphocytes.

Abortive attacks or recurrent vomiting occasionally occur in which patients are irritable, restless, and suffer for a few hours with nausea without vomiting.

The usual attack, in which the child is likely to be sick unto death, ends by crisis. The paroxysms of vomiting become less frequent and the intervening periods of sleep longer. Other symptoms disappear quickly, and convalescence seems remarkably rapid. Appetite and normal digestion return almost as abruptly as an attack begins. Within a few days or a week the child is his usual self again. Only very exceptionally does an attack end by lysis.

PROGNOSIS.

Prognosis is good. Death is very rare. Usual attacks, although sometimes extremely severe, are self-limited, and they tend to cease as the patient approaches the age of puberty.

DIAGNOSIS.

In a first attack of recurrent vomiting diagnosis is likely to be difficult and sometimes impossible. Vomiting in well marked and typical cases of acute indigestion, acute gastritis, invasions of fever, pyloric stenosis, appendicitis, intussusception, intestinal obstruction, renal disease, and meningitis should be, as a rule, fairly promptly and easily excluded. But in ill-defined and atypical cases the problem may be for a time so puzzling as to make subsequent events necessary to clear up a diagnosis. In later attacks with a past history of recurrence diagnosis is

usually much more easy. A gouty or neurotic family history; a high-strung, nervous, excitable child; recurrent attacks of violent, prostrating, wasting, uncontrollable but self-limited vomiting; without organic lesion but commonly with acidosis revealed by the odor of acetone in the breath, vomitus or urine; following some marked offense to the nervous system rather than an obvious dietetic error, is a pretty definite and distinctive picture.

With less emesis associated with severe headache recurrent vomiting may be confused with migraine, and it is probable that the two disturbances merge the one into the other. Yet well marked cases of the two conditions present quite different pictures, as is exemplified by the following histories:

A case of migraine: On the 25th of May, 1911, I saw C. F., a girl of nine years. Her parents belong to gouty and neurotic families, and they themselves are both neurotic. The patient has a brother suffering with an organic disease of his nervous system and she herself, as does also her father, gives a history of a past neurosis resembling petit mal. At the age of seven she had frontal sinus trouble, and at eight had her palate clipped and adenoids and enlarged tonsils removed. Immediately following the operative work she began to have so-called stomach upsets which at first occurred every other day for about two weeks, and which thereafter occurred every other week and later every third week, and later still every six weeks. Recently they had again occurred more frequently, every two weeks or every week. The attacks are characterized by headache of varying intensity, always coming on between three and eight o'clock in the morning and lasting from a few minutes to two hours. She does not always vomit, but usually does, and then she gets relief from the headache. The vomitus resembles the white of an egg, has no odor and contains no food. The child may or may not be ready for her breakfast, but is always ready for subsequent meals.

A case of recurrent vomiting: On the 24th of December, 1910, I saw A. H., a nervous, excitable boy of eight years, both of whose parents are markedly neurotic and belong to well-to-do, gouty and neurotic families, and whose younger brother also suffers with recurrent vomiting. He was breast fed for five months, and was afterward given modified cow's milk. Indigestion began at two months and became worse at five months when first fed cow's milk. He had diarrhoea but no vomiting. He continued to have attacks of diarrhoea every two or three months until he was four and a half years old. He had an attack of vomiting at the end of his first year. At four years he began to have attacks of recurrent vomiting, of which he had four in the following two years, about six months apart. From the age of six years he has continued to have attacks at intervals of from three weeks to

three months. A few days before an attack he becomes irritable, easily goes into a rage, is sallow, has a dark color under the eyes, lassitude and anorexia. Sometimes these prodromata follow fatigue or excitement, as after a Christmas dinner or a children's party. Vomiting is severe, and absolutely everything ingested is rejected for about three days. His temperature is slightly elevated, not over 100 degrees F. He has stomach ache and occasionally headache, a weak and irregular pulse and great and sometimes alarming prostration. For the first day or two his breath has a sickish odor. He passes gray-colored stools. In the middle of an attack the vomitus is streaked with blood. Later it is green with bile, when his mother has come to know that the crisis is near. Dieting has seemed to have no influence over the occurrence of the attacks. My first and only visit was made just after a severe attack. I subsequently learned that five months later a slight attack occurred in which he had three days of anorexia and nausea without vomiting and with a comparatively good pulse and no prostration. Just after this attack his milky urine was examined by Dr. C., of S., who reported that he found much albumen. The brother's attacks are similar, but among the brother's prodromata are a coated tongue and light colored stools.

TREATMENT.

All treatment in a well developed attack has failed to stop the vomiting. The usual remedies given for emesis have been tried in vain. Nothing stays in the stomach. Based upon the hypothesis that recurrent vomiting is an acid auto-intoxication, large doses of bicarbonate of soda have been administered. Ten to thirty grains have been given three times a day during the intervals, and every hour or two at the onset of an attack until one hundred grains have been given, or one hundred and twenty grains in twenty-four hours. Afterward a sufficient amount has been given to keep the urine alkaline. The alkaline treatment has been remarkably successful in some hands and a failure in others. It seems to be more likely to be successful when started in the prodromal period and a failure when begun too late. In fact, one is led to believe that if the prodromata are promptly recognized and the diet is immediately curtailed, or food is temporarily omitted, the intestinal tract cleared, and bicarbonate of soda given freely, an approaching attack can be prevented, even if the bicarbonate of soda has been discontinued during the preceding interval. This was apparently true in one of my cases, in which a watchful and efficient mother, the wife of a physician, cared for her child. The treatment is not simply alkaline. It is also one of dietetic rest, liver rest and toxic elimination, which is suggested by the occurrence of essentially the same events in the natural course of an attack,

catharsis in treatment replacing emesis in the disease.

Successful abortive treatment suggests prophylactic treatment along the same lines to be given at regular intervals somewhat shorter than the shortest interval noted in the history of a particular case.

If treatment is begun too late for the stomach to retain the bicarbonate of soda, a drachm or two of the remedy dissolved in eight ounces of normal saline solution may be given by rectum. If vomiting continues, the thirsty tissues may be supplied with normal saline solution by high enema or subcutaneous injections.

If incomplete catabolism of fat with acidosis were a fundamental etiological factor, an enema of dextrose might be indicated.

Occasionally an hyperdermic dose of morphine may be of service.

In the intervals much can be done to improve the condition of patients by eliminating from their lives, so far as may be, all factors that have been known in one way or another to be etiological in recurrent vomiting, as, for instance, constipation, over-eating, questionable diet, occasions for over-excitement, too much indoor life at home or in school, eye-strain, adenoids, or, in fact, anything, physical or psychical, which may lower resisting power or be a source of reflex irritation, and, on the other hand, by using all available means to build up resisting power and develop a hygienic and sane mode of living.

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PITUITRIN IN OBSTETRICS.*

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UTERINE inertia is probably more common than formerly, at least its occurrence is sufficiently frequent to be the occasion for long hours of suffering on the part of the patient and tedious waiting for the attendant. We see many cases where, because of slight progress in the mechanism of labor, we do not feel justified in operative interference, and several hours may thus be spent. Again, in primary inertia in the first stage the pains sometimes cease entirely or become very weak, no advance is made, and the alternative of version or high forceps, with its potentiality for injury to both mother and child, is presented.

The treatment of inertia in the past has been rather unsatisfactory, there have been practically no reliable oxytocic agents, many are mentioned only to be condemned as harmful or useless. Among these are the application of electricity to the uterus, hot vaginal douches, the insertion of a bougie into the lower uterine seg-

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ment, and last, but most lauded, quinine. Quinine has been employed for years and is still favored by a few. In my experience it has been very disappointing, and according to De Lee is not without danger to the foetus. George H. Ryder, of New York City, in a paper on primary uterine inertia, published in the *American Journal of Obstetrics*, 1912, in conclusion says:

"There is great need of a drug which will stimulate regular uterine contractions in primary inertia. Strychnine takes too long to act, quinine is of little use, alcohol is only occasionally efficacious, ergot is dangerous and should not be used until after labor. Pituitary extract offers hope."

My purpose today in this brief paper is to report my experience with an agent comparatively new, but much heralded, and to attempt to show from an analysis of a few cases that we have a drug which does offer hope in the treatment of uterine inertia, a drug that fills a much-needed want in our obstetrical materia medica.

The physiological action of an extract of the hypophysis was first discovered by Oliver and Schaefer and announced by them in 1895. They observed its effect upon blood pressure, which effect is similar to that of extract of the adrenals, but more prolonged. Falta says the action of extracts of the anterior and posterior portions of the gland are opposed to each other, and it is because of this fact that some confusion arose among the earlier investigators concerning its action, for some used an extract of the posterior portion, while others used an extract of the entire gland. According to Paulesco, the cortex of the anterior portion, and to Cushing, the entire anterior portion, is necessary to life, while both agree that animals may live after extirpation of the posterior portion. The posterior, improperly called infundibular, portion of the gland is that used in preparing the extract. Schaefer also was the first to observe a diuretic action. In 1910 Ott and Scott claimed galactagogue properties for it. Dale, in 1906, while working out the physiological action of ergot, discovered incidentally that an extract of the pituitary body given intravenously to a rabbit caused uterine contractions, but it was not until November 4th, 1909, that Blair Bell, before the Liverpool Medical Institute, first described its use in obstetrics. He, like Frank Hochwart and Fröhlich, of the Pharmacological Institute of the University of Vienna, worked first with rabbits, and later used it in uterine inertia, subinvolution and post-partum hemorrhage with astonishingly good results, and concluded "that in the future we shall rely on the infundibular extract to produce contractions of the uterus in many serious obstetrical complications and difficulties."

The chemistry is at present unsolved, but Dale thinks its pressor action is due, like that of ergot, to the presence of certain amines.

IN UTERINE INERTIA.

Oscar Bondy, at the University of Breslau, has reported ten cases, and his results were very satisfactory in eight, or eighty per cent. The average duration of labor before the employment of pituitrin was thirty-six hours, the average time elapsing between the time of injection and birth of child was twenty-eight minutes, the minimum being five and the maximum sixty minutes. The two unsuccessful cases were both elderly primiparæ, one of these a large child presenting by the breech, which required artificial delivery. In the most of his cases the membranes were ruptured and dilatation was almost or quite complete.

H. H. Schmid, first assistant obstetrician at the University of Prague, reported fifteen cases successful, and says in all there was a surprisingly small post-partum loss of blood. Ergot has been given up in his clinic since the advent of pituitrin. Schmid use pituitrin in combination with pantopon, a substance representing all the active principles of opium, with signal success in reducing suffering and at the same time increasing the strength of the contractions, and thus hastening the termination of labor. He thinks in many cases it will displace the forceps. The only objection mentioned was the presence of after pains in 25 per cent. of the cases.

Studený, in the Moravian Lying-in Institution at Bruenn, used it eighty-one times. In the majority of cases 1 c.c. caused pains to intensify in three to five minutes. He reports its action very pronounced in the first stage, and that the results were excellent when given later. Average duration of labor in his series before administration was for primiparæ forty-two hours and in multiparæ thirty-four. Pituitrin is the most reliable oxytocic agent known at the present time."

J. Hofbauer, of the gynecological clinic of the University of Königsberg, used a dosage of .3 to .6 c.c., repeated in some cases. Remarkable results were noted in twelve cases. Pains were not tonic, but resembled normal contractions; there were no unfavorable after-effects. He has carefully watched the foetal heart in labor and believes the drug will not cause asphyxia. On the contrary

Rocmer, in reporting seventeen cases, says ten ended spontaneously, and in two of the remaining seven which were delivered by forceps the operation was demanded by poor foetal heart sounds, *which I think, is not inconsistent with the course of any prolonged labor in which pituitrin was not employed.* [Italics are the author's.]

Nagy has often noted a lessened frequency in foetal heart sounds.

Otto Fischer, of the gynecological clinic of the University of Wurzburg, says: "I have employed pituitrin in fifty obstetrical cases; this preparation may be depended upon as an oxy-

toxic in primary and secondary labor pains, but acts more energetically if labor is well advanced. As a preventative of post-partum hemorrhage, if an injection of pituitrin is administered before the end of the second stage the muscular fibres of the uterus are rendered more sensitive, making it much easier to combat a severe secondary hemorrhage. "I have never noticed any unfavorable after-effects on mother or child, and believe it a most important addition to the materia medica of obstetrics."

Emil Vogt, Royal Gynecological Clinic at Dresden, employed it in over 100 cases. Like *Fischer*, he believes that the second stage of labor is the most opportune time for its exhibition. He thinks that though pains are increased both in intensity and duration, that the suffering is no more than in an ordinary, normal case. Forty-two cases were treated in the second stage, and in these it failed but once. Though narrow pelvis are very common in Dresden, forceps were not applied in a single case where pituitrin was used, no tetanic contraction or injury to child was noted. It may be used even in narrow pelvis.

"According to our experience, pituitrin is the most ideal oxytocic we possess today."

C. Hahl, of Helsingfors, reports thirty cases, with failure in two, or 6 2/3 per cent. Also two Cesarean sections, in one of which injection was made into uterine muscle.

The duration and frequency of pains was studied with the apparatus of *Westenmark* in four cases. This enabled him to record the intra-uterine pressure on a mercury column. Some cases were not affected, but with most it excites regular and powerful contractions, remaining of uniform intensity for ninety-six minutes, and then weakened.

H. Fries, of the gynecological clinic of the University of Greifswald, believes pituitrin of great value in increasing labor pains; nevertheless, he would interdict its use in cases of obstruction, but admits that in slight degrees of pelvic contraction it is permissible.

Hamm cites twenty-five cases with a successful issue in twenty-four.

A. Bonnet Laborderie and *Fourdinier* in a recent article say that the average dosage used in

Number	Para.	Age	Pres. and Pos.	Pelvis.	Duration Labor When Given.	Stage of Labor When Given.	Elapsed Time Between Injection and Birth of Child.	Length of 3rd. Stage.	Weight of Child.	Result.	Remarks.
1	I.	22	ROP	Nor.	29	2nd	1:45	15	8	success	
2	II.	27	LOA	Nor.	19:15	2nd	1:00	15	7	success	
3	V.	29	ROP	Nor.	12:00	2nd	20	35	9 3/4	success	
4						1		retain		failure	Broken cardiac compensation, pains inc. tempor. only.
5	I.	21	ROA	Nor.	8:00	1	2:45	20	9	success	Two doses two hours apart
6	II.	25	ROA	Nor.	6:05	1	40	25		success	
7	V.	21	LOA	Nor.		1	50	20		success	Plac. prævia lateralis, Vorhees bag.
8	I.	39	LOA	Nor.	9:29	2	2	30	5 3/4	failure	Forceps to extend head
9	I.	23	LOA	flat 9.5	19:00	1	18:30	15	8	failure	
10	I.	25	LOP	J. M.	20:45	1	2:40	5	5 3/4	success	
11	IV.	25	ROA	Nor.	18:30	2	35	10	5 2/3	success	
12	I.	25	LSA	flat 9.5	17:25	1	1:21	14	6 3/4	success	Pit. engaged breech in a small pelvis and brought it to perineum
13	IV.	25	ROA	Nor.	8:30	2	20	20	8 3/4	success	
14	I.	18	ROA	Nor.	17	2	25	5	7 1/4	success	
15	XI.	41	LOA	Nor.	7:15	2	16	30	9	success	
16	I.	24	ROA	Nor.	16	1	5:34	10	6 3/4	par'l suc.	Forceps for extens. only. Repeated dose should have been given in 2nd stage.
17	I.	25	LOA	Nor.	24:50	2	1:45	40	7 1/2	failure	Forceps Med. B. pains incr. but not q. s. had been given in 2nd stage.
18	II.	27	LOA	Nor.	16:45	2	35	15	7 1/2	success	
19	II.	18	ROP	flat 10	16:45	1	10:45	8	7	partial	Pit. should have been repeated in 2d stage
20	VII.	31	hand & cord	fl. 10	10:15	2	1:58	11	8 1/2	partial	Prolapse of cord & hand version
21	II.	29	LOA	sl. flat.	7:55	2	25	15	8 1/2	success	
22	XI.	40	LOA	Nor.	11:35	2	33	8	7 3/4	success	
23	I.	20	ROP	Nor.	9:30	2	45	20	6 1/2	success	
24	I.	21	LOA	J. M.	?	low	30	15	5 3/4	success	
25	I.	20	LOP	Flat 9.5	52	2	45	20	7	success	
26	I.	18									Only 3 f. dil. when given Case of post-partum metrorrhagia.

Case 5—Two doses, two hours apart.
Case 17—Two doses, 40 minutes apart.
Case 19—Two doses 1 hour apart.

France is smaller than in Germany. Contractions excited by pituitrin are normal in intensity, duration and frequency; the effect was noted fifteen minutes after its use; it increases progressively for an hour, then diminishes gradually. They think it should not be used in heart cases, because symptoms of cardiac embarrassment, such as vertigo and dyspnoea, have occurred. They are the only observers to mention its administration as a powder of the fresh gland as well as the intra-muscular method.

It will be seen from the foregoing that the foreign literature, particularly the German, is replete with detailed reports of the use of this drug; and very little has been recorded in the American literature, but Humpstone, of Brooklyn, in a paper read before the New York Obstetrical Society about a year ago and published in the *American Journal of Obstetrics and Gynecology* for September, 1912, reports sixty-four cases of inertia treated by it. His dosage was 4 c.c. repeated every twenty minutes for three doses if necessary. This is larger than that recommended by most authors. (I have never given more than 1 cc. as an initial dose, and have repeated it but once in any of the cases.) He made blood pressure determinations and found the rise in blood pressure was not as great as generally supposed, twenty points being the maximum and eight the average. He says: "I have come to the belief that it is a potent agent to cause uterine contractions under certain conditions; sometimes it fails completely; just why I do not know, but its effect, when properly administered, is so satisfactory that it occupies a definite place in my obstetrical therapeutics."

De Lee in his text-book says: "Pituitrin does strengthen pains, but there is a slight danger of asphyxia of child and post-partum hemorrhage for the mother."

Brodhead, of New York, has used pituitrin in a number of instances, with very good results in some cases. It is marvelous to note the change from weak, inefficient contractions to hard rhythmic pains.

In reviewing the literature I found a total of 719 cases in which pituitrin was used for inertia. All authors had had exceedingly good results and went on record as heartily in favor of its use as an excitant of deficient pains in labor. All did not give detailed reports, but a rough estimate from those furnished would place the number of successes in its use to terminate labor as about 75 per cent.

INDUCTION OF LABOR.

Richter, of the obstetrical clinic of the University of Vienna: In three cases where induction was necessary, because of tuberculosis, could not induce.

Hirsch, of the School for Midwives, at Strassburg: Impossible to excite contractions in a quiescent uterus, even at end of pregnancy and

after repeated injection, but where labor was induced by mechanical means, pituitrin was of great aid.

Schiffman, assistant in gynecological department, K. K. Krankenhaus widen, Vienna: At end of pregnancy in three cases labor was induced by 1 c.c. In cases of abortion it is effective only after pains have begun. It is unsuitable for inducing abortion.

Robert Stern, assistant Royal Gynecological Clinic, University of Breslau: In three cases of induced labor, in two the end was accomplished by pituitrin alone; in the third it acted only with the aid of a dilator.

Vogt: It proved unsatisfactory in several miscarriages when put to the test.

Fischer: As an agent for producing premature birth it did not commend itself to me, or for induction at end of term.

Studeny: In gynecologist cases, especially in the therapy of abortion, pituitrin in our hands did not prove satisfactory.

Humpstone: In early pregnancy it would seem little need be feared from the pernicious use of pituitrin as an abortifacient. In the early months it will cause contractions, but no expulsion. It hastens delivery in those cases nearer term after the introduction of a bag. In ten cases at full term or over 4 c.c. was injected on each of three days in succession, and in no case did labor come in within three days of last injection.

Benthin, in a series of forty cases, has used pituitrin to distinguish between true and false labor pains. The pains following its use to induce labor are of short duration, while true labor pains, even small single doses, increase and the action is continued. This has led him to conclude that induction of labor with pituitrin is successful only in exceptional cases.

Patek reports three cases of abortions in which pituitrin was injected where the contractions ceased after its administration and pregnancy proceeded. In another case, that of Mackenrodt's in a premature labor the cervix was dilated to four fingers with a hydrostatic dilator, and pituitrin was given; instead of a rapid termination the bag was expelled and pregnancy progressed after the contraction of the cervical dilatation.

EFFECT ON THE BLADDER.

A. Spire and *J. Parisot*: In women in labor who cannot urinate it has been found to cause natural urination.

R. T. Jaschke tried pituitrin in forty-four post-operative cases as a vesical tonic; spontaneous urination occurred in twenty-one cases on first day, in fourteen on second day; in five there was no result.

In 1911 *Hofstaetter* showed that vesical atony can be treated in more than 75 per cent. of cases where patients could not urinate by the injection of a single dose of pituitrin.

GALACTAGOGUE.

Little has been written concerning its effects as a galactagogue, but *Reynolds*, of Philadelphia, reported the establishment of secretion in the breasts after its absence for sometime in four cases; it did not continue very long in two of the cases, however.

POST-PARTUM HEMORRHAGE.

Many of the authors quoted as favoring pituitrin for inertia are enthusiastic over its use as a prophylactic against bleeding after delivery, and advise its use for active post-partum hemorrhage; the reasons given for its superiority over ergot being, more prolonged action, a drug of standard strength and presser content and prompt effect given intra-muscularly.

SUB-INVOLUTION.

S. J. Aarons: In a case of hemorrhagic post-partum which had been curetted without avail the extract was administered once weekly for six weeks. The uterus involuted from five to three inches, as measured by the sound, the general condition improved and remained so six months after treatment.

Reynolds, of Philadelphia, in an article in the *American Journal of Obstetrics and Gynecology* in October, 1912, reports two cases similar to Aarons'. The first was seen on the 23rd day post-partum after ergot, quinine, strychnine and hot vaginal douches had been tried. The extent of this bleeding can be judged from a pulse of 120; the fundus was on a level with the umbilicus. One c.c. of pituitrin was injected, followed the next day by two more injections. In five days the uterus was in the pelvic cavity and there was no bleeding. The second case of hemorrhage was treated at the seventh week; not quite so severe as first, but treated practically the same, *e. g.*, three injections on successive days, with same good results.

I had a similar case. Mrs. S., aged 18, para., I delivered January 26th, remained in bed nine days; started to flow again March 26th, and has flowed up to present time (April 9th); has lost considerable blood, at times almost a flooding; uterus not completely involuted; 1 c.c. pituitrin injected; patient reported next day less bleeding and the dose was repeated; two weeks later the patient reported no hemorrhage for several days.

PLACENTA PRÆVIA.

The drug has been used in this condition with apparently flattering results in a sufficient number of cases to at least warrant its trial under suitable circumstances.

Trapl, in a paper published in October, 1912, describes his results with sixteen cases; thirteen children were born alive, two died later of inanition, three were stillborn, and two of these three were dead before the use of the drug. There were three cases of marginal, ten lateral and one central. *Trapl* advises that if only a

small portion of placenta presents in a vertex case and the cervix is partially dilated, to rupture the membranes and give pituitrin; if considerable placenta presents, he recommends version and then pituitrin. The increased contractions control the hemorrhage by engaging the breech against the placenta, and the case is allowed to proceed. If the cervix is not opened much he endorses the use of bags and pituitrin in combination.

Hauch and *Meyer* also believe pituitrin is of value combined with rupture of membranes in this condition.

Vogt says: "We used pituitrin seven times in placenta prævia lateralis with good success; after rupture of membranes pains were intensified and labor shortened." I saw one case with Dr. G. H. Gage in which pituitrin was used in conjunction with Vorhees bag with very happy results.

Briefly, the action of pituitrin is:

1. It increases uterine contraction in labor, the effect being noted in from two to fifteen minutes after injection, and lasting about ninety minutes; the pains are made greater in intensity, duration and frequency, and according to practically all observers are of normal character, though two observers noted tetanic contractions.
2. It raises blood pressure and slows the pulse.
3. It prevents vesical atony.
4. It will cause contraction of the uterus after third stage in hemorrhage.
5. It lessens the length of third stage.
6. It increases, temporarily at least, the breast secretion.
7. It of itself will not induce abortion, but in one already begun, that is, if some dilatation has occurred, pituitrin is a great aid. There is a disagreement as to whether it will induce labor at term, the consensus being that it will not induce labor unless some mechanical measure is used in conjunction with it, such as hydrostatic bags or insertion of a bougie.

DOSAGE AND ADMINISTRATION.

It should be given intra-muscularly, 1 c.c. to the dose, and repeated in sixty to ninety minutes if no result is seen, or if the contractions stimulated by it wane.

CONTRA INDICATIONS.

A blood pressure of 150 or over, myocarditis, nephritis. In any case of marked disproportion between the presenting part and the pelvis, or other obstruction. This would not necessarily exclude its use in all cases of contracted pelvis, provided the contraction was not sufficient to prevent the engagement of the head. As a matter of fact, I feel that it has a distinct field in cases of slight or moderate contraction of the pelvis.

REPORT OF CASES.

Twenty-six cases have come under my observation, either as private patients or occurring in the service of the Rochester General Hospital.

One case was that of sub-involution reported above; the remaining were those in which the drug was used for inertia. Of the twenty-five cases, eighteen (72 per cent.) were distinct successes, three were partially successful, and four failures; fourteen were multiparæ, with one failure; eleven, primiparæ, with three failures. The average time elapsing from the injection to the birth of the child in the eighteen successful cases was fifty-five minutes, and in thirteen of these, thirty-two minutes. The drug was administered in the first stage or before complete dilatation in five cases, these were all cases of inertia and yet the average elapsed time from the injection to the birth of the child was ninety-one minutes; practically the same as the average length of the second stage in normal labors, viz., ninety-two minutes for multiparæ and ninety-six minutes for primiparæ. Whether pituitrin will shorten the duration of a normal labor where no inertia exists, I do not know, but from the above facts it would seem that it would. These data were based to be sure on only a few cases.

The average duration of the third stage, or placental period, was $17\frac{3}{5}$ minutes, just one-half the average normal period. No hemorrhage occurred in any of these cases. No children were born with asphyxia. None of these 25 cases required catheterization, though some had lacerations and immediate repair. These twenty-five cases were taken at random. Most of the cases reported as successful were those in which the drug was exhibited in the second stage. No especial effort was made to select suitable cases for the trial of pituitrin. Had the indications been narrowed I feel sure the percentage of successful cases would have been larger. In analyzing the four failures it will be seen that Case 4 of myocardial insufficiency with only partial cervical dilatation was not a suitable case. Likewise Case 9, that of a justo minor pelvis, with a conjugata vera of 9.5 c.m., would certainly not be selected as an ideal one for the exhibition of a uterine stimulant, for this terminated in a very different high forceps. This leaves us two examples of failures, Nos. 8 and 17, the former an elderly primipara, and the latter a young primipara, both with ample pelvis, and both L.O.A. positions, but, nevertheless, failures. Why, I do not know.

Again, I would not consider in a case that the drug had failed if, for instance, a head was made to engage and brought down to the pelvic floor through its action, and if because of a contracted outlet, or, as in Case 16, poor extension of the head, forceps were necessary, this case I consider a partial success.

The ideal case for the use of pituitrin is one of full dilatation or nearly so, with engagement of the presenting part, no obstruction, but pure inertia, I would not have it understood that I would limit its use to only such cases as this ideal

one, for I have seen very good results follow its use in the first stage.

As examples of successful cases I would briefly quote Nos. 21 and 23, typical of fifteen of the cases. The first a para II, age 29, housewife by occupation; previous labor of three to four days' duration; terminated instrumentally; pelvis only slightly justo minor, patient went into labor March 1st; at 5 A. M., fair pains up to about 10.30, then less frequent and weaker; at 12.55 1 c.c. of pituitrin was injected into the gluteal muscles; the head at this time was in a mid position; within fifteen minutes the pains increased markedly in intensity and duration, and at 1.20 the baby was born; placenta came spontaneously in fifteen minutes.

Case 23, para I, age 20, Russian, normal pelvis, position R.O.P., labor began 3 A. M., pains continued good until the head reached the perineum at 11.30; they then gave out completely, and at 12.30 1 c.c. of pituitrin was given; within ten minutes the pains became rapidly stronger, and at 1.15, or 45 minutes after its injection, a $6\frac{1}{2}$ -pound baby was born.

As an example of failure, Case 8, para. I, age 39, roomy pelvis, L.O.A., labor began 2 A. M. and continued up until 10.30 A. M.; at 11.29, after an hour of inertia, with the head in low median position, 1 c.c. pituitrin was administered; pains were increased, but not sufficiently to effect a delivery, and at 12.17 low forceps were applied and head easily engaged in perineum and then instruments removed. Possibly the dosage in this case was too small.

As an example of partial success, Case No. 19, a dry labor, with persistent occipito, posterior position, para. II, age 18, small stature, American by birth; previous labor she says was of seven days' duration and terminated in the birth of twins of six and a quarter pounds weight each; pelvis, 22, $26\frac{1}{2}$, 19, $10\frac{1}{2}$, position R. O. P. (persistent); membranes ruptured February 6th, 6.30 A. M.; pains began 5 P. M. same day and continued of good quality during first stage, three to ten minutes, and lasting twenty to forty seconds; toward midnight they diminished in intensity and frequency, with a corresponding lack of advance in the head, now partly engaged; accordingly, at 11.55, 1 c.c. of pituitrin was administered, which increased temporarily the pains, and again at 12.55 another dose followed by greater contractions; it was not until 9.40, however, that birth occurred. The criticism in this case now is that the pituitrin should have been repeated again about 5 P. M. after the head had come down into the pelvis.

Another case, No. 12, exemplifies the great value of this drug. Briefly, it was a para. I, age 25, past history negative. Pelvis flat with conjugata vera of 9.5 c.m. position, left sacro anterior; after the patient had been in labor $17\frac{1}{2}$ hours the breech was still high, cervix di-

lated three fingers, and showing no advance with pains; now weakening; 1 c.c. of pituitrin was given at 4:25 and in an hour and a quarter the breech was brought almost down to perineum, when ether was given and delivery completed as normally.

CONCLUSION.

1. In pituitary extract we have the most powerful stimulant to uterine contraction yet discovered.

2. Its greatest value is in its use in uterine inertia.

3. The ideal time for its exhibition is in the second stage, though good results follow its employment earlier; in these cases it is usually necessary to repeat.

4. No untoward results were noted in the twenty-five cases for mother or child, such as post-partum hemorrhage or asphyxia.

5. It shortens the third stage.

6. It renders catheterization post-partum almost never necessary.

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Discussion.

DR. ROSS MCPHERSON, in opening the discussion of Dr. Quigley's paper said: I fully agree

with practically everything that Dr. Quigley has said in this extremely well-worked out and interesting paper. Having used pituitrin in a large number of cases, I feel that it is a valuable remedy which has a definite place in the therapeutic armamentarium of the obstetrician. There are several points in its use, however, which call for a little caution and a word of warning; placing emphasis on these points will not be amiss.

We should bear in mind that under no circumstances should the pituitrin ever be given unless the os is fully dilated or fully dilatable. Failure to observe this point may result in closure of the cervix or in an unpleasant tear. Next, the pituitrin should not be given in any case where there is a great disproportion between the presenting part and the mother's pelvis, as rupture of the uterus may result. Thirdly, after the child and placenta have been delivered, in a case where pituitrin has been used, the uterus should be carefully watched for some time to see that it does not relax, as it is apt to do.

I have made it a routine to give ergot in all cases where pituitrin has been used. I feel that in those cases where lack of progress is due to uterine inertia where we have not a great disproportion between the size of the head of the child and the mother's pelvis and where the cervix is fully dilated or dilatable we can accomplish a great deal by the use of this powerful uterine stimulant.

DR. JOHN O. POLAK said: Pituitrin is dangerous except in selected cases, especially in contracted pelvis, as the uterus may be ruptured when a high retraction ring is formed and molding is not completely effected. Such a case came under my observation. Its use should be limited to the case in which the head is well engaged, the cervix dilated or nearly so, where we know there is no outlet contraction. We believe it increases the laceration of cervix.

DR. S. M. BRICKNER said: I wish to touch upon one point only, the uselessness of pituitrin in cases of abortion before the third month in which it is used to terminate the abortion. We have found it useless for this purpose. It would appear that its employment is to be limited to cases at full term. It is of no use then for the induction of labor, as we have demonstrated in about ten cases.

DR. F. C. GOLDSBOROUGH said: It cannot be too strongly emphasized that this drug shall be used only in properly selected cases where there is no great disproportion between the child's head and the pelvis.

DR. A. S. HOTALING said: Personally following personal observation of about fifty cases, I believe pituitrin should be used with great caution, and not until a diagnosis of the real cause of uterine inertia has been made. Uterine inertia is generally due to some mechanical cause or diseased condition of muscle, and sel-

dom to a true lack of tone of the uterine muscle. With a normal pelvis, a dilated cervix, a flabby patient and irregular feeble form, it is of value. In a case of post-partum hemorrhage, due to uterine inertia following twin birth and one following hydramnion, after ergot has been given without result, pituitrin caused firm contraction within a few minutes. In the treatment of post-partum hemorrhage, I believe, we have a valuable therapeutic agent.

DR. W. H. BELKNAP said: In my experience, when pituitrin works, it works very quickly, not in ten or fifteen minutes, but in three to five minutes. I have never seen any untoward results. In one case there was marked increase in the pains within two minutes of injection (1 c.c.) followed by delivery. Twelve hours afterward the patient had to be catheterized. There was an unusual flow of milk when lactation was established in two days.

DR. CHENEY SPOFFORD said: Primipara membranes were ruptured at 1 A. M.; pains regular from 3 A. M., becoming severe about 9 A. M., but dilatation was slow, being equal at 10.30 to only about the size of a half dollar. Pituitrin 1 c.c. given at 11.55. Pains were not so greatly increased in severity, but dilatation progressed rapidly. The child was delivered at 1.15 P. M.

DR. J. K. QUIGLEY said: I am very much gratified at the discussion aroused by this subject; my chief object in presenting it. The infantile tremor reported by Dr. McPherson I have not seen nor encountered in the literature. I am glad that Dr. Polak has brought forward the case of uterine rupture. I can readily understand how this might be possible where there was obstruction and if large doses of the drug were used. I wish to emphasize what I said as to contra-indications—that pituitrin should not be used in the presence of actual obstruction. If a slight pelvic contraction exists and the head is engaged, I see no good reason why, if *inertia supervenes*, pituitrin should not be employed.

I do not agree with Dr. Hotaling as to the cause of inertia. I believe it often occurs as a distinct entity and not due to mechanical causes.

This series of cases is, of course, far too small to draw conclusions from, but added to the long list of those already reported, furnish enough material to at least prove that pituitrin is of distinct value in obstetrics.

THE DIFFICULTIES IN THE DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.*

By SAMUEL M. BRICKNER, A.M., M.D.,
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WITH increase of experience, comes an augmented sense of responsibility in diagnosis and a chariness as to dogmatism. In no field of medicine is this exemplified

to a greater extent than in the diagnosis of pelvic disorders, and despite the assertions of some writers that the diagnosis of extra-uterine pregnancy is easy, the greater the number of cases of this condition that passes under review, the more difficult does it appear always to be certain of one's opinion.

I have been especially impressed with this fact because of the last fifteen cases admitted to the first gynecological division of Mt. Sinai Hospital (Dr. Brettauer's service), eight were incorrectly diagnosed before the operation. In some cases a hydrosalpinx, a pyosalpinx or an ovarian cyst was mistaken for an ectopic gestation, and the reverse was also the case. All these cases were carefully studied as to their histories, their physical findings and their blood examinations. All of the cases were examined by at least two of the attending staff and still the errors crept in. We are no more, and probably no less expert, than the average gynecologist and yet with all our efforts to be as nearly correct as possible, we have failed in over fifty per cent. in the last series of cases.

It probably will not be denied that if mistakes of this kind are made in a closely scrutinized hospital service, where patients are observed by many physicians, they are no less common outside of hospital walls.

This paper is based on a study of 138 cases admitted to Dr. Brettauer's service since March, 1903.

If one reviews the literature of extra-uterine pregnancy for the past twenty-five years, he will find it stated, in almost dogmatic fashion, that, given a history of irregular menstruation pain in one side of the pelvis, a scant, usually dark flow, that the diagnosis of extra-uterine pregnancy is presumptive. Added to this is usually the additional statement of a previous period of sterility. Refer to the French, English, German and American text-books, and one will find these elements of diagnosis repeated, handed down from one writer to another, often with little more to aid the student than the bald statements of fact. Some authors have amplified their remarks to a greater or less extent, but in general, the literature—except for some monographs—is unsatisfactory on this topic.

Let us review then the elements which go to cause tubal pregnancy, and the symptoms which it evokes, together with a statement of the history of a typical case: the difficulties in the way of accurate diagnosis will then become clearer.

In the first place it behooves us to admit at once that we are still in ignorance as to the causation of ectopic pregnancy. Webster may be right in his atavistic theory. Miholitsch has tried to make out a case—in some instances at least—for minute accessory lumina of the tube; and Vineberg has actually had a case in which a polyp was present in the tube, while many writers have insisted upon a previous inflammatory condition of the tubes as a causative factor. Let us admit

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

that we do not know. One or any of these factors may be at fault, but I hesitate somewhat at accepting the hypothesis of previous inflammation, since we have seen several cases in which an extra-uterine pregnancy followed upon the first coitus.

A typical history of a woman suffering from an extra-uterine pregnancy, usually reads as follows: There may have been a longer or a shorter period of sterility, followed, as the patient believes, by pregnancy, the menses having been absent for one or two periods. In the second or third month of pregnancy, bleeding suddenly appears which is taken as the sign of an impending abortion, but which does not stop in spite of rest in bed and appropriate treatment. This bleeding, usually of dark blood, keeps up and is accompanied by abdominal pain which usually comes in attacks which become more frequent. There is an increasing anæmia, and the patient gets worse instead of better.

The symptoms caused by an extra-uterine nidation of the ovum, however, are susceptible of analysis and it will help us in our conception of the difficulties of diagnosis to review them carefully.

In the diagnosis of ectopic pregnancy there are but three varieties of the condition to consider—an unruptured tubal pregnancy, a tubal abortion or rupture, and an hæmatocele. Each of these may give rise to doubt, depending upon the stage at which one sees the patient.

I. Irregular or Atypical Menstruation.—A varying period of amenorrhœa, from two to six weeks, followed by irregular bleeding together with localized pain in the pelvis, is stated to be suggestive of extra-uterine pregnancy. And yet a study of our cases, shows that only about 50 per cent. of our patients suffered from amenorrhœa. Many of them continued to spot continuously upon the appearance of the regular period. In several of our cases of tubal-rupture or abortion, a history of regular menstruation was obtained. A few months ago we had a young unmarried woman whose first sign of any abnormality was the rupture of her pregnant tube. Usually, however, there is a history of some irregularity.

The bleeding or spotting may be of any variety, from a few drops to fairly profuse hemorrhage occurring at intervals. There may have been no irregular bleeding at all or, perhaps a single showing of blood.

Those experienced in the diagnosis of pelvic conditions will recognize that the amenorrhœa and the irregular bleeding are by no means typical of extra-uterine pregnancy alone. A submucous fibroid or a small polyp can be responsible for bleeding of any of the types mentioned. A unilateral or a bilateral pyosalpinx may cause a belated menstruation with subsequent spotting for some weeks. A recent parametritis may bring about the same clinical picture, while an

incomplete abortion may only help to obscure the presumptive diagnosis of extra-uterine pregnancy. This is more likely if there is a small pelvic tumor to be felt on one or the other side.

II. Abdominal Pain.—While almost all patients with ectopic pregnancy complain of abdominal pain, the subjective character of the pain, varies exceedingly. It is described as dull or cutting, cramp-like or bearing down, and it may be constant or intermittent. It is unfortunate that the character of the pain is of no assistance to us in the accuracy of our diagnosis. It is impossible to tell from the subjective symptoms whether we are dealing with a tubal mole, an unruptured tubal pregnancy or a tubal abortion. But the sharp sudden pain which accompanies tubal rupture, together with the accompanying unmistakable signs of collapse, usually makes this condition, at least, clear. Yet we have seen the same clinical picture from a tubal abortion which took place while the patient was under observation.

And yet the same kind of pain may be called forth by acute inflammatory processes in the pelvis, and if these follow an abortion, for example, the differential diagnosis is exceedingly difficult. Complete collapse with pallor and with a pulse suggestive of internal hemorrhage may follow the rupture of a pyosalpinx; if there has been some irregularity of menstruation at the same time, the diagnosis of extra-uterine pregnancy may be justified.

In cases of retro-uterine hæmatocele, following rupture of, or abortion from a pregnant tube, the pain is usually due to pressure, and may be referred to the rectum or to the bladder. Difficulty at stool and frequent urination are due to the pelvis overfilled with blood.

Other Symptoms.—The concomitant symptoms of pregnancy are frequently present and frequently absent. In the first two months of an extra-uterine gestation, they may be quite prominent, but after the death of the fœtus following tubal rupture or abortion, the symptoms of pregnancy usually fade into the background. When they are present, they are of decided value in facilitating the diagnosis of the pelvic condition; their absence, however, does not militate against this diagnosis. Nausea and vomiting, frequent urination and a full feeling in the breasts, are often elicited in the history and some of the patients frankly state that they have considered themselves pregnant.

With the exception, however, of the mammary signs—including the presence of colostrum after the eighth week—the other signs of pregnancy may be mimicked by other pelvic conditions. Thus nausea and vomiting, particularly, however, the former, may accompany infectious and inflammatory conditions, as well as the twisting of the pedicle of an ovarian cyst. Frequent urination may be seen in vesical disorders, in some cases

of retro-displacement and in cases of exudate lying between the uterus and the bladder.

A sign which is favorable to the diagnosis of ectopic pregnancy, however, when taken into consideration with the other facts in a given case, is a rise of temperature varying from 99 to 102.5 F. I pointed this out in 1905, and the observation has since been repeatedly confirmed by other writers. It is, of course, necessary to exclude the rise of temperature due to other causes, such as an infected abortion or a beginning exudate. There are probably two causes for this febrile condition. One lies in the pouring out of blood into the abdominal cavity from which it is very slowly absorbed; the other is the very frequent occurrence of mild pelvic peritonitis about the tube and the extravasated blood. As every operator knows, it is quite usual to find freshly formed, filmy adhesions about the affected tube. In cases of hæmatocele, a thick capsule is eventually developed. The temperature found in cases of infected hæmatocele is, of course, much higher, and is not to be taken as an indication of the presence of an extra-uterine pregnancy *per se*.

The pulse may or may not be helpful in making a diagnosis. A very rapid and feeble pulse with great pallor and with the evidences of intra-abdominal hæmorrhage would naturally lead to the diagnosis of a ruptured tubal pregnancy. Yet within a few weeks, a patient was admitted to the service with a typical history of ectopic gestation and with every evidence of a profuse intra-abdominal hæmorrhage. She was immediately operated upon by Dr. Frank and a painstaking and thorough search of the entire abdomen failed to reveal the source of the blood which filled the entire abdominal cavity. Even the autopsy was unable to throw any light on the case. This instance was illuminating in showing us the impossibility of always making a correct diagnosis in abdominal conditions even when the history and the physical findings corresponded absolutely to a standard and recognized set of symptoms.

The other varieties of tubal pregnancy give no criteria in the pulse, although prolonged bleeding, even without rupture may eventually affect the pulse and with a low hæmoglobin count may thus throw the balance in favor of the diagnosis of extra-uterine pregnancy.

We have had little comfort from the diagnostic point of view from blood counts. The leucocyte counts have varied in our cases from 7,000 to 25,000, and in one case the differential count showed 91 per cent. of polymorphonuclear cells. Frequently the differential count has shown over 80 per cent. of polymorphonuclear cells, and in doubtful cases therefore, the blood count has been of no value. Even a low hæmoglobin count or a diminished number of red cells may well represent a prolonged inflammatory or infectious process.

Local Signs.—When it comes to the local physical examination, there are some elements that

are helpful in making a differential diagnosis. In cases of ectopic pregnancy, the cervix will be found softened, but not as soft as in an intra-uterine pregnancy of the same duration. The uterus, too, is softened, and is almost always enlarged. The Hegar sign is not present in these cases unless there is a simultaneous intra-uterine pregnancy.

Approaching the adnexa, we may here find material assistance in the diagnosis. In cases of unruptured tubal pregnancies, of tubal abortions and tubal hematomata, a characteristic local finding is the presence of a mass on one side or the other of the uterus. It may be high up near the top of the broad ligament, it may be between the layers of the broad ligament, or it may be found most easily in one of the lateral fornices.

Depending on the character of the lesion at the time of the examination, this mass may be elastic, or it may be boggy, so that it feels as though the finger might indent it; or if it is an accumulation of blood, it may feel like a cyst. But the presence of a mass of this general character on one or the other side, must always give rise to a suspicion of an extra-uterine pregnancy, especially if other convincing data are to be found in the history or by examination.

The pulsation of the uterine artery over the mass is not necessarily of pathognomonic significance. It is often present and frequently absent and may also be found in other conditions. But it is worth noting.

One thing can be said with certainty concerning the mass: it is always tender. The moment it comes between the examining hands the patient complains of pain. This may be set down as an invariable rule and is highly suggestive, when considered with other symptoms, of the presence of extra-uterine pregnancy.

But it is precisely in the interpretation of these physical findings that one's judgment is called into keenest play to differentiate the mass from other forms of adnexal disease. It is just here that the mistakes are most often made. I can not do better than to illustrate it with the report of a case seen last summer. A patient was admitted with a history of irregular menstruation, hæmoglobin of 30, temperature of 103 degrees F., and a pulse of 130. She said she had been ill only twenty-four hours. The uterus was slightly enlarged, she had a dark bloody discharge and a mass was felt on the left side near the uterus. A diagnosis of extra-uterine pregnancy with probable rupture was made and immediate operation was performed. A pyosalpinx was found and removed—contrary to our usual custom in acute cases. The patient died the same night. At the autopsy, the anterior wall of the uterus and the entire endometrium were found to be gangrenous and a streptococcus peritonitis was present. We subsequently learned that she was the victim of a criminal abortion.

When confronted with a ruptured tubal preg-

nancy, one frequently finds no mass, however. The ruptured tube has collapsed, having extruded all its contents into the abdominal cavity. But in these instances the picture is usually so complete that the local examination is only a perfunctory performance.

The difficulties of making an absolute diagnosis may be further illustrated by the operative finding in one case in which the patient had a tubal abortion on one side, a pyosalpinx on the other, and the uterus was the seat of multiple fibroids.

In cases of grave doubt where it seems essential to make a diagnosis before opening the abdomen a posterior vaginal incision may be made. If blood is present in the peritoneal cavity, of course the diagnosis is clear. But this procedure is not usually necessary, because in most doubtful cases the indication for opening the abdomen is present anyway. And there is always the danger of infection, there being no better culture medium than the free blood in the abdomen.

Stress has been laid by many writers upon the feeling of faintness, varying from a slight dizziness to complete syncope. Not infrequently one of the symptoms given by the patient is that of faintness. When a tubal abortion or rupture takes place, the patient usually faints, but she may also have the feeling of faintness during the few weeks in which she is pregnant in the tube, and this is a suggestive symptom when taken in connection with the other features of the case. But it must not be forgotten that the twisting of the pedicle of an ovarian cyst or the rupture of a pyosalpinx may also produce a sense of faintness.

I have carefully refrained from giving you any figures or statistics in this review of the facts, and have only summed up our experience in 138 cases. In doing so, I trust I have not made the diagnosis of extra-uterine pregnancy appear impossible, but the more of these cases I see, the more reluctant I have become to admit the ease of diagnosis in every instance, and the greater is my hesitation in pronouncing a doubtful case one of extra-uterine pregnancy.

Yet, despite my apparent pessimism, I believe a diagnosis of the various stages of extra-uterine pregnancy can usually be made in the majority of cases; but this involves a close study of the past and present history of the patient's reproductive life, and a keen and discriminating judgment of the physical findings. I have only tried to point out some of the difficulties which frequently obscure a clear vision of a given case.

For your discussion I have summarized my contentions as follows:

Patients who give a history of irregularity of menstruation, of subsequent spotting and of abdominal pain, must be regarded as "presumptive" or "suspicious" victims of extra-uterine

pregnancy; but one must use all his diagnostic resources to rule out abortions of an intra-uterine pregnancy and other pelvic conditions which may give rise to similar symptoms and which may be misleading.

Discussion.

DR. BERNARD COHEN said: Carefulness of examinations of all cases that come to our observation is the principal theme of this paper. The vaginal examination should be made with extreme care so as not to rupture mass in tube. Do not forget that the rectus muscle is a good indicator that something is wrong in the pelvis. If that is retracted and other symptoms are present it behooves to be on the watch to remove the mass and tube before the catastrophe of rupture occurs. Such scientific studies of a number of symptoms make it possible to reduce the number of failures of diagnosis of this accident.

DR. JOHN O. POLAK said: Menstruation charts are of great value in elucidating the anomaly of menstruation. There are two types. 1. The classical with symptoms of severe internal hemorrhage. 2. Those simulating, tubal disease, unruptured or terminated cases. The first is typical and the picture is strongly suggestive. The second presents great difficulty. In an experience of 183 cases with four deaths, the diagnosis was made in about 75 per cent. of cases. The vaginal discharge and the pelvic pain, sharp and intermittent with the patient at rest in bed, which takes place before rupture, as the tube is distended, are found almost constantly. Examination under anesthesia is dangerous. Immediate operation is only necessary in cases in which there is no reaction when the patient is placed in the Trendelburg posture with full doses of morphia, and in which the blood pressure is decreased below seventy and continues to fall.

Vaginal incision for diagnosis which is confirmatory subjects the woman to greater danger from sepsis.

DR. S. M. BRICKNER said: I fear that I have been misunderstood. I stated that in the last fifteen cases only had we erred in 50 per cent. in making the diagnosis. I certainly did not mean to convey the impression that in the 138 cases we had erred so frequently, for that would be far from correct. Again, as will be noted in my paper, I advise posterior vaginal section only for the purpose of making a diagnosis in doubtful cases; never for the completion of the operation and the removal of the diseased tube. I do not approve of this measure generally and would advocate it only where it seems essential to make a diagnosis on account of the patient's grave condition. But whenever this is done, the wound in the posterior fornix should be completely sutured.

THE SYMPTOMS AND DIAGNOSIS OF INVOLVEMENT OF THE HEART IN SYPHILIS (BASED ON A STUDY OF 200 CASES).*

By HARLOW BROOKS, M.D.,

and

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WE have elsewhere, together with others, called attention to the frequency and importance of involvement of the heart in lues. (*Medical Record*, February 24, 1912.)

The conclusions to which we have arrived from these and correlated studies may be very briefly summarized as follows:

The heart, including the conus arteriosus is more or less involved in syphilis in 88 per cent. of instances. In a large number of the fatal cases studied by us, death followed either as a direct or as a closely correlated result of these cardiac lesions.

In the present paper which must necessarily be very limited in length we have elected to consider only the symptomology and diagnosis of involvement of the heart in lues. We have chosen these two aspects of the question because in our opinion they present the questions of most difficulty in the elucidation of the subject under discussion. In order that we should not permit impressions and more or less biased opinions to warp our judgment, we have based our paper on a study and analysis of 200 cases which have been or are under our personal observation.

The pathological anatomy has been already fully presented (*New York Medical Record*, February 24, 1912) and the numerous recent studies of syphilitic infection as a whole sufficiently present the pathogenesis, for in the invasion of the heart, the only essential points of difference are such as are dependent on the special anatomy and physiology of this organ.

The question of treatment we expect to take up later after our experience has extended over a sufficient length of time so that more correct and lasting conclusions may be drawn; as it now stands treatment is essentially that which should be applied in any case of deep visceral syphilis, modified apparently only in certain minor particulars due to the crucial nature of the cardiac physiology and the character of its anatomical structure. With these, of course, are associated such circulatory measures as the individual condition demands.

In the selection of our series of 200 cases we have attempted to exclude all such as could in any just way be questioned as to the existence of syphilis. To assure ourselves on this point we have demanded a positive Wassermann re-

action, with benefit as a result of specific medication, or in the older cases which we studied before this test was applied as a matter of routine we have selected such instances only as gave a positive history or which presented unquestionable syphilitic stigmata. Concerning those cases in which autopsies were performed we have taken only such as presented at post-mortem unquestionable luetic lesions.

Our second requirement has been that in so far as clinical signs and symptoms are reliable and accurate, there should be no question as to the existence of definite cardiac lesions.

In the following out of these specifications we have consequently excluded many instances, in which the diagnosis of syphilis was probable, or that of true heart involvement likely and have strictly adhered to such instances only as fulfilled all the above requirements. In the furtherance of this idea and in order that we might make the study a definitely clinical one we have with our autopsy cases excluded all those in which an adequate history and status was not obtainable.

In order that our records might present as certainly as possible the occurrence of the complication, not among the hospital classes only but generally, we have selected our cases as follows:

Thirty-seven from private and consultation practice, all history or Wassermann positive, and all showing either certain stigmata of the infection or definite improvement under treatment. Thirty-eight cases from our own autopsy series, all presenting satisfactory clinical data for analysis and all showing at autopsy undeniable luetic lesions of the heart. Thirty-seven instances with autopsies from the pathological service of the City Hospital, all fulfilling the requirements noted above. For these special cases and for many courtesies received in regard to this and other studies, we are glad to acknowledge our obligation to Dr. John Larkin, pathologist to the City Hospital. Eighty-seven hospital cases with purely clinical records, all Wassermann positive and presenting definite physical signs both of syphilis and of cardiac disease.

In beginning the discussion of the symptomology of cardiac involvement in syphilis, perhaps the first and most natural question to ask is, How soon do symptoms appear?

Anatomical study has shown that grave or even fatal involvement of the heart tissue may take place in the early stages of the secondary period.

It is natural that but few cases of early syphilis should appear in an internal service, hence from the greatest number of our cases little in correct answer of this important question can be derived, but through the generosity of Dr. J. A. Fordyce, we have been permitted the courtesy of his service where we have been enabled to observe and study numerous instances of early syphilis, among which we have found relatively

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

frequent instances of cardiac disease, which, since they cleared up under specific and no other treatment we feel justified in assuming in the light of our anatomical experience to have been due to luetic lesions.

The following series of cases illustrate vividly the occurrence of cardiac involvement in acute cases of syphilis:

CASE 7.—Male, 21 years old. Secondary stage of infection. Complained of precordial pain. Some dyspnoea on exertion, pulse after exercise 132 irregular. Diastolic murmur at apex and at base. Complete cure under treatment.

CASE 8.—Male, 17 years old. Secondary stage of infection. Complains of precordial pains. Systolic murmur at apex and at base with irregularity of action on exercise. Recovery under treatment.

CASE 15.—Male, 21 years of age. Secondary stage of infection. No complaint. Systolic murmur at the apex on exercise. Recovery under treatment.

CASE 31.—Male 19 years of age. Onset of cardiac symptoms one month after infection. Systolic murmur at base and apex with irregularity on exertion. Complete recovery under treatment.

CASE 49.—Secondary stage, six months after infection. Systolic murmur at apex and base on exertion. Complete recovery under treatment.

CASE 56.—Male, age 22. Secondary stage, still presenting a typical secondary rash. Complains of dyspnoea on exertion. Shows a mitral systolic murmur transmitted to the axilla. He has a weak pulse and a definite myocarditis. Complete recovery under treatment.

CASE 57.—Thirty-one years of age. The third month after infection, a mitral systolic murmur, pulse 120, very irregular. Complete recovery.

CASE 58.—Male, 27 years of age. This case presented a typical secondary rash. Symptoms of dyspnoea on exertion. Œdema, a mitral systolic, irregularity and weakness. Complete recovery under treatment.

CASE 165.—Female, 38 years of age. Presenting a secondary rash of syphilis. She complained of no symptoms referable to the heart but she was in the dermatological ward of the City Hospital, under treatment for syphilis. Death took place unexpectedly while the patient was at stool. At autopsy acute syphilitic myocarditis was demonstrated as the cause of death.

CASE 199.—Male, 34 years of age. In secondary stage of the disease. Complains of shortness of breath, sudden attacks of precordial pain. Chills, fever, leucocytosis, and the physical signs of acute pericarditis. Complete disappearance of signs and symptoms after two doses of neo-salvarsan and within three days. These symptoms appeared within four weeks after the initial lesion which in this case was on the nose.

We then feel justified in the statement that

symptoms of heart involvement in early syphilis are not infrequent, and we would account for the fact that they are not more commonly recorded by the axiomatic statement that they do not persist long, since during the secondary more than in any other period of syphilis, correct treatment is vigorously pushed, the symptoms thus quickly disappear for during this period largely because of the obvious character of the signs, that is, those of the skin and mucous membrane, the patient is not only willing but anxious to submit himself to observation and to religiously carry out the prescribed treatment.

The most frequent sign referable to the circulatory system seen in the secondary stages of the disease is a soft systolic apical murmur. In some instances this assumes the character of that of a typical organic mitral incompetence and is transmitted to the axilla and to the angle of the scapula. In more frequent cases this is absent until the patient is exercised as by "double time" for sixty seconds after which the murmur appears, but looses rapidly in its intensity toward the axilla. We have come to believe that this murmur is usually due, accompanied as it is by a certain degree of dyspnoea, by pain and occasionally by slight cyanosis, to a myocardial invasion. Our assumption in this regard would appear to have some weight in anatomical fact inasmuch as in an early secondary case (previously reported) in which death took place from the perforation of the conus from a syphilitic ulcer a very wide spread true syphilitic myocarditis was demonstrated in the heart muscle. Although complete indications of a myocarditis may not be present, we are of the opinion that it is extremely common in these cases. One of our recent internes has reported privately to us a case in which during the secondary stage of lues symptoms of acute decompensation and finally death took place. At autopsy very extensive syphilitic myocarditis was demonstrated.

In the cases of acute (*i. e.*, secondary syphilis), which we have studied, we have as yet observed no examples of acute aortic endocarditis although in several aortic murmurs were found, but inasmuch as they failed to fully clear up under luetic medication, we do not consider it likely that they were truly luetic in nature.

In one of the Fordyce cases a very marked and aggressive pericarditis evidently of the syphilitic variety appeared (case No. 199), which cleared up absolutely in three days under two injections of neo-salvarsan. A similar example has also developed in a late case of lues now in our ward. As we have pointed out in our article on the pathological anatomy of this condition, pericardial changes are very frequent in the disease but in so far as we have been able to determine these are the only instances recorded in which an active pericarditis of luetic nature has been clinically demonstrated.

In most cases, however, symptoms and signs of diseases of the heart do not develop until late in the progress of the disease or at least they do not appear to be recognized as such until then, although as we have already shown, anatomically they undoubtedly originate early in the infection, and due to the wonderful recuperative possibilities of the heart muscle they may not become manifest until late in the disease, or they may remain fully compensated, therefore undiscovered until approaching old age or decompensation causes their discovery.

In the analysis of our cases we find it extremely difficult to determine when cardiac symptoms first appear in the average case, because in so many instances patients either voluntarily or through ignorance deny the existence of the infection and the time of its inoculation.

In regard to sex 33 cases occurred in females and 167 in men. We do not believe that in regard to number, these relative figures differ materially from the relative admission percentage of women to men in our various hospital services. One factor in this regard does, however, appear to be of some interest and importance. Among our women the average age was 38.1 years, whereas among the men the average age was 44 $\frac{3}{4}$ years. There does appear to be a more marked tendency toward rapid progress of the disease in women than in men, and thus an apparent greater relative tendency toward early involvement of the heart in this sex. This is probably due to the fact that women are more likely to deny the infection and to neglect treatment until the signs of the disease become of a sufficiently disfiguring nature to demand it, they are also more likely to be incompletely treated for the same social reasons.

Marriage was admitted in 79 cases and in 53 post infection fertility was present, that is, the birth of one or more apparently healthy children took place. It is evident, since the modern studies of syphilis, that we must modify materially our older ideas that syphilitic unions are customarily sterile ones.

Although it is undoubted that abortion and miscarriage is more frequent in such instances, than among the entirely healthy we can no longer assume that extragenital syphilis is in itself a cause of sterility, at least that in which cardiac complications play an important role. Close questioning along these lines, particularly in private and consultation practice has convinced us that healthy fertility is frequent in those instances in which the treatment has been fairly vigorous during the secondary stage, even though as in these instances of cardiac involvement the disease has not remained entirely dormant.

Although it has been apparently assumed in the past that cardiac involvement in lues was unusual, perhaps because as has been stated, the patient have not made complaints of circulatory symptoms, in our series symptoms of cardio-vas-

cular involvement were complained of in 164 cases. In the remaining 36 cases either the lesion caused unexpected death or was found incidentally on physical examination or at the autopsy.

The most frequent symptom of this complication of syphilis is found to be dyspœna. In determining the occurrence of this symptom, we have accepted as positive only such cases as have either voluntarily complained of this symptom or who on questioning admitted it, but without the clause of more than ordinary exercise.

For a positive finding in regard to this symptom we have demanded its appearance without more than the ordinary physical effort to which the patient was accustomed. It must be apparent then that many other instances would have shown this symptom had the usual physical tests, such as "double time," the lifting of weights, etc., been tried out.

The degree of the dyspœna has varied greatly from that of a slight degree seen for example in the early secondaries to that explained by a frank and active myocarditis or perhaps by cardiac aneurism.

Irregularity of action has been observed in a high percentage of cases, but no routine study of the types of irregularity has been made because of their great diversity. Polygraphic studies have been made in a good many instances, and the electrocardiograph has been also utilized, though to less extent and only on selected cases. In so far as this particular branch of the study is concerned, however, most satisfactory results have been secured by the use of the X-ray screen.

Irregularity of action appears very early in the complication and it would seem to us that a more complete study of these early cases might lead to some valuable conclusions in regard to the first lesions present in the heart, but in the later cases it seems that irregularity of action is unimportant as indicative of the type or progress of the disease.

But one instance of heart block has been included in this series, though five cases apparently caused by syphilis have been studied by us. Since in but the single instance cited, relief or any marked improvement in the symptom followed treatment, we have not considered it wise to include these cases in this clinical study.

Pain in the precordium was complained of in 119 cases. As will be noted from a glance at the early cases of cardiac involvement, this sign very often appears in the very early periods, indeed, we have come to the belief that it is the very earliest clinical evidence of syphilitic invasion of the myocardium. It is also one of the most persistent symptoms and is present in the later stages of old cases as well as in the recent and active manifestations. In the early cases, judging from the anatomical changes, it appears to be due to direct inflammatory invasion of the heart muscle, in the tertiary and quaternary stages it would seem to be more commonly

caused by varying degrees of cardiac dilation or possibly in some examples by the myocardial fibrosis or by gumma of the heart.

In most cases pain has been quite consistently localized in the region of the sternum and the heart apex, but occasionally it has been reflected into the back. In nine instances the pain was definitely localized in the region of the angle of the left scapula, and since improvement took place in this symptom corresponding to the amelioration of the other cardiac signs and symptoms, it seems to us fair to assume that this pain was due to the heart lesions and not to some inter-current or incidental state.

Paroxysmal pain, reflected down the left arm and into the pectoral region, that is true angina pectoris, was found in eighteen instances. In most of these the pain was associated with the customary symptoms of terror, ashy countenance and profound prostration. While this would appear to be a very high percentage of cases of true angina pectoris to be collected in a series of but 200 heart cases, it is smaller than is indicated by our previous anatomical studies of the coronary artery involvement in lues in which it was shown that involvement of these trunks to a relatively greater grade than that of the general vessels was shown in 70 per cent. of instances.

If we assume then that the syndrome of angina is caused, as seems most likely by coronary disease, we must also admit that the clinical picture appears then in but a relatively limited number of instances of coronary disease or that some particular type or degree of involvement is necessary for the production of angina pectoris.

Precordial tenderness was found in 52 patients. This was notably present in active cases and in some instances was so marked that it became difficult because of the exquisite tenderness to accurately outline the cardiac border by percussion. Deep percussion or heavy pressure invariably made this symptom more prominent, hence we are inclined to assume that the sign is due to direct cardiac disease and is not an example of the head zones of tenderness.

Cyanosis was found in 104 instances. It varied in degree from the most minor grades in which it appeared only after moderate exertion and was limited to the distal portions of the body, to those cases in which a general cyanosis was present. It was always, of course, most marked in the peripheral portions of the body, that is, in the face, hands and feet. In those cases associated with true angina or obvious cardiac dilation (including several instances of cardiac aneurism, demonstrated post-mortem) the cyanosis took on a peculiar greyish, ashen hue of very characteristic type.

Clubbed extremities, fingers and toes were observed in no cases. This would apparently suggest that the onset of cardiac deficiency was rapid rather than slow and that either death took place suddenly, so that sufficient time for such

changes did not intervene or compensation quickly reasserted itself.

The symptom of insomnia was a prominent one in fifty instances. It is noteworthy that this sign was most frequently found in patients of the higher intellectual class and that it appeared in the nurses' notes, rather than in the complaints of the patient in the hospital cases. It is a not uncommon symptom and is apparently due to circulatory deficiencies in the brain in the greater number of cases, though also in some to fear of angina or to other psychic causes. The manner in which this symptom has improved after specific medication has been striking to us and were it not that improvement has also been almost always noted following circulatory measures, independent of those directed toward the etiologic infection, it might be quite justly assumed that the relief was not infrequently due to betterment of cerebral lues under the proper medication; this factor cannot, of course, be entirely eliminated in any case.

The criticism may be entirely justly made that into our list of cases instances of syphilitic aortitis with or without aneurism may have entered. In a measure this assumption is corroborated by the fact that eight of our post-mortem and two of our clinical cases did show aortic aneurism. On the other hand, we have attempted to exclude from our series, in so far as possible, those instances, by no means few in number, in which aortitis or aortic aneurism apparently played an important role in the production of signs or symptoms. We believe that an analysis of the chief symptoms outlined above will convince the reader that few instances characteristically of these changes have crept into our series. This subject has been recently so carefully restudied by Longcope (*Arch. Int. Med.* V. II, p. 15, 1913) that it does not at this time demand elaboration from us. We frankly admit, however, that not only some of the symptoms studied by us, but some of the benefits credited in the treatment of these cases may be due to association with this important lesion.

Actual decompensation, demanding immediate circulatory management, was manifested in eighty-nine of our cases. In most of these, excepting those which promptly died, simple rest in bed sufficed to relieve, but on the whole, throughout our study of this group of cases we have had impressed upon us very strongly the fact that the cases of heart disease occurring in the course of syphilis do not respond to circulatory treatment as quickly or as permanently as do simple instances. The most beneficial effects follow, of course, appropriate hygiene rest and circulatory measures with the prompt exhibition of specific treatment. Sudden decompensation appears to us to be initially more frequent in this group than in the usual types of heart disease and barring the effects gained from specific medication often manifested, even in very ad-

vanced and profound cases, we are struck with the higher mortality in the luetic cases and the worse prognosis which must, therefore, be awarded to them.

As to the signs of endocarditis we have attempted to make it clear that it is our opinion that true endocarditis plays an unimportant and infrequent role in the cases occurring during the secondary periods of the disease. Most of the murmurs developing in such instances are, we believe, due to elemental muscle deficiencies, nonetheless we must admit that there is no real reason why some, at least, of these instances may not have been true endocardial lesions with the rapid resorption which we well know may follow proper medication. Hence, the rapidity with which these cases have improved is no well-based argument against their being endocardial. We call attention, however, to the fact that in none of the active cases have infarction, thrombosis, embolism, purpura or other expected complications of a true endocarditis developed.

The tertiary cases stand out in quite marked contrast in this respect, for out of the total number forty-two apparently showed a purely aortic endocarditis. Most of these presented a systolic murmur transmitted into the trunks of the neck and only such instances as were verified at autopsy or which seemed clinically incontestable were included in this list. Exclusion of aneurismal cases was especially attempted to be as nearly absolute as possible. No attempt was made to differentiate between single and double aortic lesions, because both in this series and in others of simple aortic disease we have found our clinical diagnosis so very frequently out of accord with post-mortem finding, that we judge it most wise to consider these cases as one of aortic disease.

Pure mitral endocarditis was recognized in but seven instances, but, as we have before mentioned, in so far as we may be permitted to judge from purely clinical signs, mitral involvement is possibly not so very infrequent in the acute instances, though here also we believe that most of the mitral murmurs, which are chiefly systolic in time are due to muscle relaxation following true syphilitic myocarditis. There are, however, cases even in the acute stage in which it seems impossible to deny the probability of a true mitral endocarditis.

Mixed mitral and aortic lesions are in these clinical studies, as in our previously published anatomical statistics, by all means most frequent. They were found in a total of sixty-seven instances.

As we have already intimated, in our opinion, endocarditis does not play a weighty symptomatic role in these cases of cardiac involvement in lues, except, when particularly in the late stages, due to the mechanical defects they become of importance. To illustrate this fact, we wish to point out that in no instance have we observed

a fatal or even serious embolism to take place in the acute stages, it is only when the endocardial lesions becomes important through its association with myocardial changes that it becomes of very great clinical import. Exceptional cases to the contrary do, however, doubtless exist.

Throughout our entire study, both anatomical and clinical, we have been deeply impressed with and have constantly referred to the dominance of muscle lesions in this complication. We are thus quite prepared to find that in 180 cases, from the total series of 200, the dominant lesion in so far as functional defect was concerned, determined as carefully as possible by anatomical study or by clinical methods was a muscle disease. It is out of the range of this particular paper to discuss the varieties of these lesions, for this has been already previously discussed by one of us, but it is perhaps necessary for us to say that in our opinion, based on our own individual study, the muscle changes are in at least most instances consequent upon primary changes in or about the coronary trunks.

We have recently attempted blood pressure studies in these instances, especially in those where the degree or presence of heart involvement was in question, expecting to thereby, perhaps, ascertain early whether the heart muscle was becoming incompetent or not. These studies, while not as yet extensive do not apparently promise much because so many other factors enter also here, such for example as renal involvement. It is our impression, that taken purely as a cardiac condition the blood pressure is rather lower in luetic cases than in those like lesions of the heart in other types of disease.

In conclusion then in regard to the symptomology of cardiac involvement in syphilis, we wish to particularly point out that the symptomology is essentially that of muscle disease. That this is the correct assumption would appear to be indicated by the fact that treatment based on this assumption administered in any stage of the disease gives average results of a highly satisfactory character.

In the diagnosis of heart disease occurring in syphilis, it is at once apparent that the question must resolve itself into two heads, the diagnosis of the syphilis and that of the cardiac condition. Although the last may often if not usually present the greatest difficulties, it is by all odds the first mentioned which is most important.

Since most of these instances occur in cases in which the florid and striking manifestations of lues have disappeared, perhaps through treatment incompletely administered, perhaps through the automatic cure or adjustment of time, the diagnosis of syphilis is by no means an easy or obvious matter. In the past we were largely dependent in this respect on the history of a luetic infection. We have all recognized the difficulties in the way of accuracy in this respect. In the first place many patients have failed

to observe the apparently minor and insignificant lesions which may usher in the primary and secondary stages of the disease, secondly a very considerable proportion of patients wilfully deny the infection, though being perfectly well aware that they have suffered from it.

In this present series the percentage of positive histories is probably considerably higher than any group of patients selected consecutively because as before stated we have attempted in the collection of these cases to accept only such as are beyond question as regards the existence of luetic disease. None the less, a positive history was secured in but seventy-seven instances out of the 200. This group of seventy-seven cases includes, in addition to those in which the infection was frankly admitted, those in which careful investigation of the history secured an account of a fairly definite primary sore or of certain secondary manifestations, as mucus patches or skin rash. Accepting these cases, we have still an error of 61.5 per cent. as against one of 70 per cent. which was found present in a previous series of studies by us, in which the cases were taken consecutively, but with the diagnosis confirmed in each instance by anatomical investigation.

It must, therefore, appear that in instances of negative history something more definite than this slender reed must be relied upon and syphilis should never be excluded on history only. After history, in the past, we have been largely dependent for diagnosis upon the factor of associated lesions of a suspicious character, especially in tertiary and quaternary cases. The extent to which we internists have been dependent upon this factor is plainly manifested in the discussion of differential diagnosis of almost all sub-acute or chronic deep visceral disease.

The value of this apparently crude method in internal syphilis is indicated vividly by the fact that in 111 of our series associated lesions of a probable luetic character were found, aside, of course, from the existence of cardiac lesions which from their past reported infrequency we have not felt as yet was sufficiently recognized to be looked upon as a diagnostic indication. In forty instances (twenty per cent.) these associated lesions were of the central nervous systems. In but ten cases, or five per cent., were they skin or mucous membrane signs. The internist has, we believe, been too apt to consider dermal and mucous membrane changes as necessary in the supposition diagnosis of lues. One much neglected, because hitherto considered very rare, lesion of an associated character is a luetic arthritis, which Frauenthal has shown to be a very frequent manifestation of late syphilis.

In the past, the therapeutic test has been very extensively employed; note, for example, the discussion of the differential diagnosis of tumors of the brain, of the liver, etc., in which most cases this therapeutic test is recommended before

the more radical operative measures are justified. This test has been but infrequently recommended in the differential diagnosis of heart lesions of possible luetic origin, we have, as yet, been unable to find a single monograph or text book which advocates this perfectly simple and perfectly proper test. The result has undoubtedly been unfortunate, for judging from our experience and that of others, notably that of Collins and Sachs and of Longcope, even in very late and longstanding cases of heart or aortic invasion, startling results follow specific medication, particularly the newer methods now almost universally in vogue.

Our opinion of the value of this method of identification or diagnosis in suspected cases of heart invasion in syphilis is indicated by the group of acute cases which introduce this paper. In ten of these eleven cases, though all were Wassermann positive, we should not have felt justified in the absolute diagnosis of syphilitic involvement of the heart had not the signs of heart disease promptly and permanently (apparently) disappeared under antisyphilitic and no other treatment.

We are therefore strongly in favor of the adoption of this means of identification in suspected instances of cardiac involvement in this infection even when we do have the great assistance afforded by a positive or negative Wassermann reaction. A more universal adoption of this apparently unscientific method of differential diagnosis will doubtless result in the absolute cure of many cases of heart disease which might otherwise go on to a fatal or chronic invalid issue. The method is of especial value in those localities where expert Wassermann technic is not available.

We cannot endorse too highly the utilization of the Wassermann reaction in the identification of syphilis as an etiological factor in heart disease. We admit willingly that the Wassermann reaction is a fallible one both in a positive and negative sense but it gives us a clue or at least a scientific working basis founded on a correct theory in a large group of cases which might otherwise escape detection. Certainly no one experienced in expert results with this test can claim for it as we do for the historical test, 61.5 per cent. or more of error, nor that of the associated lesions test within these selected cases but 55.5 per cent. of accuracy.

We have found the most accurate technic to be practically that of the old Wassermann method; most of the newer modifications have proven too sensitive in our experience. It, of course, goes without saying that expert results only are valuable. It is our impression, founded on a quite wide experience with late cases of cardio-vascular involvement in lues that the Wassermann reaction is rarely absent in true cases when the reaction is properly performed, there is but one other comparable test, it is the therapeutic one.

From our observations it also appears that this test is somewhat more frequently positive in cases of cardio-vascular involvement than in those of late lues in which other systems are chiefly invaded. This is of course entirely as should be expected because with progressive disease of the channels through which the body fluids course, it is entirely to be expected that those fluids in particular should show the reactions indicative of such involvement.

One curious phenomenon in connection with the Wassermann reaction has been observed by us in two instances. In these cases the history and associated lesions were confirmatory of a diagnosis of luetic cardiac disease. They had been, if at all but very sporadically treated. A negative Wassermann was constantly given in both. When notwithstanding the negative serum reaction a vigorous therapeutic test with salvarsan and mercury was applied, remarkable improvement in the cardiac condition without other treatment ensued. The most surprising result was, however, that in both these instances a subsequent test by the same expert technicians gave in one a triple plus Wassermann and in the other a double plus, even though both cases were still under active treatment. Similar instances have been cited to us in private communications by other workers (Prof. J. A. Fordyce, Prof. A. C. Mandel).

Although not strictly germane to the subject matter of this study we wish to state that we do not view the Wassermann and its disappearance as of great value in a prognostic way. In several instances in which the most vigorous possible treatment amounting to as much as 20 g. of salvarsan with mercury thrown in in certain cases, this test has still remained positive although every clinical evidence of the disease had entirely disappeared. It is our opinion that subsequent study will show that in many if not most cases of late lues, no matter how well or frequently treated, a positive Wassermann will eventually persist or reappear. We hasten to say however, that we do not mean to infer therefore that the disease in these persons is uncured, on the contrary we are of the opinion that this evidence of immunity against this specific infection may remain as indelibly as the immunity acquired by an attack of yellow fever.

The existence of lues having been determined as above it remains to demonstrate the presence of actual heart deficiencies. It is unnecessary in this place to go deeply into the discussion of so trite a subject. The identification of frank endocardial lesions or of myocardial defects when decompensation has manifested itself is easy, as easy as it is important that the imminence of such changes should be detected before they appear. We have as yet nothing new to offer in this respect except to again call attention in relation to the involvement in lues to the dominance of myocardial disease, and to its rapidly progressive character. All recognize the difficulty with which

such defects are recognized and the autopsy records of every hospital attest to the fact. In so far as we can determine this difficulty is no more evident in relation to the recognition of syphilitic processes of the heart muscle than in those of rheumatic, toxic or idiopathic nature. In syphilis an additional safeguard exists in the fact previously stated by one of us that it is but just to the patient to assume that the heart is or will be involved in syphilis, unless anti-syphilitic treatment of the most vigorous type has been instituted and pushed on to cure.

In this relation, however, we wish to call attention to the probably very frequent association of other types of cardiac lesions together with those of syphilis. There is of course absolutely no reason why a patient who has suffered from an endocarditis of rheumatic or septic origin may not afterward become infected with syphilis, and there is all the more reason why such a person would suffer from cardiac syphilitic lesions when he does become infected. Of course it is not to be expected that luetic treatment will remove the rheumatic focus for example, but the great point is that it will cure in many instances the more important luetic process with its definite tendency toward progression and myocardial degeneration.

CONCLUSIONS.

We may summarize the conclusions which we have reached in regard to this subject as follows:

1. Symptoms of cardiac involvement are manifested in a large percentage of cases of syphilis.
2. The symptoms of luetic heart disease may appear very early in the secondary stage, though most frequently not discovered until the tertiary period, largely because the patient attributes all his symptoms to the general disease and special visceral signs are neglected.
3. The signs are those of an essential cardiac lesion, but differ from those idiopathic or simple cardiac cases, in that there is here a greater tendency toward the involvement of the heart muscle and the coronary arteries.
4. Precordial pain is probably the most constant symptom, and one of the earliest. In a high percentage of cases this takes on a definitely anginal character.
5. Dyspnoea, cyanosis and other usual signs of heart incompetence are customarily present long before true incompetence is evident.
6. In so far as the endocardium is concerned, the greatest number of cases show combined mitral and aortic lesions, after these, those of the aortic ring predominate.
7. Recognition depends primarily on the diagnosis of lues and on the association of a cardiac defect, either of definite or suppositious nature.
8. The recognition of the nature of the general infection depends on, named in the order of their relative value, the Wassermann reaction, the presence of associated lesions of probable syphil-

itic nature and finally on the history of this infection or of symptoms or signs indicative of it.

9. The most conclusive and important diagnostic test is the therapeutic one.

10. Recognition of the cardiac complication as probably luetic is best accomplished by the primary elimination, where possible, of other probable etiological causes; by the early manifest tendency in luetic instances toward involvement of the myocardium and arteries, by associated early arterial changes and finally by improvement or disappearance of the cardiac symptoms and signs under specific treatment.

In concluding this presentation of the symptomatology and diagnosis of cardiac involvement in syphilis we wish to explain the fact that we have made so few references to literature, because most of that bearing on this subject is now out of date, because of our present utterly new understanding of this infection. This has naturally evolved from the discoveries of Hoffmann and Schaudin, of Wassermann and the final proof and compliance with Koch's laws by Noguchi. With so limited a space at our disposal it has, therefore, seemed best to us to present in the most direct possible way our own studies on this subject, together with such data as we hope establish the validity of our conclusions.

We are particularly indebted to our colleagues at the City Hospital for their generosity in sending us cases of this disease, for their criticism and assistance, and we especially take pleasure in acknowledging our deep obligations in these respects to Drs. Potter and Larkin who have given us frequent cases for study and to Dr. J. A. Fordyce who has in addition assisted us with his valuable advice and counsel. We also acknowledge our indebtedness to the gentlemen of the intern staff who have done much laborious detail work in the collection and study of the cases which make up this series.

THE ABBOTT TREATMENT OF SCOLIOSIS.*

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SCOLIOSIS is of two main types, functional and fixed. In the first the spine is flexible, and can be placed in the normal or over-corrected position by a voluntary muscular action of the patient. It is cured by the development of musculature sufficient to maintain the normal poise. With this type we shall not deal except inasmuch as it is the ideal sought in the handling of the second type—the fixed scoliosis. Here we have a spine which cannot be made to take a normal position by muscular action. Be-

yond the mildest degrees, the power necessary to place it in the normal position may vary from a comparatively small amount of properly applied pressure to an amount of force the patient cannot endure.

In the fixed cases there is, besides the lateral curve, rotation of the bodies of the vertebra which are involved toward the convexity of the curve. It is readily understood that this means ligamentous and bony changes in the region in question. These changes are not due to inflammatory involvement. These cases are not to be confused with the kyphosis and its frequently associated scoliosis of Pott's disease of the spine.

The treatment of fixed lateral curvature of the spine has been, and is, one of the greatest problems of orthopedic surgery. In the first place, all must appreciate that any management of a condition, the success of which necessitates ligamentous and bony changes, must take time. No matter where one seeks in literature, he is impressed with the years of treatment necessary to correct this condition. It has required two, three—even five years to approximately correct the deformity, and then a year or two to develop the musculature necessary to maintain the correction, for unless this musculature is developed, the case will relapse to its former condition or worse. On this all are agreed.

We believe that until Abbott came forward with his ideas, no one handling fixed lateral curvature has felt that he really corrected the deformity.

All have agreed that the successful treatment demands at least two stages: First, the deformity must be corrected. That is, the spine must be made capable of being placed in an over-corrected position, and held so until bony changes can occur. This is in line with the well established laws for the successful treatment of deformities. Second, that muscular development, to maintain the normal position, must be obtained. Given the first result, the second is comparatively easy. The methods of gaining the first goal have been various, but all have these points in common. They depend upon pressure applied at the points of deformity, and whatever is gained from the primary application of force is maintained by jackets or braces which continue the corrective pressure. All act with the patient in a position of extension because of the obvious need to straighten the spine. Lastly, none are completely efficient.

In 1912 E. G. Abbott announced that he had developed a method by which the deformity of fixed lateral curvature could be over-corrected rapidly and safely. The keystone of his method, gained from experimental work on the cadaver and the living subject, is the application of the correcting forces with the patient in a flexed position. In flexion, the spinal articular processes are unlocked and the position of the vertebrae can be more readily changed; whereas,

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

in extension the articular processes are locked and the vertebræ are held more rigidly. Fixed lateral curvature is an exaggeration of a position of flexion and side-bending, the early stages of which all of us can and do assume every day. Applying the same reasoning which we daily employ in the reduction of dislocations, it is readily seen that the deformity can best be corrected by forcing its parts to re-travel the path of its development. Having placed the patient in a flexed position, for which an anæsthetic is not necessary or desirable, the correcting forces are applied to the points on which they are to act by means of traction bandages. The high shoulder is pulled downward and backward, the low shoulder upward and forward; the high hip downward and backward, the low hip upward and forward. The convex deformity of the chest is pulled laterally toward the concave side, and at the same time backwards, increasing flexion. The thighs are flexed on the abdomen to increase the flexion of the spine. The hollowed-out concave side of the chest is filled with thick felt pads. Over all a heavy plaster jacket is applied. In this jacket a large window is cut over the concave side of the chest, and small windows are cut in the front and opposite side of the jacket through which felt pads can be applied, making pressure backwards on the anterior deformity of the chest and laterally against the convexity of the deformed chest. In other words, the idea is to force by a combination of pressure and chest movements the deformed vertebræ and ribs to re-travel the path of development of the deformity. The huge window opposite the concave side of the chest allows freedom for this change. In working out the latter part of this method, Abbott took long-established methods and modified them as it seemed necessary.

Shortly after his announcement appeared, a reporter for a great New York newspaper, masquerading as a physician, visited Portland, and as a result of this visit Dr. Abbott and his work were featured in a double page of a Sunday edition. The interested part of the medical profession was divided as to Abbott's work. All were skeptical because the history of medicine has bred an attitude of skepticism whenever a cure for a long studied and baffling condition is suddenly heralded. The skeptics in the profession were divided into two general classes: First, those who did not go near Portland, and second, those few who went immediately to visit Abbott to see just what he was doing. We believe we are safe in saying that most of this latter class came home impressed, instructed and full of hope for the future. We think that all were amazed at the clearness and simplicity of the logic of Abbott's great idea, namely, flexion. As is nearly always the case, the wonder was how this principle of treatment had escaped discovery so long. We think all felt that they had heard and watched an earnest, honest man who

had his message, who was delivering it and anxious to do all in his power to have every one grasp it.

Briefly we have tried to give some idea of the history and the principles involved in the development of Dr. Abbott's ideas in the treatment of fixed scoliosis. In a condition so slow in its development occurring in such resistant tissues, it must be readily seen that the application of any corrective method requires time, thought, study and constant supervision. Various complications may arise. In the main they are the complications which may occur with the application of any plaster jacket. The danger is somewhat increased by the fact that in these jackets there is a continuous pressure action by means of felt pads inserted at frequent intervals. As the deformity is corrected the jackets have to be changed in order to allow space for more correction. When the deformity has been over-corrected, the treatment is half completed. Every one knows that if you over-correct a club foot and then leave it alone, it is bound to relapse. So it is with these backs. Having over-corrected the deformity, it is absolutely necessary that the tissues be held in the over-corrected position until bony and ligamentous changes take place, and that at the same time the musculature of the trunk must be developed so as to maintain the balance of the spine. In other words, when the deformity has been over-corrected, we have obtained a functional lateral curvature which can be changed at will. Its management will be more difficult than that of an ordinary functional curvature because of the many different factors entering into the problem. In the main the corrected position must be supported by removable jackets until such time as the carefully supervised daily gymnastic work enables them to be laid aside.

We have made lantern slides from some of our cases. We have thirteen cases under treatment and have taken them just as they came. In several we have felt that the prognosis was probably hopeless, but in all of them we have been surprised at the progress made. All cases go to the hospital for a stay of three or four days, when their jackets are changed. The intervals they spend in their homes or boarding places. It would be better if they could stay in the hospital, but we lack hospital facilities.

The rapidity of change is dependent on many factors. The patients have to be carefully watched for pressure sores, and with all of the care which we are able to employ, they occasionally develop. In no case have they been severe. One case developed an abscess on the breast from the combination of pressure and infection of the nipple. The patient recovered promptly after incision, and is now in a removable celluloid jacket, taking her daily gymnasium work. Patients are especially uncomfortable for the first two or three days, though none have required morphia.

All are up and about within 48 hours after the application of the jacket. After the first two or three weeks, they seem to sleep and eat well. When they have overcome their fear of being seen by people, and get about in the open air, they all begin to gain in weight. Several cases have gained as much as twenty pounds during the time of treatment in plaster jackets. All find that judicious occupation helps pass the time, and all are happy over the outlook for their cure.

Discussion.

DR. ROLAND MEISENBACH said: We are to-day treating patients with lateral curvature of the spine to whom two years ago we could offer no relief as regards straightening the spine. I refer to the fixed types, with rotation of the ribs and displacement of the viscera both of the chest and the abdomen. All we could heretofore promise them was to prevent them from growing worse or to hold them where they were. Forcible correction, exercises and other means did not seem to bring about the desired results, no matter how protracted the treatment. It was discouraging, not only to the patients, but also to the orthopedist at that time. Much apparatus has been devised for the correction of this type of spinal curvature, and much literature has been written upon the subject. At that time we found that after treating the patient by all modern methods, the X-ray of the patient still showed spinal curve, with rotation of the vertebræ and distortion of the ribs.

Abbott has brought forward a new method, with which you are all familiar. Since he has pointed out that flexion, and not extension, is the true method of procedure, our results are different indeed than they were formerly. In fact, the same patients who had given up hope by other methods are now able to be straightened, not only as regards the appearance, but anatomically as well. That is, the spine actually straightened, the vertebræ in the thorax and lumbar regions rotated and the spine not only corrected, but over-corrected, with rotation of the distorted ribs.

When this method was first made public, many of us were sceptical, but after a thorough trial, I, for one, am convinced of the good that can be done and the rapidity with which the spine can be straightened after a skillful use of forcible correction.

I am so frequently asked whether there is much pain connected with the procedure, I must frankly say that many of my patients, even of the severer types, have suffered comparatively little or no pain. I think this has been due to the technique and the careful method of procedure. For instance, I make it a rule never to remove a corrective jacket suddenly, nor to subject the spine to a sudden let-up while in the frame or after the second jacket is being applied. Also, I do not undertake to correct any spine unless the case has been gone over thor-

oughly by several men, namely, the internist, the chemist and the pathologist.

Then, again, I think the rapid correction is directly dependent upon the frequency with which one X-rays the given case through the plaster-of-paris jacket. We must remember that the actual curvature of a given spine is really greater than that of its appearance; namely, the bodies have rotated and are much farther over than the spinous processes which outline the curve. If X-rays are not taken, one cannot tell which part of the spine requires more correction, and in compound curves much harm may be done and an exaggeration of the old condition may be caused. To illustrate what I have said, I wish to pass around radiograms of a few cases which have received much benefit from the treatment. The first case is one which received very little benefit after a year and a half of hard work by every other method. After Abbott's method had been used, correction resulted in seven weeks. The second had been treated almost two years and was corrected by the new method in a short time. The third, a type of case which could not have been undertaken formerly with any result, with the new method is rapidly correcting.

In conclusion, I wish to say that it is the duty of every progressive physician to thoroughly familiarize himself with what can be done in the fixed types of lateral curvature which formerly were considered hopeless.

DR. SAMUEL KLEINBURG said: I will take it for granted in my discussion that the only competent guide in obtaining a fair estimate of any surgical procedure is experience.

A little over a year ago, the orthopedic surgeons were astounded by a statement in a medical journal that fixed rotary lateral curvature of the spine was more easily corrected than club foot or bow-legs. A method was then described that gave record of many cases of severe deformity corrected, nay over-corrected, in a few, three or four weeks. The hope of a cure for a deformity that had baffled the keenest observers and most untiring workers for decades, inspired enthusiasm in some surgeons and filled others with doubt and skepticism. On the advice of Dr. Royal Whitman, who I believe was the first to see Dr. Abbott's work and recognize the value of the method, I set out to give the method an extensive trial.

The cases treated were not chosen, but taken as they came along, and so in most instances they were of a very severe type, and put the method to a rigid test. The ages of my patients varied from three to twenty-eight years, and the deformities from the mildest to the most severe; all the cases were ambulatory and none received morphine. At first, I was very much distressed to find that my cases did not progress as rapidly as one was led to believe ought be the progress under this method, and I soon became reconciled to improvement alone. In conditions with

such grave anatomical changes as take place in scoliosis, and as was very thoroughly emphasized by the writers of the paper, we must not expect rapid changes, and in point of fact, we do not get them.

It is necessary to recognize a few important details in this treatment: The position of the patient in the jacket is most essential; one must obtain a proper amount of flexion; equal to this in importance is the position of the pelvis, which on the side of the deformity, must be pushed backward, and on the opposite side brought forward and held thus very rigidly. This position of the pelvis carries with it the lumbar vertebrae, and tends to correct the lumbar curve. Next to the application of the jacket, the most important feature of this treatment is the insertion of felt pads. Here let me direct attention to the most dangerous part of the treatment. It is this padding that causes the discomfort, pain, insomnia, vomiting, tachycardia, dyspnoea and weakness from which the patients suffer to a greater or less degree. In two instances, fortunately not in my practice, the padding caused the death of the patient. The pads must be inserted every two or three days, and always only after the patient's general condition has been investigated. Incidentally, I might mention that it is wise to see these patients four and five times a week.

Now with a properly applied jacket, and careful supervision and judicious felt padding, what prospects have these children of cure? My experience leads me to confirm the opinion of the writers of the paper that scoliosis is still a great problem of orthopedic surgery, but we do not need to look upon a case of scoliosis with as much helplessness as heretofore.

If we will remember that in the past we have had no method at all by which we could correct even the mildest instances of fixed rotary lateral curvature of the spine, and that with this flexion treatment cases have been corrected, I will not detract one iota from the thanks and gratitude that the profession owes to Dr. Abbott for his wonderful discovery, when I suggest that it behooves us to investigate in what cases the method is applicable, and what we can expect of it. Of fifty cases treated during a period of about fifteen months, six have been over-corrected; twenty-three have been improved and twenty-one unimproved.

When we analyze these cases we find that the six cured patients all had moderate deformity, but such as would not have been corrected by any other treatment. The twenty-three improved cases were all very severe, but none had "razor-backs"; in this group there are about six or seven so much improved that their cure is expected in the near future. Three patients in this group were twenty, twenty-four and twenty-eight years old respectively. Of the group of unimproved patients fifteen gave up the treatment, due to the inconvenience and pain occasioned, while the rest had either razor-backs or high se-

vere cervico-dorsal deformities. Apropos of the very worst cases let me mention that in a personal interview with Dr. Abbott I was advised to leave the very bad cases alone.

In conclusion I believe that the Abbott method will improve all but the very worst razor-back deformities, but is especially applicable to, and will correct the milder deformities, and hence the sooner the cases come to the orthopedic surgeon, the brighter will be the prospect for correction and cure.

THE PHYSICIAN AND THE MENTALLY DEFECTIVE CHILD.*

By ISABELLE THOMPSON SMART, M.D.,

NEW YORK CITY.

THERE is no greater or more vital question before the American people today than the question of the child of defective mentality. It is demanding the earnest consideration of state legislators, sociologists and educators, but up to a very recent time physicians have been content to allow the layman to enter this field of pediatrics and control practically all that has been and is at present being done for this type of child. Only recently, at a meeting held in the New York Academy of Medicine to discuss the diagnosis of mental defect, psychologists contended that physicians, as a class, did not know how to diagnose the questionable type, and the contention was practically left unchallenged, and this, if true, is a very grave accusation and reflects in a very uncomfortable manner on the acumen of medical men and women. The type of case which I wish to present for your special consideration is not that type which is obvious even to the most uninitiated nor yet the type which is more or less markedly defective, but the child who is a puzzle, the unusual child; perhaps the nervous child; that member of the family who carries very few of the classical symptoms of defect, very few, perhaps none at all, of the typical stigmata of degeneration.

Every pediatricist in the state will recognize this child as needing skilled treatment; some will realize the *peculiar* needs of the case, while many will ignore, or fail to recognize the possibility of serious sequelæ to present conditions. The general practitioner will pass over the case lightly, with an optimism which is both myopic and dangerous, without in the least recognizing anything unusual or deserving of profound study, and will do untold harm by recommending parents to wait until the seventh or the fourteenth, or even the twenty-first year, before expecting that "everything will be right." I have had such statements told and retold me again and again, until I have felt heart-sick over the

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

lack of understanding of the normal development of healthy mental and physical child-life. Just what magic is to be looked for on the seventh birthday, or even at the fourteenth, is a puzzle to me. In ages past the mystical seven meant much to those who had not had opportunity for the deep and detailed study in development and growth of foetus-embryo—and child. There is positively no excuse for mysticism today, and I here put myself on record in making a *strong and earnest plea for the most careful and painstaking examination and study of every unusual child presented to any physician*, either by the parent or the school workers. A statement I frequently hear, and I am obliged to admit that there is some truth in it is, "Oh, doctors do not know about defective children, unless they are institution cases; they pay no heed to the puzzling child, to the nervous problem in the school, to the truant or the backward or unruly boy or girl. When asked for advice, we cannot obtain anything helpful; they tell us no more than we know ourselves." This is frequently too true, and for the reasons enumerated, physicians, as a class, *do not recognize the serious possibilities in each case presented, and they do not study or attempt to find out.*

This is a day of specialists, yet there are many physicians who are not specializing, and who should be alive to the opportunities and possibilities of more constructive work. By doing so they could do a vast deal to help solve the enormous problem of the proper treatment and care of a large percentage of our school children who are unusual, who are repeaters, or hold-overs. Some of these cases seem to defy the methods and means at our command for properly classifying them as to their mental status. They are in large measure borderline cases, and only by the closest scrutiny, by the use of the most approved methods in teaching and home and school hygiene, as well as by the most careful and scientific medical care, can we determine whether they will retrogress, remain practically stationary for months, perhaps for years, or whether, with a chance to gain proper nourishment, the correction of bodily defects,—for in a vast number of cases mental abnormalities of childhood are connected with bodily defects,—the timely recognition and treatment of nervous and mental instability, the proper personal and home hygiene, they will not find themselves, and, after a time, physical conditions improve markedly and mental faculties become active, and we may find the subject able to take his place and hold his own in fair and open competition. A very interesting experiment was conducted by two laywomen who had had considerable experience with children of defective mentality. This took place at Ellis Island in May, 1912. The experiment was planned to detect defective mentality among newly arrived immigrants, and was largely pseudo-scientific, so far as I have been able to ascertain, that is, no history of any

case was taken, and I doubt if such a thing was available, and no thorough physical examination was conducted; no tests made of the nervous system, nor of any of the usually accepted tests of mental ability. The subjects had all come through the unpleasant experiences of a long sea voyage, and were practically like the veritable "fish out of water," so new and strange were their surroundings. These facts must be considered in fairness to the suspects. The account of the testing I now quote:

"In May of 1912, the writer (of the article from which I quote), with two assistants from the Vineland Laboratory, made a visit to Ellis Island and were led to ask to be allowed to make an experiment, and the request met with a ready response on the part of the authorities on the Island. The request was this: That they be allowed to spend the day there, the one standing on the line and selecting such of the persons who came through as seemed to her mentally defective, her sole method of determining this being by her observation of them as they passed, based on her experience with mental defectives at the Institution at Vineland. The other assistant was to be in a nearby room with the Binet tests, and, without knowledge of whether the persons sent in were normal or defective, was to apply the test with the aid of an interpreter and see what the result might be. This was done.

"In the course of the day, twelve immigrants were selected for testing; nine of these were picked out because it was thought they were mentally defective. Three were selected as control cases, the opinion of the selector being that they were normal. The result as found by the Binet scale was as follows:

"Of the nine suspects, every one was from at least four to nine years backward. Of the three controls, one was seven years old and tested six; one was nine years old and tested ten; one was adult and went entirely through all of the tests.

"Encouraged by this experience, it was planned to devote an entire week to this experiment. It was not feasible to take it up at that time and consequently, it was postponed until September just past.

"A somewhat similar procedure was carried out with the following result:

"Although the work was not done under the most favorable conditions, remarkable results were obtained. There were many interested observers of every test; the interpreters were unused to the tests and many delays were encountered.

"Forty-four persons were tested. Thirty-three of these were selected by the regular medical inspectors of the department. Of these thirty-three, fifteen proved to be defective, while eighteen were normal. Eleven cases were selected by the lay experts in feeble-mindedness; of these eleven, only two were not defective and one of these had been taken to compare with a very

defective sister rather than because the case itself seemed defective.

"It is thus seen that of those selected by the physicians less than half were correctly selected, while of those selected by the experts seven-eighths were rightly chosen."

While the contention of these layworkers may be accurate and the persons examined by them during these tests may have belonged to the type of true mental defectives, I am not willing to grant that they knew, merely by this one test, without shadow of doubt, that this was so. All may have been backward; all may have been defective, but I would not be willing to grant this to any layworker, no matter what their previous experience, without the case in question being given a most thorough and exhaustive examination by a scientifically trained physician who could get at causes and pathological conditions as well as effects. Yet, the layworker is constantly scoring the physician in this problem, and it is time for *all* physicians whose work is primarily with children, to be up and doing; to be able to meet the snapshot diagnoses by the untrained or the partially trained so-called expert.

In the practice of almost every physician who is not closely specializing, there are, without doubt, numerous cases brought to him during a term of years which should demand and receive a careful and detailed study, especially where these children belong in families where he may be the one and only medical advisor. The child who shows retarded development from early infancy, *i. e.*, failure to respond to the stimuli of light and color at the usual time, the child who is late in talking, late in walking, or who, before the age for walking or talking, fails to evidence sensory curiosity, such as handling, rattling, tasting, or otherwise investigating the various objects of its environment; a child showing perversion of disposition, such as marked temper, unusually tearful or morose, or secretive, disinclined to be social, needs detailed study. This child needs to be watched all through the formative years; its progress, or lack of progress in school noted, every nervous manifestation carefully noted, mental acumen measured again and again; eyes, ears, nose, throat, secretions, blood, heart, liver and lungs, all come in for a share of attention, for only as one is thorough and painstaking can he or she accomplish their true purpose.

Many interesting experiments have been under way for some time past concerning the analysis of abnormal development of mind and body as to the role played in the production of such abnormalities by the hyper-secretion and under-secretion or total lack of secretion of many of the hitherto little thought of glands, especially the pituitary, while the thymus, thyroid, adrenals, and others, have been very carefully studied and considerable definite and helpful data secured. The study of conditions of the blood in this con-

nection has been made by Pende, of the Royal University of Palermo, and the data he has collected is considered a "very important factor in all pathological analysis."

The physician of today cannot afford to be behind the times in his general intelligence in all that pertains to the child; he or she cannot afford to be too optimistic concerning the child's mental and moral development, as this means only a serious waste of valuable time; they must keep abreast of all medical literature. Nor is this enough; they should be abreast of the times in the big social problems which are confronting us, especially the economic and eugenic questions concerning the children of our nation, and the best way to begin is by a study of the problems as they present themselves in our own community.

I think it is Oliver Wendell Holmes who is credited with the terse saying, "If you want to reform a man, begin with his grandfather." He spoke a scientific truth; he expressed a basic principle of eugenics. We have before us the grandfathers and grandmothers of future generations. In how far do we shoulder our responsibility? The cry of the unfit is heard abroad in our land, no matter where we turn. How are we to answer to the cry? Only a few weeks ago an investigating committee, appointed by the executive head in Albany, showed its complete ignorance of this tremendous problem, and made recommendations for wilfully retarding one of the best pieces of work begun by our state in the last decade, and if these recommendations are heeded, it will sound the death knell to the progress of properly caring for a vast number of defective children for years to come. I here quote its recommendations for Letchworth Village:

"The purpose of this institution is undoubtedly an admirable one, to build near the City of New York, at a cost of about \$3,000,000, a large institution for the unfortunates who are now committed to up-state places. A large amount of money has already been appropriated, but has not been expended, and this institution is being built upon the cottage plan for caring for inmates. While this plan may have certain good features, yet the investigation that we have made leads us to believe that the initial cost of building on the cottage plan is treble that under which similar institutions have been constructed in the past, and that the cost per capita of maintenance will also be very high. We believe that the matter ought to be carefully studied from all viewpoints before large additional appropriations are made."

Our state has thousands of unfit who should be cared for; their mentality is far below the normal and eventually they will demand the expenditure of large sums of money by the state, not only to be used for the care of themselves, but of a far vaster progeny, for it is now an accepted fact that persons of a low level of mentality multiply six times faster than those on a

high level. Are we physicians to sit by and keep silent when politicians of the rankest stamp promulgate such penny wise, pound foolish policies? Are they to be permitted to have the last word concerning the proper care of children of defective mentality? The question is a burning one, and I implore the physicians to make themselves wise in knowing this problem and in knowing the children in their communities who may belong to any of the various types of mental defect, so that an intelligent protest may be made against any laws which may endanger, not only this class of children, but the child of normal mind, who may later mate with the unfit, and so on *ad infinitum* keep this vicious circle ever widening.

Discussion.

DR. MARY SUTTON MACY said: In Doctor Smart's admirable paper, she alludes to the necessity for careful examination of *all* unusual children with a view to the proper classification and probable treatment of any such, that may be in slighter or greater degree mentally deficient, and she calls particular attention to the child showing retarded development from infancy.

This is a highly important point to bring to the attention of pediatricists, who necessarily come most closely in touch with such children prior to school age, and even later, to and possibly through the pubertal crises. The consequences of retarded development, or even of a temporary arrest of development in some slight particular are all too little appreciated by physicians as a whole, be they specialists or general practitioners.

Within the last few years, I have been most forcefully impressed with the dearth of medical and scientific data on the *normal* development

of the child after 3, and especially so with the apparent tendency to neglect all differentiation between the degrees of development of organs and functions in the child after 6 years of age and in those of the adult. If we are comparatively ignorant—and the lack of available information suggests ignorance—on the relative degrees of maturity in various functions and organic systems for normal children, we cannot expect to advance much with the abnormal, the retarded, or the arrested forms of development which appear in mental defectives.

In scientific progress much good has appeared to result from various series of statistical studies, and on the side of the problems suggested by Doctor Smart's paper I would like to call attention to a few series of statistical data already published.

I. From *Pediatrics* for November, 1911, allow me to quote the following from an article written jointly by Doctor Smart and by me.

"The data offered was collected in the course of the routine examination of 6,245 school children in the public elementary schools of New York City. The examinations are in three series, the first representing 1,906 children between six and sixteen years of age; the second series 2,222 children between the same ages; and the third series 2,117 children between seven and fifteen years old. All the cases presented for these examinations were sent up by the schools on the presumption that they were mentally deficient. This presumption was variously arrived at by the pedagogical authorities presenting the cases; some children being reported because of their inability to advance in the grades without at least repeating each term; some cases reported had no other ground for presentation than a reputation for excessive 'badness' or for

CHART.

	1st series		2d series		3d series		Total	
	Percentage of Examined	Percentage of Assigned	Percentage of Examined	Percentage of Assigned	Percentage of Examined	Percentage of Assigned	Percentage of Examined	Percentage of Assigned
Eye defects	83.6	89.5	92.4	94.6	89.7	92.7	88.6	92.2
Ear diseases or deaf.....	68.8	69.2	62.3	52.2	72.2	73.9	67.7	65.1
Defective teeth	78.2	75.4	71.4	75.0	68.4	70.3	72.7	73.6
Tonsils alone enlarged.....	36.5	34.8	32.5	30.8	31.0	29.6	33.2	31.4
Adenoids alone enlarged.....	32.3	27.9	27.9	27.6	28.5	32.3	29.6	29.2
Tonsils and adenoids	47.2	43.7	53.5	49.9	49.7	46.5	50.1	46.7
Speech defects	42.9	57.6	39.6	42.8	41.4	53.2	41.3	51.2
Epilepsy	7.6	12.2	4.4	4.7	7.1	10.0	6.4	8.9
Chorea	5.3	5.5	3.7	3.9	4.2	5.8	4.4	5.1
Other neuroses	37.5	39.8	29.9	32.1	30.8	37.3	32.7	36.4
Tubercular suspects	8.9	6.5	6.6	7.1	9.1	9.2	8.2	7.6
Cardiac weakness	17.4	16.9	16.8	16.8	18.2	17.7	17.5	17.1
Nutritional disorders	67.2	79.9	67.0	71.2	72.0	81.6	68.7	77.6

chronic truancy; but some gave such physical and mental evidence of low grade imbecility or idiocy as to be unmistakable even to the least informed, average-minded layman. Of all cases in the three series 13 per cent. were truly institutional cases of mongolianism, imbecility or idiocy; 51.8 per cent. were found to be in need of some very specialized form of pedagogical training in order to develop the mentality present to its fullest extent.

"Bearing in mind the relation which nutritional condition and physical environment are generally conceded to bear to the character of general mental efficiency, the proportions of individual defects found in the course of these examinations have a very pertinent interest and are graphically shown in the chart. It must be reiterated that the children concerned in these examinations were all backward and the proportions of physical defects evidenced might reasonably—in the light of many statistical studies—be expected to be larger than among the general school population.

"The large percentage of sensorial defects as well as general nutritional and neurotic disorders may have some relation to the degree of mental inadequacy since the proportions in all these conditions are so universally larger among those requiring the special training of the ungraded classes.

II. Doctor Smart in a paper read last September in Washington, D. C., before the XVth International Congress on Hygiene and Demography, gave the following data from 10,000 examinations:

PERCENTAL CHART OF 10,000 CASES SHOWING RELATIVE PHYSICAL DEFECTS.

Chorea	4.0
Epilepsy	5.1
Heart	29.9
Nose	34.9
Throat	42.6
Neurotic	37.0
Sex	41.5
Speech	42.0
Ears	48.3
Dental	71.4
Indicating General Medical Care.....	74.3
Eyes	95.3
Needing Residential Hospital Care.....	6.9
Needing Special Open Air School.....	3.5

25.42 of all cases were of foreign extraction.

48.05 of all cases were American born of mixed foreign parentage.

Of these 21.8 were Russian-Polish Jews. 19.6 were Austro-German Jews. 58.6 were various mixtures.

17.3 of all cases were of native birth and parents.

82.7 of all cases were of foreign birth or parents.

III. In a much more curtailed series, and, I may say, a selected one, involving *borderline* cases only, I published the following in an article appearing in the *New York Medical Journal* for November 30, 1912:

"I have in mind some 125 cases which have come to my attention, in all of which, in the original series of examinations, appeared more or less definite signs of mental deficiency, including from two to four years' retardation according to the Binet-Simon tests, and also in every case a number of physical inefficiencies or deficiencies. These children, after careful study and consultation of experts, were all classed as feeble-minded and recommended for special pedagogical treatment, as well as medical and hygienic care. Among the physical defects found may be mentioned the following:

Organic heart lesions appeared in 32 per cent	Functional heart defects appeared in	3 per cent. more
Eye defects, either diseases, or functional inefficiencies in .....		.92 per cent.
Nutritional disturbances accompanied by bad teeth in.....		.75 per cent.
Epilepsy, chorea, and other neuroses in .....		.44 per cent.
Adenoids or defective nasal breathing, and enlarged tonsils in.....		.68 per cent.
Deafness—partial or complete—or ear diseases in .....		.50 per cent.
Tuberculosis—pulmonary or glandular—in .....		.15 per cent.

"Without exception these 125 patients, following upon proper medical and hygienic treatment, and having the advantage of intelligent and specialized pedagogical care during the space of from two to four years, have so far recovered from their "feeble-mindedness" that they have been able to resume and maintain their place in classes of children of their own age. For about thirty-two per cent. medical care is still necessary; about thirty per cent. more are still handicapped by their sensory inefficiency, but not sufficiently so for any one today to class them as feeble-minded.

"The points I should like to emphasize here are: 1. Originally and despite close observation and study, these cases were diagnosed as feeble minded by medical, pedagogical, and psychological experts alike. 2. Today such a diagnosis would not be made. 3. Not institution, but school and medical and hygienic care have accomplished the transformation."

DR. IRA S. WILE said: The problem of the mentally defective child is very large as may be judged from the estimation that there are 300,000 feeble-minded people in the United States. These should have institutional care. According to Van Sickle, Witmer and Ayres, 4 per cent. of the public school children are feeble-minded though only one-half of one per

cent. are of the calibre of imbeciles, idiots and "Mongolians." This latter group should be given into the custody of the state.

The Letchworth Site Commission in its investigations of a few years ago estimated that there were 12,300 feeble-minded persons in New York State. The latest report against this much needed institution discredits the previous investigation.

The most difficult type of feeble-minded child is the one who has an additional defect as blindness or deafness. Each of these types requires different treatment, medical and educational. The public schools form an excellent clearing house for the purpose of detecting mental defectives who otherwise would escape notice from responsible authorities. The establishment of ungraded classes is a rational step in ascertaining the number of defectives by reason of the existence of a group of normal children in each class who might be retarded by reason of their presence in the normal classes. The pedagogue has been able to note the retarded child but is not capable of appreciating the underlying causes. The physicians are unable to agree at the present time upon the high type of mental defectives and care must be taken in establishing a diagnosis.

Some so-called defectives are really suffering from malnutrition, defective eyesight or defective hearing. These children require a different type of treatment than the mental defectives pure and simple.

The eugenic aspects of mental defectives is well illustrated from the book called *The Kallikak Family*. There is described a man who married a normal woman and then later mated with a defective woman. As a result the progeny from the first wife were normal while those from the abnormal woman were principally defective. The future of the race demands careful care of the matings of defectives.

The state through a commission should be able to commit a child deemed definitely to be a menace to the public welfare. The great difficulty at present lies in the absence of custodial institutions to which children or adults may be committed. Physicians have not full acquaintance with the problems of mental defectives because the subject has not received adequate attention at medical colleges.

Since the days of Itard and Seguin there has been a great advance in knowledge relating to this important group of patients. This knowledge has not diffused itself through the colleges. The physician of ten years graduation has had little opportunity to become acquainted with the variety of mental defectives now known—nor indeed did the pedagogues of ten years ago have much practical knowledge upon the subject.

The problem in brief includes: 1. Finding the mental defective. 2. Ascertaining the basic causes. 3. Spreading scientific information re-

lating to this group. 4. Educating the public to its economic and social importance. 5. Providing adequate educational and institutional care.

AUSCULTATION AT THE ACROMION PROCESS — ITS IMPORTANCE IN APICAL DISEASE.*

By ROBERT ABRAHAMS, M.D.,

NEW YORK CITY.

I HAVE studied auscultation at the acromion processes or, to be anatomically accurate, the acromion ends of the clavicles, for more than three years and have come to the conclusion that the subject deserves a place in physical diagnosis.

The mode of procedure is very simple: the bell of the stethoscope is placed over the acromion end of the clavicle and is adjusted in a way that there is perfect adaptation between instrument and bone. More frequently, in order to ensure perfect adaptation, it is necessary to cover the acromion process (hence the title of the paper) of the scapula as well as the acromion end of the clavicle. This done, the patient is told to breathe, count, whisper or cough, whichever sign one is endeavoring to bring out.

Once in a while, in spite of the best efforts, the essential adjustment cannot be made, due either to instrumental or anatomical difficulties, then the procedure is a failure.

In auscultating this bony process the phonendoscope is useless and a soft rubber chest piece is of no advantage. The old-fashioned hard rubber, ivory or metallic bell answers the purpose well.

In listening to these processes it is important to remember the physiological, auscultatory differences between the right and the left apices.

The right apex is characterized by bronchovesicular breathing; distinct spoken voice and clear whispered sound.

The left apex is characterized by vesicular breathing; indistinct spoken voice and muffled whispered sound.

When the apices are perfectly healthy, auscultation at the acromion ends of the clavicles strikingly emphasize their respective physiological differences. An exception to this rule is found, once in a while, in auscultating the acromion end of the left clavicle. This consists in a reversal of the vesicular murmur in as much as the expiratory sound is found louder, more pronounced than the inspiratory sound.

When the apices are diseased the following is to be observed:

1. Right apex. In the case of a very early infiltration of this apex, auscultation at the acromion process will yield an appreciable, prolonged expiratory sound, a louder spoken voice and a slightly increased whispered sound. These acous-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

tic changes may not at all be heard through direct auscultation over the apex. In other words, the acromion process may be the first to send the storm signal of the apical disease when, however, it is properly auscultated.

First stage tuberculosis of the right apex will reveal through auscultation of the acromion end of the clavicle tubular breathing, bronchophony and whispered pectoriloquy—signs which, when found over lung tissue, would indicate absolute consolidation. In other words, the usual acoustic phenomena which are, or should be, apparent in the first stage of tuberculosis of the apex are greatly exaggerated and made unmistakably evident when the outer bony process of the right clavicle is auscultated.

2. Left apex. In incipency of the left apex, breathing conducted through the acromion end of the clavicle becomes pronounced broncho-vesicular, and an increase in voice and whispered sound becomes marked and notable, while the same changes are but with difficulty perceived by auscultating the apex itself.

When the infiltration reaches a fair degree of advancement, like unto the first stage, breathing heard at the acromion process assumes a tubular character; the voice changes into bronchophony and the whispered sound sounds like pectoriloquy. The same signs, under the same condition of the apex, will be found over the apex, but, not nearly so clear, demonstrable and pathognomonic.

These findings are so fairly common and so typically tell-tale, that very often I begin auscultation of the apices at the acromion processes.

This method of auscultation is of great value in the case of a tuberculous focus lodged under or behind a clavicle. The usual procedure, in this event, is to percuss the clavicle in order to ascertain the presence or absence of bony resonance. Auscultation above or below the collar bone is of no value. Auscultation of the acromion end of the bone gives fair and frequently indubitable evidence of a lesion, manifested by a change of the respiratory murmur, or voice, or whispered sound, or in the three together. The clavicles seem to pick up the sounds, whatever they are, carry them to the acromion extremities and the stethoscope does the rest.

Of still greater diagnostic utility is auscultation at the acromion process in revealing crepitan, sub-crepitan, mucous or sibilant rales when one or all of these are either missed by the stethoscope when held over the apices or are indistinct.

I heard these signs again and again and demonstrated them to assistants and students (post-graduates) to their entire satisfaction.

Frequently when apical tuberculosis is suspected, the patient is asked to cough and breath while auscultation over the apex is carried on. This is done with a view to bring local, or localized, rales within the scope of hearing. Auscul-

tation at the acromion ends will make such rales much more perceptible, much more audible.

Experience teaches to exclude crackling sounds of the skin covering the ends of the clavicle for crepitan, sub-crepitan rales or friction sounds.

Patients with deep voices and large laryngeal capacities are poor subjects for such auscultation. The great volume of their voice and breathing and sound imparts a large part of it to the clavicle, which leads to confusion at the acromion end of the bone.

Sometimes auscultation at the extremity of the clavicle shows signs which do not tally with the diagnosis of active tuberculosis of the apex, as revealed by the appearance of the patient, under such circumstances one is inclined to the belief that the apex is the seat of a healed or arrested tuberculous process.

LEGISLATIVE NOTES.

CHAPTER 470 OF THE LAWS OF 1913.

AN ACT to amend the penal law, in relation to the sale or possession of cocaine or eucaïne.

Became a law May 9, 1913, with the approval of the Governor. Passed, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section seventeen hundred and forty-six of chapter eighty-eight of the laws of nineteen hundred and nine, entitled "An act providing for the punishment of crime, constituting chapter forty of the consolidated laws," as amended by chapter one hundred and thirty-one of the laws of nineteen hundred and ten, is hereby repealed.

Sec. 2. Such chapter is hereby amended by inserting therein a new section to be section seventeen hundred and forty-six to read as follows:

Sec. 1746. *Sale of cocaine or eucaïne, and regulations respecting their possession.* Alkaloid cocaine or its salts, or alpha or beta eucaïne or their salts, or any admixture, compound, solution or product of which cocaine or eucaïne or their salts may be an ingredient, shall not be sold, offered for sale, furnished, disposed of, given away or possessed by any person except in the manner prescribed in this section and by the persons authorized herein.

(a) It shall be lawful for a licensed pharmacist or a licensed druggist, upon the written prescription of a physician duly registered and licensed to practice in the state of New York, to sell or dispense, alkaloid cocaine or its salts or alpha or beta eucaïne or their salts. If in such prescription the percentage of such substances to the total contents of the prescription shall exceed one per centum thereof the pharmacist or druggist to whom such prescription is presented shall before filling the same verify the prescription by inquiry of the physician issuing the same. Such prescription shall be retained by the person dispensing the drug, and no copy of such prescription shall be made by or delivered to any person, and such prescription shall be filled but once, except that it shall be lawful for a licensed pharmacist or druggist to refill and to give to the person presenting same a copy of a prescription of which cocaine or eucaïne is a component part, if the proportion of such substance to the total content of the prescription does not exceed one grain thereof to each fluid ounce or in the case of ointment does not exceed two grains of such substance to the ounce. When any of such substance is so dispensed or sold upon such written prescription of a physician, the person selling or dispensing the same shall simultaneously deliver to the

person to whom the same is sold or furnished a certificate stating the name and address of the person selling or furnishing such drug or mixture, the name and address of the physician upon whose prescription the same is sold or furnished, the date of sale and the amount sold. The possession of such certificate shall be a defense to a charge of misdemeanor under paragraph (h) of this section, provided the person possessing such substance shall not have in his possession an amount exceeding the amount specified in such certificate, and provided that such certificate shall not legalize the possession of such substance for more than ten days after its issuance if the proportion of cocaine or eucaïne or their salts to the total content of the prescription shall exceed one grain to the fluid ounce, or, in the case of ointment, two grains to the ounce, unless on such certificate there shall be written by the physician issuing the prescription a statement that the use of the substance is necessary for a longer period, to be named in such statement. It shall be lawful for any physician duly registered and licensed to practice in the state of New York, after personal examination of a patient, to prescribe and himself dispense such substances to such patient, provided he shall execute and deliver the certificate required of a dispensing druggist or pharmacist.

(b) Such substances may lawfully be sold in the original package at wholesale by any manufacturer thereof to any other manufacturer thereof or to a wholesale dealer in drugs, and by any wholesale dealer in drugs to any other wholesale dealer in drugs or to a manufacturer thereof, provided such package shall be securely sealed and labeled as prescribed in this section, and provided a record of such sale shall be kept in the manner prescribed in this section by the person selling and the person purchasing said substances. It shall be lawful for a manufacturer or wholesale dealer in drugs after the purchase in bulk of such substances, to repack the same in other containers which shall be sealed and labeled as prescribed in this section. When so repacked, sealed and labeled such containers shall, for the purposes of this section, be deemed to be original packages.

(c) Such substances may lawfully be sold in the original package to a licensed pharmacist, licensed druggist, duly registered practicing physician, licensed veterinarian or licensed dentist by any manufacturer of such substances or wholesale dealer in drugs upon the written order of the pharmacist, druggist, physician, veterinarian or dentist to whom the sale is made, provided such package shall be securely sealed and labeled and provided a record of such sale shall be kept in the manner prescribed herein by the person selling and the person purchasing such substance.

(d) Before making any sale provided for in paragraphs (b) and (c) of this section, the manufacturer of such substances or wholesale dealer in drugs shall affix or cause to be affixed to the bottle, box, vessel or package containing the article sold, and upon the outside wrapper of the package as originally put up, a label distinctly displaying the name and quantity of cocaine or its salts, alpha or beta eucaïne or their salts sold, and the word "poison" with the name and place of business of the seller all printed in red ink.

(e) The manufacturer of such substances or wholesale dealer in drugs shall, before the delivery of any of such substances sold by him, make or cause to be made in a book kept for the purpose, an entry of the sale thereof, stating the date of sale, the quantity sold, the name and form in which it is sold, the name and address of the purchaser, the name of the person by whom the order is filled, the name of the person by whom the entry is made, a description of the package or container in which the substance is sold, and a statement that such substance was sold and purchased in the original package, that the package was sealed, that the seals thereof were undamaged and unbroken, and that the labels were attached thereto as hereinbefore prescribed, and were not in any manner defaced or dam-

aged, and a statement showing how delivery was made, whether personally or by mail, express, freight or messenger. The record and statement thus made in such book shall be signed by the person filling such order for such substance and may be received in any court against the person filling such order and the person selling such substance as evidence of the transaction recorded and the facts stated therein. The said book and record shall be kept in the regular place of business in the state of New York of such manufacturer and wholesale dealer and shall be open at all times for inspection by the officers or authorized agents of the state or local board of health, the New York state board of pharmacy and by the police authorities and officers charged with the enforcement of the penal law, and shall be preserved for at least five years after the date of the last entry made therein. The items in such book respecting the sale of said substances shall be consecutively numbered, and upon the receipt by such manufacturer or wholesale dealer of any order for any of such substances there shall be written or stamped upon such order so received the serial number corresponding to the next open numbered entry space in such record book and the said serial number shall also be written or stamped upon the package containing such substances when the same is delivered in pursuance of the said order. Such original orders shall likewise be kept by the said manufacturer or wholesale dealer in a convenient place in the state of New York; and shall be preserved for at least five years after the dates of such orders.

(f) The manufacturer of such substances or wholesale dealer in drugs, licensed pharmacist, licensed druggist, duly registered practicing physician, licensed veterinarian, or licensed dentist shall, upon the delivery to him of any of such substances purchased by him, make or cause to be made in a book kept for the purpose, an entry of the purchase thereof, stating the date of purchase thereof, the quantity purchased, the name and form in which it was purchased, the name and address of the seller, the name of the person by whom the purchase is made, the name of the person by whom the entry is made, a description of the package or container in which the substance is purchased, and a statement that such substance was sold and purchased in the original package, that the package was sealed, that the seals thereon were undamaged and unbroken, and that the labels were attached thereto as hereinabove prescribed, and were not in any manner defaced or damaged, and a statement showing how delivery was made, whether personally or by mail, express, freight or messenger. There shall also be recorded in such book the particular place in which such substance so purchased is to be kept by the purchaser, which place shall be easily accessible and shall be within the state of New York and shall not be changed except that at the time of such change an entry thereof be made in such book opposite the original entry of the purchase and signed by the purchaser. The record and statement thus made in such book shall be signed by the person purchasing such substance and may be received in any court against the person receiving such substance and against the person to whom the same is sold as evidence of the transaction recorded and the facts stated therein. Such book and record shall be kept in the regular place of business in the state of New York of such purchaser, and shall be open at all times for inspection by any prosecuting officer in the state or his subordinates and by such persons as may be designated by him. Such book shall be preserved for at least five years after the date of the last entry made therein.

(g) Any person who shall sell, offer to sell, furnish, dispose of or give away alkaloid cocaine or its salts or alpha or beta eucaïne or their salts or any admixture, compound, solution or product of which cocaine or eucaïne or their salts may be an ingredient, except under the conditions and to the persons authorized by this section shall be guilty of a felony. Any dentist, veterinarian or physician who shall dispense such substances

to a patient without issuing the certificate required by paragraph (a) to be made and issued by him shall be guilty of a felony. Any druggist or pharmacist who shall fill any prescription issued in violation of this section shall be guilty of a felony.

(h) Any person other than a manufacturer of such substances or a wholesale dealer in drugs or a licensed pharmacist, licensed druggist, duly registered practicing physician, licensed veterinarian or licensed dentist who shall possess any quantity whatever of alkaloid cocaine or its salts or alpha or beta eucaine or their salts or any admixture, compound, solution or product of which cocaine or eucaine or their salts may be an ingredient, shall be guilty of a misdemeanor, unless the said possession is authorized by the certificate described in paragraph (a).

(i) Any licensed pharmacist, licensed druggist, duly registered practicing physician, licensed veterinarian or licensed dentist or manufacturer of such substances or wholesale dealer in drugs, who shall possess any quantity whatever of alkaloid cocaine or its salts or alpha or beta eucaine or their salts, or any admixture, compound, solution or product of which cocaine or eucaine or their salts may be an ingredient, in any place other than the place scheduled in the record herein provided for, shall be guilty of a misdemeanor, except that a duly registered practicing physician, licensed veterinarian or licensed dentist, may carry such substances for use in his profession, provided the amount so personally carried and the amount kept in the place scheduled in his record shall not together exceed a total of one and one-eighth ounces of such substance. Any person who shall under the provisions of this section be required to record the possession, disposition, sale, purchase or the place of keeping of such substances who shall fail to record the possession, disposition, sale or purchase thereof or the place in which the substances so possessed or purchased are kept, in the manner and after the form prescribed in this section, shall be guilty of a misdemeanor.

(j) Every manufacturer of such substances, wholesale dealer in drugs, licensed pharmacist, licensed druggist, duly registered practicing physician, licensed veterinarian and licensed dentist shall keep an accurate record in a book kept for that purpose of all alkaloid cocaine or its salts or alpha or beta eucaine or their salts or any admixture of cocaine or eucaine disposed of by him, and the possession in the place designated in the record herein directed by paragraph (e) to be kept of an amount less than the difference between the total amount received by him and the amount shown by his record to have been disposed of, shall be presumptive evidence of a sale of the amount of such substances not accounted for in violation of this section. No record of dispositions of such substances need be made by any physician, veterinarian or dentist, except that such persons shall at least once in each six months record the gross amount of such substances disposed of by him.

(k) Within thirty days after this section takes effect every manufacturer of alkaloid cocaine or its salts or alpha or beta eucaine or their salts, or any admixture, compound, solution or product in which cocaine or eucaine or their salts may be an ingredient, every wholesale dealer in drugs, licensed pharmacist, licensed druggist, duly registered practicing physician, licensed veterinarian and licensed dentist shall make a record of the amount of each of said substances possessed by him in a book to be kept for that purpose, which may be the book in which purchases are recorded. Such book shall be kept at the regular place of business of each of said persons in the state of New York, and there shall be specifically stated in such book the amount of each of said substances possessed by the person making the record and the particular place in which the same is kept. Such book shall be open to inspection by any

prosecuting officer in the state or his subordinates and by such persons as may be designated by him. Such book and record shall be preserved for at least five years after the date of the last entry made therein. In the event that the amount of said substances possessed at the time this section takes effect by any licensed pharmacist, licensed druggist, duly registered practicing physician, licensed veterinarian or licensed dentist, shall exceed the amount specified in paragraph (1) of this section, such possession shall not be deemed to be unlawful, provided that the persons possessing the same shall not purchase or acquire in any manner whatever any more of such substances until the amount on hand shall be reduced by lawful disposition thereof to an amount less than that prescribed by paragraph (1). If any of the persons entitled to possess such substances in any amount shall possess an amount in excess of that authorized by paragraph (1) it shall be the duty of each of such persons to report in writing to the state department of health, within thirty days after this act takes effect, the amount of each of such substances possessed by him and the place where the same is kept. Such reports shall be alphabetically filed in the office of the state department of health and shall be open to public inspection. Any person violating the provisions of this paragraph of this section shall be guilty of a misdemeanor.

(l) It shall be unlawful to possess or have in any pharmacy or drug store in this state more than one and one-quarter ounces of alkaloid cocaine or its salts or alpha or beta eucaine or their salts for each duly registered pharmacist or druggist regularly employed in such pharmacy or drug store, provided, however, that in no event shall there be carried in stock in such pharmacy or drug store to exceed five ounces of such substances no matter what number of registered pharmacists or druggists may be employed therein. It shall be unlawful for any physician, dentist or veterinarian to possess more than one and one-eighth ounces of alkaloid cocaine or its salts or alpha or beta eucaine or their salts. Any person who shall violate any of the provisions of this paragraph shall be guilty of a misdemeanor.

(m) This section shall not apply to nor prohibit the regular and ordinary transportation of such substances as merchandise, provided the same shall be labeled and sealed as prescribed in this section, nor to the possession of such substances by duly authorized officials charged with the enforcement of the law when such substances are possessed by them in pursuance of their official duties and in connection with the apprehension and prosecution of persons offending against this section.

(n) It shall be lawful for one person in the regular employ of each public hospital or dispensary in this state, to be selected and designated by the managers or board of trustees of such hospital or dispensary to purchase and possess alkaloid cocaine or its salts or alpha or beta eucaine or their salts, provided such purchase and possession shall be for the exclusive use of such hospital or dispensary and provided that such substances shall be kept within the hospital buildings or dispensary. The amount of such substances so possessed shall not exceed five ounces at any one time, and the person so designated by such managers or trustees of such hospital or dispensary shall keep the same record of purchases and dispositions as is hereinabove directed to be kept by other persons purchasing and possessing cocaine or eucaine or their salts, and he shall be liable to the same penalties as hereinabove provided. The record directed herein to be kept shall be open to inspection by the same authorities as are hereinabove provided, and the record shall be preserved in such hospital or dispensary for at least five years after the date of the last entry made therein.

Sec. 3. This act shall take effect immediately.

The Medical Society of the State of New York

ERRATA.

Sections 2 and 3, Chapter VIII., By-Laws, page 288, New York State Journal of Medicine should read as follows:

Section 2. Each District Branch shall elect a President as directed in this Constitution and By-Laws, who shall be the Councilor for that Branch.

Section 3. Each District Branch shall elect such officers as are provided for in its by-laws.

WISNER R. TOWNSEND,
Secretary.

MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held at the State Society rooms, 17 West 43d Street, New York, May 16, 1913, at 2 P. M., Dr. William Francis Campbell, President, in the chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President and on roll call the following answered to their names:

Drs. William Francis Campbell, Arthur G. Bennett, Luzerne Coville, W. Stanton Gleason, Thomas J. Harris, Alexander Lambert, Lewis K. Neff, Myron B. Palmer, Charles H. Richardson, Victor A. Robertson, Robert Selden, William T. Shanahan, Wisner R. Townsend, and Joshua M. Van Cott.

A telegram was read from Dr. Pfaff, regretting his inability to be present.

The minutes of the last meeting were read and approved as read.

Moved, seconded and carried, that the letter from the Department of the Interior, Hot Spring Reservation, which was referred to the Council by the House of Delegates, be referred to the Committee on Public Health.

The question of the establishment of a County Society in the County of the Bronx and to be in affiliation with the State Society was, on motion referred to a special committee of three to be appointed by the chair, this committee to report at the December meeting of the Council.

The Chair appointed Drs. W. R. Townsend, F. W. Loughran and W. A. Boyd.

The request from Erie County in relation to a special, voluntary degree in surgery (possibly later in other subjects) analogous to the F.R.C.S., which the public will learn to recognize as an assurance of the holder's skill, which was referred to the Council by the House of Delegates, was upon motion duly seconded and carried, referred to a special committee of three to be appointed by the chair, to report at the next meeting.

The Chair appointed Drs. T. J. Harris, Parker Syms and J. C. MacEvitt.

The recommendation of the Reference Committee—that the Committee on Legislation co-operate with any committee of the American Medical Association in matters which must come under the consideration at Washington, and which was referred to the Council with power, was on motion, duly seconded and carried, referred to the Committee on Legislation.

Moved, seconded and carried that Mr. Ray B. Smith be sent an honorarium of \$25.00 for his services in drawing up the bill for the committee on the Regulation of the Introduction of Medical Expert Testimony.

Moved, seconded and carried that the Secretary of the State Society be requested to attend the meeting of the state secretaries and editors, to be held in Minneapolis on June 16th, and that upon presentation of proper vouchers he may have his railroad expenses paid.

Moved and seconded, that officers, members of committees and delegates or alternates acting as delegates for the Medical Society of the State of New York,

upon presentation of proper vouchers may have their railroad fares paid when traveling on business of the society, provided that all bills for railroad expenses shall be presented within sixty days after they have been incurred.

The following amendment was then moved and accepted, "that the railroad fares of the delegates to the American Medical Association be paid, provided that the delegates attend all the meetings of the House of Delegates of the American Medical Association and stay through the last meeting of said House." The motion was carried as amended.

Moved, seconded and carried that Dr. William Kirk, Jr., the winner of the Merrit H. Cash prize be given permission to publish his prize essay in another journal provided that he arrange for simultaneous publication.

Moved, seconded and carried that Drs. Albert Vander Veer, John F. W. Whitbeck and Edward D. Fisher be continued as the Committee on Prize Essays.

The president nominated as his appointee on the Committee on Scientific Work Dr. John O. Polak. On motion duly seconded and carried the nomination was approved.

Dr. Thomas J. Harris, Chairman of the Committee on Scientific Work reported in favor of continuing the five sections of last year.

Moved, seconded and carried that the sections for the next annual meeting consist of Section on Medicine, Section on Surgery, Section on Eye, Ear, Nose and Throat, Section on Obstetrics and Gynecology, and Section on Pediatrics.

Moved, seconded and carried that the Committee on Scientific Work present a report at the December meeting in regard to expense of stenographic reports for each section at the next annual meeting.

Dr. Neff, Chairman of the Committee on Legislation, nominated as a member of his Committee Dr. H. C. Buswell. On motion duly seconded the nomination was approved.

Dr. Van Cott, Chairman of the Committee on Public Health, nominated as members of his Committee Drs. Allen A. Jones and Charles Stover. On motion duly seconded the nominations were approved.

Dr. Richardson, Chairman of the Committee on Arrangements, nominated as members of his Committee Drs. Egbert Le Fevre, William H. Park, T. P. Berens, B. H. Wells, S. J. Kopetzky, J. Bentley Squier, and J. J. O'Connell. On motion duly seconded the nominations were approved.

Dr. Richardson, Chairman of the Committee on Arrangements, reported that arrangements had been made to hold the next annual meeting at the Hotel Astor. On motion duly seconded and carried the Hotel Astor was selected for the meeting of 1914.

Dr. Park, Chairman of the Committee on Medical Research, was not present and sent no report.

A letter was read by the President from the Secretary of the New York State Board of Medical Examiners relating to an official roster of licensed physicians.

Moved, seconded and carried that the matter be referred to the Committee on Publication.

Moved, seconded and carried that the Council authorize the publication of the Journal and Directory for 1913 and 1914, and that a committee of five be appointed to supervise the publication of both the Journal and Directory. The following were nominated as members of the Committee on Publication: Drs. John C. MacEvitt, Victor A. Robertson, Floyd M. Crandall, Alexander Lambert and Wisner R. Townsend.

Moved, seconded and carried that the nominations be closed and that the Secretary be authorized to cast the unanimous ballot of the Council for those nominated. The ballot was so cast and the President declared Drs. MacEvitt, Robertson, Crandall, Lambert and Townsend the Committee on Publication for the ensuing year.

Moved, seconded and unanimously carried that Dr. MacEvitt be chosen editor for the ensuing year.

Moved, seconded and carried that an Advisory Board of Editors be formed to secure County Society notes of interest for the JOURNAL, and that each County Society be requested to send the name of an editor to represent it.

Moved, seconded and carried that the salary of the editor be left to the Committee on Publication.

Moved, seconded and carried that the question of the policy of the JOURNAL be left to the Committee on Publication.

The Treasurer reported balance on hand \$6,121.90.

The chairman of the Committee of Arrangements for the Rochester meeting reported a balance on hand of \$643.68 after all local expenses had been paid. The Treasurer stated that this was the first time in his experience that the receipts from the commercial exhibits were sufficient to meet all local expenses and leave a profit for the Society.

Moved, seconded and carried that a letter be sent to Dr. Mulligan congratulating him upon the success of the recent annual meeting and thanking him for his efficient work.

Moved, seconded and carried that the Treasurer be authorized to draw from the Merrit H. Cash Prize Fund the sum of \$79.11, and after depositing the same to the credit of the Medical Society of the State of New York, to draw a check from the State Society funds for \$100 and send same to Dr. William Kirk, Jr., in payment of the Merrit H. Cash Prize awarded him by the House of Delegates on April 28, 1913.

Moved, seconded and carried that the Council request the Hon. Edwin A. Merritt, Jr., member of the Committee on Rules, to do all in his power to support and secure the passage of House Resolution No. 33, which is as follows:

"Resolved, That Rule X of the House of Representatives be amended so as to provide a standing Committee of Public Health and National Quarantine, consisting of twenty-one members, to be elected by the House.

"That Rule XI be amended, providing that all proposed legislation affecting the public health and national quarantine shall be referred to the Committee on Public Health and National Quarantine."

The Chairman of the Committee on Scientific Work reported that at a meeting held on May 10th, at which were present the President and Secretary of the Society, the Chairman of the Committee on Arrangements, the Chairman of the Committee on Scientific Work and the Chairmen of all the Sections, and the President's appointee to the Committee of Scientific Work, the following tentative plan was arranged for the meeting of 1914:

"That the meeting in New York should be largely a clinical meeting;

"That the scientific sessions should begin Tuesday morning with a general meeting which should include an address by some distinguished speaker;

"That there should be three sessions of the Sections, Tuesday afternoon, Wednesday morning and Thursday morning;

"That Wednesday afternoon, Thursday afternoon and Friday should be given over to clinical meetings in the various hospitals;

"That on Tuesday and Wednesday afternoons the clinics should illustrate as far as possible the papers read before the Sections."

The Secretary reported that the registration for the last five years at the Annual Meeting had been:

Meeting in Albany, 1909, 440; meeting in Albany, 1910, 447; meeting in Albany, 1911, 412; meeting in Albany, 1912, 721, Section plan introduced; meeting in Rochester, 1913, 972, Section plan continued.

There being no further business the meeting adjourned *sine die*.

WISNER R. TOWNSEND,
Secretary.

107TH ANNUAL MEETING.

SCIENTIFIC SESSION.

Tuesday Evening, April 29, 1913.

A Public Address entitled, "Prevention and Cure of Cancer" was delivered in Convention Hall, Rochester, by Parker Syms, M.D., before a large and enthusiastic audience.

SECTION ON MEDICINE

Tuesday, April 29th, 2 P. M.

DeLancey Rochester, M.D., Chairman, Buffalo; W. V. Ewers, M.D., Secretary, Rochester.

The following resolutions were passed:

"Resolved, That the section expresses its deep regret at the death of Dr. Norman MacLeod, Secretary of the Section, regret at the loss to the section, the loss to the profession, and extends its sympathy to the bereaved family of the deceased.

"Resolved, That the Secretary of the section be instructed to send a copy of these resolutions to the family of Dr. MacLeod."

Dr. Rochester appointed Dr. W. V. Ewers of Rochester as Secretary of the section.

The section then proceeded to the consideration of the manner in which the officers for the section for the ensuing year should be nominated. Dr. Alexander Lambert made a motion that the chair appoint a committee of three to nominate the officers for the ensuing year and report their nominations at the meeting to be held Wednesday afternoon, April 30th.

The chair appointed the following Committee on Nominations: Alexander Lambert, T. W. Jenkins and Albert T. Lytle.

The following papers were read:

SYMPOSIUM ON DISEASES OF THE CIRCULATORY SYSTEM.

"Pain and Other Clinical Manifestations of Myocarditis," Alexander Lambert, M.D., New York.

"The Symptomology and Diagnosis of Cardiac Involvement in Syphilis," Harlow Brooks, M.D., New York.

"The Relation of Internal Secretions to the Circulation," Nelson G. Russell, M.D., and Carroll J. Roberts, M.D., Buffalo, read by Dr. Roberts.

"The Polygraph," illustrated with charts and showing the instrument, George W. Ross, M.D., Toronto, Ont.

"Prevention and Treatment of Cardiac and Arterial Decompensation," Louis Faugères Bishop, M.D., New York.

Discussion by Hubert Schoonmaker, M.D., Clifton Springs; Benjamin W. Stearns, M.D., Unadilla; E. B. Cohen, M.D., Auburn; A. L. Benedict, M.D., Buffalo; Anthony Bassler, M.D., and Selian Neuhof, M.D., New York; and E. E. Cornwall, M.D., Brooklyn; closed by Alexander Lambert, M.D., and Harlow Brooks, M.D.

"Association of Uterine Growths with Goitre; Typical and Atypical Exophthalmic Goitre," Henry L. Elsner, M. D., Syracuse. Discussion by Alexander Lambert, M.D., and Abraham Jacobi, M.D., New York, and Herbert Witherspoon, M.D., Nashville.

"Treatment of Leukæmia by Benzol with Results in a Case of the Splenomyelogenous Form," Jerome Meyers, M.D., Albany, and Thomas W. Jenkins, M.D., Albany. Read by Dr. Jenkins. Discussion by Julius Ullman, M.D., Buffalo; John M. Swan, M.D., Rochester; Selian Neuhof, M.D., New York, and Dr. Gordon; Closed by T. W. Jenkins, M. D.

Wednesday, April 30th.

9.30 A. M.

JOINT SESSION OF THE SECTION ON MEDICINE WITH THE SECTION ON SURGERY.

SYMPOSIUM ON DUODENAL ULCER.

"Etiology and Morbid Anatomy," illustrated with lantern slides, Marshall Clinton, M.D., Buffalo.

"Diagnosis and Prognosis," James T. Pilcher, M.D., Brooklyn.

"Complications," John B. Harvie, M.D., Troy.

"Non-Surgical Treatment," Charles G. Stockton, M.D., Buffalo.

"Surgical Treatment," John B. Murphy, M.D., Chicago, Ill., by invitation.

Discussion for Medical Section by Allen A. Jones, M.D., Buffalo, and Max Einhorn, M.D., New York; for Surgical Section, Robert T. Morris, M.D., and Charles L. Gibson, M.D., New York, followed by a general discussion by William L. Wallace, M.D., and I. H. Levy, M.D., Syracuse. H. F. L. Ziegel, M.D., New York; Carl A. Huber, M.D., Rochester, Louis F. O'Neill, M.D., Auburn; J. B. Bogart, M.D., Brooklyn; W. W. Skinner, M.D., Geneva. Closed by James T. Pilcher.

Dr. Rochester then announced there would be no morning session of the Medical Section, that the papers scheduled for the morning would be the first ones of the afternoon.

2.10 P. M.

First order of business was the Report of the Nominating Committee who reported the following nominations for Chairman, Charles Stover, Amsterdam. For Secretary, G. Reese Satterlee, New York City. On motion the Secretary was instructed to cast one ballot. This being done Drs. Stover and Satterlee were declared elected and the scientific session was resumed, and the following papers read:

"Typhlo-albuminuria," Heinrich Stern, M.D., New York, discussion by L. Faugères Bishop, M.D., New York, closed by Dr. Stern.

"Cardiospasm, what it is; what it seems to be," Anthony Bassler, M.D., New York.

Discussion by T. W. Jenkins, M.D., Albany.

"Co-operation of State Medical Societies in Public Health Education," Eleanora S. Everhard, M.D., Dayton.

Discussion by H. P. Jack, M.D., Buffalo, followed by Herbert Witherspoon, M. D., Nashville, who congratulated the reader in behalf of the A. M. A. on the work she was doing in this line. The discussion was continued by Rosalie S. Morton, M. D., New York; Cora B. Lattin, M.D., Buffalo, and closed by Dr. Everhard.

"Industrial Disease Reporting Law," Leonard W. Hatch, M.D., Albany.

Discussion by Mr. John Shillady, Buffalo, B. W. Stearns, M.D., Unadilla, and Charles Stover, M.D., Amsterdam.

"Treatment of Hemorrhage by Powdered Normal Serum," illustrated with experiments, G. H. A. Clowes, M.D., Nashville, closed by Dr. Clowes.

Discussion by Charles Stockton, M.D., Charles A. Wall, M.D., and Allen A. Jones, Buffalo, John E. Welch, M.D., New York, and Herbert Witherspoon, M.D., Nashville, closed by Dr. Clowes.

"Experience with Neo-salvarsan at the Harlem Hospital," Howard Fox, M.D., New York.

"Results of Salvarsan Therapy in Malignant Syphilis Precox, Syphilide of the Palms and Gumma of the Tongue," Herman F. L. Ziegel, M.D., New York.

"Note on Frequency of Drug Eruptions," George H. Fox, M.D., New York.

Discussion by Dr. Briggs, closed by Dr. Fox.

Thursday, May 1st.

9:15 A. M.

"The Present Obligation of the General Practitioner Regarding Syphilis as to His Patient and as to the Public," E. Wood Ruggles, M.D., Rochester.

SYMPOSIUM ON TUBERCULOSIS.

"Examination of Those Exposed as a Factor in the Prevention and Relief of Tuberculosis," John H. Pryor, M.D., Buffalo.

"Auscultation at the Acromion Process; Its Sig-

nificance in Apical Disease," Robert Abrahams, M.D., New York.

"Treatment of Pulmonary Tuberculosis by Artificial Pneumo-thorax," J. Woods Price, M.D., Saranac Lake.

"Tuberculin Treatment," Edward R. Baldwin, M.D., Saranac Lake.

A letter was read from Dr. Hermann M. Biggs, New York, expressing his regret that he would be unable to be present and read his paper on "Control of Advanced Cases," as he was detained in Albany on medical legislation matters.

"Incidence of Renal Involvement in Pulmonary Tuberculosis," Henry S. Bernstein, M.D., Albany.

Discussion on the symposium by John M. Swan, M.D., Rochester; Charles Stover, M.D., Amsterdam; Henry S. Goodall, M.D., Lake Kashaqua, and Dr. Weisner, Syracuse. Dr. Abrahams was asked if he controlled his finding with the X-ray and if medistinal growth would interfere with the findings at the Acromion. Dr. Abrahams replied that he had not found medistinal growth and did not know what would be the effect. He had not used the X-ray as a control. Dr. J. W. Price then followed and showed a number of X-ray photographs. Dr. DeLancey, Rochester, spoke about the control of advanced cases. The discussion was closed by Dr. E. K. Baldwin.

SECTION ON SURGERY.

Tuesday, April 29th.

2 P. M.

Martin B. Tinker, M.D., Chairman, Willis E. Bowen, M.D., Secretary.

The following resolution was passed:

"Resolved, That the excellent and most instructive paper of Prof. Adami's should be in the hands of every teacher in the schools and colleges of the nation; and be it further

"Resolved, That the Council of the Society should have it printed in pamphlet form for general distribution."

Each one taking part in the discussion was given a unanimous vote to have his discussion published the same as if present.

The following papers were read:

GENERAL SURGERY.

"Conservation Treatment of the Injuries of the Hand," Vacil D. Bozovsky, M.D., Dunkirk.

Discussion by Joseph W. Magill, M.D., Rochester, and Frederick W. Lester, M.D., Seneca Falls.

"Uses of Radium in Surgery," Howard A. Kelly, M.D., Baltimore.

Discussion by Robert Abbé, M.D., and William S. Bainbridge, M.D., New York, Roswell Park, M.D., Buffalo.

"Operations Pertaining to the Bile Passages," Louis F. O'Neill, M.D., Auburn.

Discussion by Frederick W. Zimmer, M.D., Rochester, and Mark O'Meara, M.D., Kingston.

"Operation for Abscess of the Liver," Frederick W. Sears, M.D., Syracuse.

Discussion by Ross G. Loop, M.D., Elmira.

"The True Value of the Operation for Cancer," Edward M. Foote, M.D., New York.

Discussion by Nathan Jacobson, M.D., Syracuse, and William S. Bainbridge, M.D., New York.

"Possible Errors in the Diagnosis of Abdominal Cancer—A Plea for Exploratory Laparotomy. Illustrative Cases." William S. Bainbridge, M.D., New York.

Discussion by John A. Wyeth, M.D., New York, and Arthur S. Chittenden, M.D., Binghamton.

"Differential Diagnosis of Sarcoma of the Long Bones, Lantern Slide Demonstrations," William B. Coley, M.D., New York.

Discussion by Joseph P. Creveling, M.D., Auburn, John A. Wyeth, M.D., New York, Nathan Jacobson, M.D., Syracuse.

Wednesday, April 30th.

9 A. M.

JOINT SESSION OF THE SECTION ON SURGERY WITH THE
SECTION ON MEDICINE.

SYMPOSIUM ON DUODENAL ULCER.

"Etiology and Morbid Anatomy," illustrated with lantern slides, Marshall Clinton, M.D., Buffalo.

"Diagnosis and Prognosis," James T. Pilcher, M.D., Brooklyn.

"Complications," John B. Harvie, M.D., Troy.

"Non-Surgical Treatment," Charles G. Stockton, M.D., Buffalo.

"Surgical Treatment," John B. Murphy, M.D., Chicago, Ill., by invitation.

Discussion for Medical Section by Allen A. Jones, M.D., Buffalo, and Max Einhorn, M.D., New York; for Surgical Section, Robert T. Morris, M.D., and Charles L. Gibson, M.D., New York, followed by a general discussion by William L. Wallace, M. D., and I. H. Levy, M.D., Syracuse, H. L. F. Ziegel, M.D., New York, Carl A. Huber, M.D., Rochester, Louis F. O'Neill, M.D., Auburn, J. B. Bogart, M.D., Brooklyn, William W. Skinner, M.D., Geneva, closed by James T. Pilcher.

2 P. M.

SURGERY OF THE NERVOUS SYSTEM.

"The Present State of Nervous Injection," Otto G. T. Kiliani, M.D., New York.

"Some Conclusions Reached after 30 Years of Brain Surgery," Roswell Park, M.D., Buffalo.

Discussion from the standpoint of the Neurologist, by James W. Putnam, M.D., Buffalo, and Edward B. Angell, M.D., Rochester; from the standpoint of the Surgeon, Charles H. Frazier, M.D., Philadelphia, and Edgar R. McGuire, M.D., Buffalo.

ORTHOPEDIC SURGERY.

"Prognosis in Infantile Paralysis," Wisner R. Townsend, M.D., New York.

"Importance of the Treatment of Weak Feet in Childhood," Brainerd H. Whitbeck, M. D., New York.

Discussion by Charlton Wallace, M.D., New York, and Bernard Bartow, M.D., Buffalo.

"Treatment of Fixed Scoliosis by the Abbott Jacket," Ralph R. Fitch, M.D., and Howard L. Prince, M.D., Rochester.

Discussion by Samuel Kleinberg, M.D., New York, Roland O. Meisenbach, M.D., Buffalo.

Thursday, May 1st.

9 A. M.

GENITO-URINARY SURGERY.

"Surgery of the Prostate," Hugh H. Young, M.D., Baltimore, Md.

Discussion by Frederick Flaherty, M.D., Syracuse, and Edward L. Keyes, M. D., New York.

"Some Aspects in Relation to the Chronic Gonorrhoeic, from the Standpoint of Surgery and Eugenics," James N. VanderVeer, M.D., Albany.

Discussion by Horace L. Leiter, M.D., Syracuse, and E. Wood Ruggles, M.D., Rochester.

"Report of 22 Cases of Tumor of the Bladder and Conclusions as to Appropriate Methods of Treatment," Paul M. Pilcher, M. D., Brooklyn.

Discussion by Edward L. Keyes, Jr., M.D., New York.

"Accidental Bladder Injuries in Hernia Surgery, Based Upon 2,000 Personal Operations," William B. DeGarmo, M.D., New York.

Discussion by Michael M. Lucid, M.D., Cortland.

"Treatment of Large Ventral Hernia by Inversion," Irving S. Haynes, M.D., New York.

Discussion by Owen E. Jones, M.D., Rochester, and Ledra Heazlit, M.D., Auburn.

"Intestinal Obstruction," William D. Johnson, M.D., Batavia.

Discussion by Howard B. Besemer, M.D., Ithaca, and Fred C. Rice, M.D., Ripley.

"X-Ray in Genito-Urinary Surgery," Eugene W. Caldwell, M.D., and Harry M. Imboden, M.D., New York.

Discussion by Clarence E. Coon, M.D., Syracuse.

SECTION ON EYE, EAR, NOSE AND
THROAT.

John E. Weeks, M.D., Chairman, Thomas H. Halsted, M.D., Secretary.

The following papers were read:

Tuesday, April 29th.

2 P. M.

EYE.

"Squint and Its Correction," John J. O'Brien, M.D., Schenectady.

Discussion opened by Julius H. Kevand, M.D., Syracuse.

"Importance of Ophthalmological Examinations in Immigrants," Martin Cohen, M.D., New York.

Discussion by Walter E. Lambert, M.D., Percy Fridenberg, M.D., Charles B. Meding, M.D., and Arnold Knapp, M.D., New York.

"Experiments with the Different Tests of Heterophoria," Lucien Howe, M.D., Buffalo.

Discussion by G. E. Davis, M.D., New York.

"Some Uses of Cyanide of Mercury in Ophthalmology," Charles B. Meding, M.D., New York.

Discussion by Arnold Knapp, M.D., New York, and S. Boyce Craton, M.D., Syracuse.

"Central Scotoma and Blind Spot Anomalies; Their Clinical Significance," Percy Fridenberg, M.D., New York.

Discussion by Lewis A. Coffin, M.D., New York, Lee M. Francis, M.D., Buffalo, and Sidney Yankauer, M.D., New York.

"The Surgical Treatment of High Myopia," Walter E. Lambert, M.D., New York.

Discussion opened by Percy Fridenberg, M.D., New York.

Wednesday, April 30th.

9 A. M.

JOINT SESSION, EYE, EAR, NOSE AND THROAT.

Symposium on the Hypophysis:

"The Physiology of the Hypophysis," Prof. Sutherland Simpson, Ithaca, by invitation.

Discussion by Howard L. Prince, M.D., Rochester.

"Ocular Disturbances of Hypophyseal Diseases," Arnold Knapp, M.D., New York.

Discussion by John E. Weeks, M.D., Cornelius G. Coakley, M.D., New York, and F. W. Marlow, M.D., Syracuse.

"Intra-nasal Approach to the Hypophysis," Lewis A. Coffin, M.D., New York.

Discussion by Edward D. Fisher, M.D., and Thomas J. Harris, M.D., New York.

"An Approach of the Hypophysis through the Anterior Cranial Fossa," Charles T. Frazier, M.D., Philadelphia.

"Demonstration of a Model Illustrating the Technique of the Intra-nasal Operation on the Lachrymal Apparatus," Sidney Yankauer, M.D., New York.

Discussion by Stephen Lutz, M.D., Brooklyn.

"History of a Case of Dacryocystitis presenting several Complications including Orbital Abscess and Optic Neuritis," Albert C. Snell, M.D., Rochester.

Discussion by Walter B. Weidler, M.D., New York, Lee M. Francis, M.D., Buffalo, Arthur J. Bedell, M.D., Albany.

Wednesday, April 30th.

2 P. M.

EAR.

"The Economic and Social Aspect of Deafness," Harold Hays, M.D., New York.

Discussion by Edward B. Dench, M.D., Samuel J. Kopetzky, M.D., Irving W. Voorhees, M.D., New York, and Sargent F. Snow, M.D., Syracuse.

"The Conservative Treatment of Chronic Aural Suppuration," Robert L. Loughran, M.D., New York.

Discussion by Clement F. Theisen, M.D., Albany.

SYMPOSIUM ON LABYRINTHITIS

"Serous and Suppurative Labyrinthitis, Differential Diagnosis," Irving W. Voorhees, M.D., New York.

"Indications for Operative Interference in Labyrinthitis," Frederick Whiting, M.D., New York.

"Technique of the Labyrinth Operation," Edward B. Dench, M.D., New York.

Discussion by John D. Richards, M.D., New York.

"Tubercular Affections of the Ear," Thomas H. Farrell, M.D., Utica.

Discussion by Moses D. Lederman, M.D., Arthur B. Duel, M.D., New York, E. E. Hinman, M.D., Clement F. Theisen, M.D., Albany, John S. Kirkendall, M.D., Ithaca, and John Kepke, Brooklyn.

"Operative Findings and Results in a Few Cases of Acute and Chronic Mastoiditis," J. M. Ingersoll, M.D., Cleveland, Ohio.

Discussion opened by Wendell C. Phillips, M. D., New York.

Thursday, May 1st.

9 A. M.

NOSE AND THROAT.

"Acute Thyroiditis as a Complication of Acute Tonsillitis," Clement F. Theisen, M.D., Albany.

"Vincent's Angina," Gerhard H. Cocks, M.D., New York.

Discussion by Hubert Arrowsmith, M.D., Brooklyn, John McCoy, M.D., Lewis A. Coffin, M.D., New York, Thomas H. Halsted, M.D., Syracuse, and Nathan D. McDowell, M.D., Rochester.

"Indications for Operation on the Nasal Septum," James F. McCaw, M.D., Watertown.

Discussion by John O. Roe, M.D., Rochester, Lewis A. Coffin, M.D., William W. Carter, M.D., Lee M. Hurd, M.D., New York, and James J. Mooney, M.D., Buffalo.

"Experiences with Direct Laryngoscopy, Bronchoscopy and Esophagoscopy," John McCoy, M.D., New York.

Discussion by Emil Mayer, M.D., New York, and Walter S. Daly, M.D., Ogdensburg.

"Nasal Obstruction as a Predisposing Factor in the Etiology of Tuberculosis," James E. McCambridge, M. D., Poughkeepsie.

Discussion by G. H. Rockwell, M.D., Syracuse.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Tuesday, April 29th.

2 P. M.

William M. Brown, M.D., Chairman. Ross McPherson, M.D., Secretary.

Moved by Dr. Quigley of Rochester, seconded by Dr. Cohen of Buffalo and carried, that the Chair appoint a committee to nominate officers for the section for the ensuing year. The Chair appointed Drs. Brooks H. Wells, E. W. Belknap, and F. C. Goldsborough. Later this nomination was changed to Drs. George W. Kosmak, A. S. Hotaling and F. C. Goldsborough.

The following papers were read:

"The Difficulties in the Diagnosis of Extra-Uterine Pregnancy," Samuel M. Brickner, M.D., New York.

Discussion by E. W. Mulligan, M.D., Rochester; J.

O. Polak, M.D., Brooklyn; E. Gustav Zinke, M.D., Cincinnati; Bernard Cohen, M.D., Buffalo. Closed by Dr. Brickner.

"Two Unusual Cases with Presentation of Specimens," follows: *a.* Full term ectopic gestation; *b.* Teratoma of back in child; *c.* A very long funis, Eugene W. Belknap, M.D., Syracuse.

Discussion by J. K. Quigley, M.D., Rochester; S. M. Brickner, M.D., New York.

"Pituitrin in Obstetrics," James K. Quigley, M.D., Rochester.

Discussion by Ross McPherson, M.D., New York; J. O. Polak, M.D., Brooklyn; W. C. Douglass, M.D., Cohocton; S. M. Brickner, M.D., New York; F. C. Goldsborough, M.D., Buffalo; C. G. Plumb, M.D., Red Creek; A. Cheney Spofford, M.D., Batavia; A. S. Hotaling, M.D., and E. W. Belknap, M.D., Syracuse, and Drs. Armstrong and Woodard. Closed by Dr. Quigley.

"Central Laceration of the Perineum," Albert G. Swift, M.D., Syracuse.

Discussion by C. White Thomas, M.D., and William W. Winans, M.D., Rochester; J. Milton Mabbott, M.D., New York; C. G. Plumb, M.D., Red Creek. Closed by Dr. Swift.

130 present.

Wednesday, April 30th.

9 A. M.

"Cancer of the Uterus, Importance of Early Diagnosis," LeRoy Broun, M.D., New York.

Discussion by Howard W. Longyear, M.D., Detroit; Earl P. Lothrop, M.D., Buffalo; Reuben Peterson, M.D., Ann Arbor; Charles R. Barber, M.D., Rochester. Closed by Dr. Brown.

"Nephrocoloptosis in Women," Howard W. Longyear, M.D., Detroit, Mich., by invitation.

Discussion by James G. Mumford, M.D., Clifton Springs; Earl P. Lothrop, M.D., Buffalo, and LeRoy Broun, M.D., New York. Closed by Dr. Longyear.

"A Critical Review of the Medical and Surgical Treatment of Puerperal Eclampsia," E. Gustav Zinke, M.D., Cincinnati, O.

"Emptying the Uterus as a Method of Treatment of Puerperal Eclampsia," Reuben Peterson, M.D., Ann Arbor, Mich.

Discussion by Franklin S. Newell, M.D., Boston, Mass., and E. P. Davis, M.D., Philadelphia; Ross McPherson, M.D., and Henry D. Furniss, M.D., New York, and Cora B. Latin, Buffalo. Closed by Drs. Zinke and Peterson.

"A Preliminary Report on the Treatment of Toxæmias of Pregnancy with Placental Serum," Abraham J. Rongy, M.D., New York.

175 present.

2 P. M.

The first order of business was the report of the Nominating Committee who reported the following nominations for the ensuing year. For Chairman, Ross McPherson, New York; for Secretary, John Sampson, Albany. On motion duly seconded and carried the Secretary was instructed to cast one ballot for Drs. McPherson and Sampson and this being done the doctors were declared duly elected.

The scientific session was then resumed as follows:

"The Principles Underlying the Successful Treatment of Sterility in Women," Edward Reynolds, M.D., Boston, Mass.

"The Role of Ovarian Disease in the Production of Sterility," George W. Kosmak, M.D., New York.

Discussion by Robert T. Morris, M.D., New York; Edward P. Davis, M.D., Philadelphia; E. Gustav Zinke, M.D., Cincinnati; Howard P. Besemer, M.D., Ithaca. Closed by Drs. Reynolds and Kosmak.

"The Stigmata of Decadence in Gynecology," Robert T. Morris, M.D., New York.

Discussion by Edward P. Davis, M.D., Philadelphia.

and E. Gustav Zinke, M.D., Cincinnati. Closed by Dr. Morris.

"The Need of Individualization in Obstetrics," Franklin S. Newell, M.D., Boston, Mass.

Discussion by E. Gustav Zinke, M.D., Cincinnati; Eugene W. Belknap, M.D., F. C. Goldsborough, M.D., Buffalo. Closed by Dr. Newell.

"Cesarean Section," Asa B. Davis, M.D., New York.

Discussion by Edward P. Davis, M.D., Philadelphia. Angeline Martine, M.D., Utica; Louis F. O'Neill, M.D., Auburn; Francis M. O'Gorman, M.D., Buffalo; George H. Fox, M.D., New York; Eugene W. Belknap, M.D., Syracuse; J. E. Welch, M.D., and Rosalie S. Morton, M.D., New York; E. Gustav Zinke, M.D., Cincinnati; William L. Wallace, M.D., Syracuse. Closed by Dr. Davis.

329 present.

Thursday, May 1st.

9 A. M.

"Dysmenorrhœa," J. Henry Carstens, M.D., Detroit, Mich.

Discussion by Frank F. Dow, M.D., Rochester; Joseph S. Lewis, M.D., Buffalo; George W. McClellan, M.D., Canandaigua. Closed by Dr. Carstens.

"Methods of Minimizing the Mortality and Morbidity in Abdominal Sections for Pelvic Disease," George W. Crile, M.D., Cleveland.

Discussion by James G. Mumford, M.D.; Clifton Springs; J. H. Carstens, M.D., Detroit; Edward W. Mulligan, M.D., Rochester; Bernard Cohen, M.D., Buffalo; V. M. Griswold, M.D., Fredonia. Closed by Dr. Crile.

"Human Serum Treatment for Hemorrhagic Diseases of the New-born," John E. Welch, M.D., New York.

Discussion Eugene W. Belknap, M.D., Syracuse; Ross McPherson, M.D., New York; James R. Torbert, M.D., Boston; George W. Crile, M.D., Cleveland; Dr. Rhodes, Syracuse. Closed by Dr. Welch.

"Efficient Methods in the Treatment of Placenta Prævia," James A. Harrar, M.D., New York.

Discussion by James R. Torbert, M.D., Boston; James K. Quigley, M.D., Rochester; Eugene W. Belknap, M.D., Syracuse; Ross McPherson, M.D., New York. Closed by Dr. Harrar.

Moved by Dr. Cohen, seconded and carried that a motion of thanks be extended to the readers of papers. 206 present.

SECTION ON PEDIATRICS.

Tuesday, April 29th.

2 P. M.

Henry L. K. Shaw, M.D., Chairman, Thomas S. Southworth, M.D., Secretary.

The following papers were read:

"The Wassermann Reaction in Various Conditions in Children," L. Emmett Holt, M.D., New York.

Discussion by Linneaus E. La Fétra, M.D., New York; A. A. Thibaudeau, M.D., Buffalo, and John E. Welch, M.D., New York.

"Pulmonary Tuberculosis in Childhood," Louis C. Ager, M.D., Brooklyn, read by secretary of section.

Discussion by Edward G. Whipple, M.D., Harry J. Brayton, M.D., and Montgomery E. Leary, M.D., Rochester; Matthias Nicoll, M.D., and L. Emmett Holt, M.D., New York.

Discussion on Hemorrhagic Affections in Children," John E. Welch, M.D., New York.

Discussion by Linneaus E. La Fétra, M.D., New York.

"Diphtheria," Joseph R. Culkin, M.D., Rochester.

Discussion by Matthias Nicoll, Jr., M.D., Jerome S. Leopold, M.D., New York, Thomas J. Walsh, M.D., Buffalo, and A. L. Goodman, New York.

"Recurrent Vomiting in Children," A. Clifford Mercer, M.D., Syracuse.

Discussion by George E. Clark, M.D., Skaneateles; Thomas S. Southworth, M.D., New York; Charles L.

Hincher, M.D., Rochester; De Witt H. Sherman, M.D., Buffalo; A. Clifford Mercer, M.D., Syracuse.

"Differential Diagnosis of the Paralyzes Occurring in Early Life," Henry A. Gribbon, M.D., Poughkeepsie.

Discussion by Wisner R. Townsend, M.D., George D. Scott, M.D., and Abraham Jacobi, M.D., New York; Henry A. Gribbon, Poughkeepsie.

The Chair appointed the following Nominating Committee: Drs. Gribbon, Sherman, Vander Bogert, Orchard and La Fetra.

Wednesday, April 30th.

9 A. M.

Presentation for diagnosis and prognosis, a case of Mongolian Idiocy, George T. Imbrie, M.D., Rochester.

Discussion by Charles Herrman, M.D., New York; T. Wood Clark, M.D., and Conway A. Frost, M.D., Utica; Thomas S. Southworth, M.D., New York.

"Use and Abuse of Sugar in the Diet of Children," Elias H. Bartley, M.D., Brooklyn.

Discussion by Philip S. Potter, M.D., Syracuse; Charles Herrman, M.D., New York; G. S. Van Gaasbeek, M.D., Kingston; George N. Jack, M.D., Buffalo, and W. B. Hanbidge, M.D., Ogdensburg.

"Some Observations on Infant Feeding," Harry Rulison, M.D., Albany.

"Infant Feeding with Undiluted Cow's Milk," William B. Hanbidge, M.D., Ogdensburg.

"A Practical Study of Goat's Milk in Infant Feeding as Compared with Cow's Milk," DeWitt H. Sherman, M.D., Buffalo.

"Infant Feeding from a New Standpoint," Godfrey R. Pisek, M.D., New York.

Discussion by Charles R. Witherspoon, M.D., Rochester; J. Roberts Johnson, M.D., Syracuse; George H. Van Gaasbeek, M.D., Kingston; Linneaus E. La Fétra, M.D., and George E. Scott, M.D., New York; T. Wood Clark, M.D., Utica. Closed by Drs. Rulison, Hanbidge and Pisek.

a. Angioneurotic Oedema and Purpura in a Nursing Baby.

b. "X-ray as a Means of Diagnosis in Intussusception," Irving M. Snow, M.D., Buffalo.

Discussion by William H. Sherman, M.D., Buffalo; Henry L. Winter, M.D., New York; Elias H. Bartley, M.D., Brooklyn.

2 P. M.

The first order of business was the report of the Nominating Committee, who reported the following nominations on the ensuing year: For Chairman, Thomas S. Southworth, New York; for Secretary, Joseph Roby, Rochester. On motion duly seconded and carried the Secretary cast one ballot for these gentlemen and they were declared duly elected.

"The Physician and the Mentally Defective Child," Isabelle T. Smart, M.D., New York.

Discussion by Mary Sutton Macy, M.D., Godfrey R. Pisek and Ira S. Wile, M.D., New York.

"Social Pediatrics," Ira S. Wile, M.D., New York.

"Some Neglected Aspects of the Problem of Infant Mortality," Philip Van Ingen, M.D., New York.

Discussion by Linneaus E. La Fétra, M.D., Godfrey R. Pisek, M.D., and George D. Scott, M.D., New York; Joseph Roby, M.D., Rochester.

"Nerves and the Nursing Mother," Conway A. Frost, M.D., Utica.

Discussion by Florence Staunton, M.D., Utica, Cornelia White Thomas, M.D., Rochester, and Ira S. Wile, M.D., and Mary Sutton Macy, M.D., New York; Eliza Mosher, M.D., Brooklyn.

"The Value of Discipline in the Care of the Sick Child," T. Wood Clarke, M.D., Utica.

Discussion by George D. Scott, M.D., New York; Mr. Herbert Weet, Rochester,

Thursday, May 1st.

9 A. M.

"Care of the New Born," Carl G. Leo-Wolf, M.D., Niagara Falls.

Discussion by John A. Ragone, M.D., DeWitt H. Sherman, M.D., Buffalo; Thomas S. Southworth, M.D., New York; Harry L. K. Shaw, M.D., Albany.

"Enuresis and Chronic Digestive Disturbances," Frank vander Bogert, M.D., Schenectady.

Discussion by DeWitt H. Sherman, M.D., Buffalo; Rudolph D. Moffett, M.D., and Charles Hermann, M.D., New York.

"A Plea for the More Frequent use of Lumbar Puncture," Edward J. Wynkoop, M.D., Syracuse.

Discussion by Walter Lester Carr, M.D., New York (absent), read by Acting Secretary; Joseph Roby, M.D., Rochester; T. Wood Clark, M.D., Utica; Edward J. Wyncoop, M.D., Syracuse.

"Studies from the Infants' Summer Hospital," Joseph Roby, M.D., Rochester.

Demonstrated an inexpensive method of capping babies' bottles in hospital.

Demonstrated apparatus for sterilizing water and giving injections of salvarsan.

Combined chart of Infants' Summer Hospital; Nitrogen compression of lung in tuberculosis. Leukæmia treated by benzol.

A case of anorexia nervosa in an infant, Norris G. Orchard, M.D., Rochester.

Discussion by DeWitt H. Sherman, M.D., Buffalo; Joseph Roby, M.D., Rochester.

Dr. Leo-Wolf moved that a vote of thanks be tendered to the retiring officers.

WISNER R. TOWNSEND.

COMMITTEE ON PRIZE ESSAYS.

The Committee on Prize Essays makes the following announcement. The Merrit H. Cash prize will be awarded every two years, beginning with the annual meeting in 1914. It consists of the interest on the fund for the previous year. The awarding of the prize is limited to members of the Medical Society of the State of New York.

The following subjects are suggested:

1. Social Pediatrics.
2. Discuss the subject of Cerebral Hemiplegia, its relation to Arteriosclerosis and the attending complications of diseases of the heart and kidneys.
3. The Significance and Practicability of the Phenolphthalein Test in General Surgery.
4. The Investigation and Care of Industrial Diseases.
5. Give a full description of Poliomyelitis (or cerebro-spinal meningitis), with the present theories of the Etiology, Pathology and Treatment, including the percentage of recoveries in this country and abroad.
6. Discuss the Etiology and Treatment of Pulmonary Thrombosis.

The Committee, however, is of the opinion that in designating these titles it will not prevent essayists from selecting subjects of their own choice.

The essay shall be typewritten, or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope having on the outside the same motto or device, and containing the name and address of the writer. The successful essay shall remain the property of the Society, to be published as they may direct.

The Lucian Howe prize is to be continued each year. It will consist of the interest on the fund for the previous year and will amount to about \$100. The essay must be on some subject connected with ophthalmology. The same rules apply to this as in the Merrit H. Cash Prize.

The essays must be in the hands of the Chairman of the Committee, Dr. Albert VanderVeer, 28 Eagle St., Albany, N. Y., not later than March 1st, 1914.

Dr. ALBERT VANDERVEER, Albany,
Dr. J. F. W. WHITEBECK, Rochester,
Dr. EDWARD D. FISHER, New York,
Committee.

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.

REGULAR MEETING, AT SONYEA, MAY 6, 1913.
BUSINESS SESSION.

The question of illegal practitioners of medicine in the County of Livingston was taken up, but no action was taken by the Society.

Two new members were elected.

SCIENTIFIC SESSION.

"Flat Foot—Causes, Symptomatology, Classification and Differential Diagnosis," Lee A. Whitney, M.D., Rochester.

"Report of Delegate to State Society," Wm. T. Shanahan, M.D., Sonyea.

"Endocarditis in Children," A. H. Paine, M.D., Caledonia.

"History of Blood Pressure," A. L. Shaw, M.D., Sonyea.

"Report of Case," F. J. Bowen, M.D., Mt. Morris.

"Report of Case, Strangulated Inguinal Hernia with Perforative Appendix," F. R. Driesbach, M.D., Dansville.

"Report of Case," E. C. Perry, M.D., Avon.

MEDICAL SOCIETY OF THE COUNTY OF CLINTON.

SEMI-ANNUAL MEETING, TUESDAY, MAY 20, 1913.
SCIENTIFIC PROGRAM.

"Renal Calculosis," W. W. Townsend, M.D., Rutland, Vt.

"Hæmaturia; its Surgical Symptoms and Report of Cases," R. S. McDonald, M.D., Plattsburgh.

"Report of Two Unusual Cases," W. U. Taylor, M.D., Mooers.

"Report of Two Cases of Traumatism of the Uterus," T. J. Cummins, M.D., Plattsburgh.

MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

SEMI-ANNUAL MEETING, AT SALEM, MAY 13, 1913.
BUSINESS SESSION.

The following resolution was presented and unanimously adopted:

"Resolved, That an assessment of \$2.00 per member be collected by the Treasurer for the purpose of giving a luncheon to the members of the Fourth District Branch at the meeting in Fort Edward, October 14th."

A telegram was sent to Governor Sulzer urging him to sign Assembly bill No. 2016, as requested by State Secretary Townsend, in a letter to the Secretary.

SCIENTIFIC SESSION.

"The Physician and Infant Mortality," H. L. K. Shaw, M.D., Albany.

"Practice Building and Maintaining It," F. F. Beattie, M.D., Shushan.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE NARCOTIC DRUG DISEASES AND ALLIED AILMENTS. By George E. Pettey, M.D., Memphis, Tennessee. Member, Memphis and Shelby County Medical Society, Tennessee State Medical Association, American Medical Association, Tri-State Medical Association of Mississippi, Arkansas and Tennessee; also Mississippi Valley Medical Association, and of the American Society for the Study of Alcohol and Narcotic Diseases. Illustrated. Philadelphia: F. A. Davis Company, Publishers. 1913.

THE CATARRHAL AND SUPPURATIVE DISEASES OF THE ACCESSORY SINUSES OF THE NOSE. By ROSS HALL SKILLERN, M.D., Professor of Laryngology, Medical Chirurgical College; Laryngologist to the Rush Hospital; Fellow of the American Laryngological, Rhinological and Otolological Society; Fellow of the New York Academy of Medicine; Member of the Society of German Laryngologists, etc., etc. Philadelphia and London. J. B. Lippincott Company.

TRANSACTIONS OF THE FIFTH INTERNATIONAL SANITARY CONFERENCE OF THE AMERICAN REPUBLICS. Held in Santiago De Chile, November 5 to 11, 1911. Published and distributed under the auspices of the Pan American Union, John Barrett, Director General, Washington, D. C.

SURGERY OF THE EYE. A Hand-book for Students and Practitioners. By ERVIN TÖRÖK, M.D., Surgeon to the New York Ophthalmic and Aural Institute; Ophthalmic Surgeon to Beth Israel Hospital; Consulting Ophthalmologist to the Tarrytown Hospital, and Gerald H. Grout, M.D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Instructor in the Eye Department, Vanderbilt Clinic; Consulting Ophthalmologist to the Bellevue Hospital, First Division. Octavo, 507 pages, with 509 original illustrations, 101 in colors, and 2 colored plates. Cloth, \$4.50, net. Lea & Febiger, Publishers, Philadelphia and New York. 1913.

THE MODERN TREATMENT OF NERVOUS AND MENTAL DISEASES. By American and British authors. Edited by WILLIAM A. WHITE, M.D., Superintendent of the Government Hospital for the Insane, Washington, D. C.; Professor of Nervous and Mental Diseases in the Georgetown University; Professor of Nervous and Mental Diseases in the George Washington University; Lecturer on Mental and Nervous Diseases in the U. S. Army and U. S. Navy Medical School, Washington, D. C., and SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Adjunct Professor of Diseases of the Mind and Nervous System in the Post-Graduate Medical School and Hospital; visiting neurologist to the City Hospital; Consulting Neurologist to the Manhattan State Hospital, New York, N. Y. Volume 1. Illustrated. Lea & Febiger, Philadelphia and New York, 1913.

BOOK REVIEWS.

UROLOGY, THE DISEASES OF THE URINARY TRACT IN MEN AND WOMEN. A Book for Practitioners and Students, by RAMON GUIERAS, M.D. (Harv.), vols. 1 and 2. Prof. Genito-Urinary Surgery, and Vis. Surg. N. Y. Post-Graduate Hosp.; Consult. Surg. City and French Hosps.; Member American Medical Assoc., American and French Urological Associations. With nine hundred and forty-three illustrations in text and seven plates. New York and London. D. Appleton and Company, 1912.

In two well-printed volumes, the diseases of the urinary tract in the male and in the female, and the diseases of the genital organs in the male, are painstakingly discussed to the minutest detail, with special reference to diagnosis and treatment both medical and surgical. Pathology in detail has been intentionally omitted. The chapter on anatomy is unusually comprehensive and elaborate; that on examination of the urine is appropriately so. The necessary office equipment and armamentarium of the urologist and specialist in venereal diseases are given, and the manner of using all the special instruments, whether for diagnosis or for treatment, is carefully described. The advantage of taking an exhaustive history of each case is considered. The chapter on metabolism is another good asset.

In the second part of the work, which is "principally clinical and operative," the detail forecast in the author's preface is adhered to consistently. Aided by a great number of excellent illustrations, the descriptions of the various diagnostic examinations and consequent operations are made graphically clear. The work con-

cludes with a chapter on syphilis and its present-day treatment, including the administration of salvarsan.

The striking feature is the profusion of illustrations. While all are good, some are unnecessary. The legends and the subscribed descriptions are often so complete in themselves as to make the further description in the text a repetition. There are other evidences of repetition, unavoidable in the first edition of a work designed to comprise every contingent attribute of an extensive subject. The work will prove so valuable to the student that a second edition is likely to afford the opportunity to eliminate the repetitions, bring more closely together certain co-related matters, and further amplify the already good index.

PATHFINDERS IN MEDICINE. VICTOR ROBINSON with a Letter from ERNEST HAECKLE and an Introduction by ABRAHAM JACOBI. Medical Review of Reviews, 1912.

"Pathfinders in Medicine," is the work of a young, clever, and brilliant writer, who sometimes rises to heights of poetic diction. No one, with this book at hand, can say that the study of the history of medicine is dry reading. The author has the power of making his subject so interesting, and carries his reader along so easily, that he may be forgiven some slight faults, such as an occasional obscure sentence, or a phrase bordering on the inelegant, as for instance "lip labor." He has taken pains to acquaint himself with the history of the times and the countries in which his pathfinders lived, and by this means has woven a story not only interesting but fascinating. Our author says that "all writing is autobiographical." In his own case, in spite of some effort at concealment, his feelings, passions, and prejudices become apparent. It is a good thing to know that Jenner, who did so much for humanity, and who was made so much of by the crowned heads of Europe, never became a sycophant. But why bring in the name of Whitelaw Reid?

Mr. Robinson never loses a chance of attacking the church whenever any of the old pioneers have come in contact with it, and if the opportunity does not present itself he creates one. In the case of Læncæ, who was not opposed by the church, he mentions that he died peacefully, holding the cross in his hand, then adds "forgetting that the stethoscope had done more for humanity than the crucifix." Of course there is more opportunity and more excuse for attacking the church in the case of Scrvetus or Vasalius than in some others, but the life of Cavendish gives a chance to get at it again. Incidentally it may here be noted that although our author in his sketch of Cavendish the Chemist, starts off by saying, "I defy any biographer to write an interesting sketch of Henry Cavendish," yet that is exactly what he has succeeded in doing.

Mr. Robinson's opinions regarding the church or religion assert themselves so frequently that one is reminded by contrast of Dr. J. J. Walsh's book, "The Makers of Medicine," in which he proved that all the "Makers" were good churchmen, mostly Catholics.

"A plague o' both the houses," said Mercurio, and the reviewer repeats it. Nevertheless it will be a pleasure to read a second series of the "Pathfinders," and without doubt our author will exercise more and more that greatest thing in art,—restraint.

PETER SCOTT.

DEATHS.

ARTHUR S. CAPRON, M.D., Albany, died April, 1913.

BYRON CLIFFORD CHEESEMAN, M.D., Watertown, died April 3, 1913.

CHARLES HUNTOON KNIGHT, M.D., New York City, died May, 1913.

EDMUND A. REILLY, M.D., Elmira, died April 29, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

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JULY, 1913

No. 7

EDITORIAL DEPARTMENT

MILK FOR SALE.

SAY doc! I would like to know what in the world the Health Department is going to do next." This familiar appellation and inquisitive interrogation was addressed to me by a retail grocer. Judging from the critical intonation in the concluding syllable, he did not appear to be in perfect accord with the Department's regulations regarding the sale of milk. The owner of a small general grocery store in a congested neighborhood of which milk was one of the commodities, was disturbed over the adoption of a resolution formulated by the Department of Health, to protect from contamination by human agencies and by dust, dirt and flies, etc., in grocery stores in the City of New York, milk sold by dipping from cans. The resolution in effect read as follows:

"Resolved, That after June 1, 1913, the sale of milk dipped from cans will be permitted only in milk stores approved by the Department and for which a permit will be issued, or in places in which foodstuffs other than milk products are sold in original packages."

This regulation raised a veritable tempest in a milk can.

The Milk Supply of New York City and Its Control by the Department of Health.

Certified Milk—Milk Commissioner of the Medical Society of the County of Kings.

The inquiry of the irate grocer led me to investigate the matter. I have done so. Thanks to him I now know more about milk than when it was my sole, soul-satisfying infantile delight. Like many others I have been interested in the milk purity problem, but in an apathetic way. I have read about it in journals, dozed quietly at the medical society meetings while the reader of the paper went into the minutiae of the proportional elements, food values, calories, mathematical calculations of its modifications for use by infants—to be awakened by the applause in commendation of the paper in which I would join consoling myself with the thought that the Department of Health and the pediatricists would see to it that our milky-way would always be of stellar purity. I take it for granted that many of you have given this matter the serious attention it deserves, but for the benefit of others, who have not, I will tell, instructively enough to merit your attention, some of the practical knowledge I obtained regarding the sale of milk in New York City.

The marvelously lessened death rate from intestinal diseases of children and from typhoid fever in New York City is undoubtedly due

Weekly Bulletins of the Department of Health. Nos. IV, XV, XVIIII.

Report of the Milk Dealers Association of New York City.

to the efficiency of our Health Department in its control over the purity of the milk supplied to the consumers. The manner of procuring this purity would require a lengthy description. Suffice it for me to explain the three principal grades of milk in common use, in what manner they differ, and the manner in which, under the rules and regulations of the Health Department, they are placed upon the market.

GRADE A.—Suitable for infants and children, is sold only in bottles, the caps of which must be marked "Grade A." This grade is of the greatest purity possible. Unfortunately its cost prevents its general use by the poor. It has several divisions seemingly unnecessary and certainly confusing, but herein explained.

First.—Certified milk is that which has been examined by the Milk Commission appointed by the respective county medical societies. These commissions employ a bacteriologist, and dairy inspector who personally visit the dairy farms. The commission is self-supporting through its certificates paid for by the milk dealers. This milk must have every characteristic of pure, clean, fresh, wholesome cow's milk. The milk must be in its natural state, not having been heated and without the addition of coloring matter or preservatives. Nothing must be added to the milk and nothing taken away. It must contain no less than 4 per cent. of butter fat and must not contain on an average, more than 10,000 bacteria per c.c. when delivered to the consumer. Samples must be examined at least once a week.

Second.—Guaranteed milk is milk examined by the milk inspectors of the Department of Health, and not by the representative of the milk commission appointed by the county society. It differs in no wise from certified milk. Its division is unnecessary and confusing, for the sake of simplicity and clearness should be kept from the list.

Third.—Inspected milk, raw, differs from the two above in that it may contain an average of 60,000 bacteria per c.c., and has a

slightly lower official score of the farm at which the milk is produced.

Fourth.—Selected milk, pasteurized. The farm at which this milk is produced must obtain at least 60 points in an official score of the Department of Health. All milk of this grade shall be pasteurized and contain not more than an average of 50,000 bacteria per c.c. when delivered to the consumer. No milk containing an excess of 200,000 bacteria per c.c. shall be pasteurized and remain in this grade.

Milk in the division of grade A must be from cows which *have not reacted to a diagnostic injection of tuberculin*. This is not required of the fourth division, therefore, it should be assigned to Grade B where it belongs.

GRADE B, for Adults.—This grade may be sold in bottles and cans, and comprises pasteurized and selected milk, raw.

Selected Milk, Raw.—The cows in this grade do not receive the diagnostic injection of tuberculin, but are admitted as having been physically examined by a regularly qualified veterinarian and declared by him to be healthy and free from tuberculosis as far as a physical examination may determine the fact. The farms must obtain a 68 score point. The milk shall not contain an excessive number of bacteria when delivered to the consumer or prior thereto.

Pasteurized Milk.—The milk after pasteurization must be at once cooled and placed in a sterilized container and the container immediately closed. No milk shall be pasteurized more than once. No milk containing an excessive number of bacteria may be sterilized.

GRADE C is milk not conforming to the requirements of the subdivisions of grade A and grade B. The caps of all bottles containing grade C shall be white and shall contain in red the words "Grade C" in large type, or other coloring in plainly visible type. This is the poorest quality of milk recognized. But small quantities of it are now marketed, and it is hoped that it will soon be removed from

the list and dispensed with altogether and that there will be but two grades recognized—grade A and grade B.

The tentative new regulations permitting loose or dipped milk to be sold in milk stores approved by the Department have many phases worthy of consideration both from the basic principles of health and economics. There are undoubtedly many grocery and delicatessen stores which scrupulously observe all the sanitary laws in the preservation and dispensation of loose milk, and conscientiously observe the rules of the Department. We can see no objection to permission being granted to these stores to sell loose milk; but take for example the small stores in the poor and congested neighborhoods, where the front room, small in space, is used as a store in which meat, fish, fruits and vegetables subject to decomposition and putrefaction are in close proximity to the milk cans. The living rooms, two or three in number, usually occupied by the family, lead into this store. The children, when half-grown, on occasions wait upon the customers. They have no sense of the importance of their performance and will necessarily be more or less careless. The same children attend school and may at any time return home ill with some infectious or contagious disease, or they or some other member of the family may have some unrecognized disease and continue to dispense articles of food. Many of the commodities such as cakes, meats, fruits, candies and vegetables attract flies. The dust and other deleterious substances infect the milk dippers and containers. It is but necessary to enter one of these shops to observe the slovenly and dirty appearance of some of the shopkeepers, who in their personality ignore hygienic laws. On the contrary, in milk stores the importance of their responsibility is a constant reminder of the necessity of cleanliness. The store in which articles are sold in original packages can, with care, be kept clean and sound.

What are the objections urged against this regulation? The strongest one is the increased cost of milk to the poor who are the chief customers of the small stores. It is not certain that such would be a fact. The increased amount of milk sold in these selected

stores would enable the proprietors to sell at a minimum price. Another objection urged is the hardship through loss of trade to the retail grocer. It is a well known fact that there is no profit in milk; that it is sold chiefly as an accommodation and as a lure for customers who desire to make all their purchases in one store. Some other staple article of consumption in which there would lie no dangers of contamination can take the place of milk as a reduced price attraction. In all the large cities where milk is by law dispensed in bottles, there was at first a great outcry against the alleged discrimination and the complaints of hardships which would occur to the small storekeepers, as well as the increased price of milk to the poor. It is now recognized that these charges were not well founded. The small increase in cost was compensated for by lessened opportunity of infection in the bottle at the home of the consumer, who furthermore received all the nutritious constituents of the milk, particularly the butter fat which is always variable in quantity when haphazardly dipped from the can.

In reviewing this subject I was struck with the many evolutions and revolutionary changes in the Department's regulations.

To meet the Department's demands the dairy farmers were compelled to make large financial expenditures. This crusade of the Health Department touching every incident of the milk industry, resulted in the formation of a Milk Dealers' Association of New York City, which had for its object the protection of its members and everything connected with economics in the production of pure and wholesome milk. It has a well organized educational bureau which distributes circulars and placards containing instruction (in different languages) how to prevent milk contamination in the household. Its aims and efforts are worthy of praise although inferentially its formation might be considered antagonistic to the Department's activity. On the contrary, the two have worked in the utmost harmony. The conference between Health Commissioner Lederle and the Milk Dealers' Association was mutually instructive, and the concessions on both sides were complimentary to the judicial fairness of both. But what the public and the profession demand is a pure milk within the reach of the poor.

Original Articles

THE PRESENT STATUS OF CESAREAN SECTION.*

By EDWARD P. DAVIS, M.D.,
PHILADELPHIA, PA.

THE rapid development of obstetric surgery has carried Cesarean section through its first phase of technical achievement, and has placed at the disposal of operators a number of successful methods. In common with other developments in surgery these methods are designed to overcome the inherent dangers of the operation. With other operations in obstetrics and gynecology, in some cases the operator has the choice of the abdominal or vaginal route.

Vaginal Cesarean section is obviously unsuitable for cases where disproportion between mother and child, from pelvic contraction or fetal overgrowth, is present. It is especially well adapted to overcome the resistance of the cervix in the most rapid and accurate manner possible, and its greatest success is obtained in cases where the fetus is premature or ill-developed.

The advantages of this method of operating are the avoidance of opening the peritoneum, the lessened tendency to shock, and the fact that an experienced operator with few assistants can perform the operation in a private house.

The disadvantages of the operation are the fact that the exact size of the fetal head cannot be previously ascertained, and that during delivery laceration may occur, opening the peritoneal cavity and producing severe bleeding. Incision in these cases is carried through a portion of the genital tract, which in blood vessels and lymphatics invites the development of septic infection.

Vaginal Cesarean section is chiefly used at present in the treatment of eclampsia where rapid delivery is selected, and less often in the treatment of accidental separation of the normally implanted placenta. In good hands its maternal mortality compares favorably with other operations, while the nature of the cases in which it is employed results in a high fetal mortality.

In delivery by abdominal section the maternal dangers from the operation are primarily septic infection and hemorrhage; secondarily, the bursting of the uterine or abdominal incision, the formation of adhesions between the uterus, peritoneum and other viscera, the risks of anesthesia, and the occasional development of thrombosis and embolism. The operation itself has a low mortality and morbidity rate from shock.

Abundant clinical experience and laboratory research confirmed by experiment, show that the

primary danger from infection arises from the escape of the contents of the uterus into the peritoneum. In cases where the membranes have long been ruptured the amniotic liquid is usually infected, and this may infect the peritoneum at operation. Infection may also arise from faulty aseptic technique, which in well-appointed hospitals is largely obviated. Hemorrhage arises when the uterine muscle is so relaxed or diseased that it fails to adequately contract, when the uterus is imperfectly or improperly sutured, and when the uterine stitches become loosened or give way.

To avoid the danger of infecting the peritoneum from the uterine contents, various methods have been devised. We have heard with great interest and pleasure the account by Dr. Asa B. Davis of his method of incising the uterus in the abdomen while the edges of the abdominal wound are kept in close approximation with the external surface of the uterus. The high incision in the abdomen facilitates this endeavor and lessens the risk of hemorrhage.

The purpose of this operation is to make it essentially extraperitoneal, so far as communication with the peritoneal cavity is concerned. An additional advantage is claimed for this method, that it disturbs the abdominal viscera as little as possible and lessens the tendency to hemorrhage and shock.

In recent years the profession of Germany has revived the effort to open the uterus outside the peritoneum by extraperitoneal section. Among others, the laparœlytrotomy of Thomas has been revived by Döderlein to a considerable extent. Numerous modifications of Frank's original method have appeared, among which is that of Sellheim, whereby the uterine, visceral and parietal peritoneum are sutured, delivery being effected through a peritoneal fistula. This has been tried by Kelly, and with modifications by Hirst.

The purely extraperitoneal section has failed in the hands of German operators, for the peritoneum is frequently opened, and must inevitably be, because the operator cannot foretell the size of the presenting part and cannot accurately gauge the extent of his incision to avoid lacerating the peritoneum. The fact that those who have attempted this method of operating have been obliged to open the peritoneum and produce a peritoneal fistula to make the operation safe, indicates the failure of the original method. Operation through a peritoneal fistula is of too recent origin to permit an exact appreciation of its value.

The majority of operators do not attempt extraperitoneal section, but are careful to practice extraperitoneal and extra-abdominal emptying of the uterus. This accomplishes with a large measure of success the indications to prevent the contamination of the peritoneum by the uterine contents. By this method the abdomen is opened near the umbilicus and the incision

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

prolonged in either direction sufficiently to permit the turning out of the uterus. While an assistant raises the womb the operator carefully protects the omentum and intestine by large, soft, gauze pads wrung out of hot sterile salt solution. The abdomen is completely closed from the entrance of uterine contents. If the foot of the table be raised moderately, and the uterus be turned slightly to one side, the contents of the uterus can be extracted without soiling the peritoneum in any appreciable degree. Whether the uterus is to be retained, amputated, or extirpated, the risk of contamination from its contents is reduced to a minimum. If the uterus is to be retained, it is accurately closed by silk suture through the muscle, supplemented by a continuous peritoneal suture, the anterior surface of the uterus thoroughly cleansed by salt solution, and the uterus replaced in the abdominal cavity and covered by mesentery. The suture of the peritoneum, followed by that of the muscle, closes the abdomen.

The danger from hemorrhage in all forms of abdominal delivery is obviated by the use of freshly boiled silk to ligate the muscle and vessels, supplemented by the covering of all vessels by peritoneum.

The danger of rupture of the uterine and abdominal incision, following section, is obviated by the employment of silk to close the uterine muscle, and by a firm and competent retentive dressing on the abdomen. For the latter, broad strips of adhesive plaster, overlapping at the edges, have proven satisfactory; in one of my cases complicated by bronchitis, the stitches were removed on the tenth day from the abdominal wound, which was healed. The resident physician who dressed the case did not follow his orders, and substituted an insufficient tape dressing for the broad adhesive strips usually employed. In a fit of violent coughing the patient burst the abdominal wound, forcing the intestines out beneath the dressing. These were immediately replaced and the wound brought together, followed by an uninterrupted convalescence.

^No practical method exists by which adhesions between the lines of suture in the uterus and peritoneum and the surrounding viscera can be absolutely prevented. In no case, in my experience, has such an adhesion been serious in its results nor especially detrimental to the patient.

^When one considers that many deliveries by abdominal section are emergencies performed upon patients without previous preparation, the dangers from anesthesia and shock are remarkably little.

The technique of delivery only has become a familiar matter to modern obstetricians, but important problems still await solution in other branches of this important subject. Perhaps chief among these is the question, "What shall

be done in cases where we suspect that the uterus at the time of operation is already infected?"

There is abundant evidence to show that the birth canal in apparently healthy individuals contains bacteria capable of becoming pathogenic in prolonged labor. Attempted delivery by forceps, repeated vaginal examinations demanding the use of dilating bags, the replacement of the cord, frequent vaginal douching, and manipulation of any sort during prolonged labor, must inevitably change innocent to pathogenic bacteria and result in infection.

How can the obstetrician called to perform delivery by abdominal section deal with this condition successfully?

The rule should be strictly made and followed that all cases subjected before operation to attempts at delivery or to frequent manipulation, must be considered as suspected cases. Where we know the training and habits of the practitioner who has had the patient in charge, the knowledge that he is intelligent and faithful in antiseptic precautions may take the case from the category of infected cases and place it among those of suspected cases; but where patients have been maltreated by practitioners, the case must be considered as practically infected. Another element of importance is the mechanical injury done to the uterus before section. In my experience, the blade of the obstetric forceps has been thrust through the uterus into the abdominal cavity in two cases by practitioners who attempted to apply the forceps. The uterus has been completely or partially ruptured in others. The bases of the broad ligaments and the tissues surrounding them have been repeatedly found infiltrated, and to some extent lacerated. In such cases, where attempts at delivery have been made without adequate antiseptic precautions, the case must be considered as infected. In suspected cases the obstetrician must endeavor to save the uterus if possible. The age of the woman, and the question as to whether she has a living child, must be taken into account. In a multipara 40 years of age or older, it may be entirely proper to remove the uterus for the safety of the mother. In a young woman in her first confinement, or with but one child, in a suspected case the effort to retain the uterus is imperative. From my experience if the uterus be thoroughly irrigated with hot salt solution and packed with 10 per cent. iodoform gauze, such suspected cases result satisfactorily. The vagina must be thoroughly sponged out with bichloride solution and packed with bichloride gauze. By this method good results have been obtained.

When infection is undoubtedly present we have had excellent results with the Porro operation. The ovarian arteries and the arteries of the round ligaments are separately tied, a narrow clamp made for the purpose tightened across the lower uterine segment, the uterus amputated above the clamp, the remaining portion of

the uterine lining above the clamp is disinfected with carbolic acid and alcohol, and the peritoneum is closed around the stump. The cut edges of the stump are powdered with iodoform and tannic acid. While convalescence is necessarily slow, the results have been in our hands excellent.

Another problem demanding attention in Cesarean section is the question of sterilizing the patient. In clean cases where husband and wife request this, we prefer hysterectomy, retaining one or both ovaries, covering the stump with peritoneum, and dropping it into the abdominal cavity. If the condition of the patient permits, the appendix may also be removed. The abdomen is closed without drainage; another method of sterilization which has proved efficient consists in excising the Fallopian tubes at the uterine cornu, removing entirely the uterine extremities of the tubes by a V-shaped incision, and adding to this removal an inch of the tube itself. The cut edges remaining are closed by continuous catgut.

It has been abundantly demonstrated that ligation of the tubes, or resection of a portion of the tube in its continuity, are inefficient.

The tendency of modern obstetric surgery is to make delivery by abdominal incision, if possible, elective. The patient must be spared the ordeal of labor, and a suitable and advantageous time selected. Experience shows that but little dilatation of the cervix is required to drain the lochial discharge, and in my experience, should the cervix be narrow, a finger may be passed through from above when the uterus is opened, and a strand of gauze from the uterine cavity left for drainage forty-eight hours. Many think the use of gauze drainage in such cases is unnecessary. In cases where some physical condition of the patient makes labor dangerous, as in thyroid toxemia, heart lesions, great nervous depression, elective labor becomes to the patient a great boon, and lessens considerably her risks.

A most important advantage in delivery by abdominal section accompanied by eventration of the uterus, lies in the fact that the operator can adequately determine the exact condition of the pelvic viscera. He may find a uterus whose substance is so altered by pathological changes that its retention is inadvisable. Multiple fibromata of the uterus are often not detected until section is performed. The existence of a pelvic tumor, or of salpingitis, may first be revealed at section. An appendix adherent to the broad ligament may also be first diagnosed when seen.

Another advantage of elective abdominal section is strikingly seen in cases where labor does not develop normally, but where it is practically impossible to find the cause for the abnormality. Thus, in two cases in my experience, in primiparæ older than the average, the pelvis was ample, the general vigor of the patient normal, the mental and nervous condition normal, and yet

the termination of the usual period of pregnancy brought no labor. Finally, inefficient and fugitive pains developed, which produced great anxiety and depression, with failing strength. Elective section was practised in each instance, when the uterus was found the site of small multiple fibroids, so embedded in the mucular tissue that they could not be recognized by physical examination before operation. Fortunately, the anterior uterine wall afforded sufficient healthy tissue to permit the suture and retention of the uterus, as both patients earnestly desired more than one child. In each case uninterrupted recovery followed the operation.

When we remember that the induction of labor in a uterus with pathological muscle is a difficult and dangerous procedure, we can see the advantage of treating these cases by surgical means. The method of operating chosen for abdominal delivery may sometimes be utilized to cure a permanent lesion of the generative tract. I have recently had occasion to perform the Porro operation upon a multipara who had suffered for years from prolapse and retroversion, for which she declined operation. She had been accustomed to retain the uterus in position by stuffing cotton into the vagina. Her last pregnancy was declared by her husband and herself to be the last, and they accepted delivery by abdominal section at term without labor, by the Porro operation, because the stump thus left in the lower end of the abdominal incision would effectually prevent prolapse of the pelvic tissues. This it has done completely and the patient is in good health.

The decision to retain one or both ovaries in delivery by abdominal section must depend upon the age of the patient and the condition of the ovaries and tubes. It is rarely necessary to sacrifice both ovaries, and if choice is to be made the left should be preserved, while the right ovary and tube and appendix should be removed. Experience shows that inflammation and adhesions of these organs are not uncommon.

We are especially interested in the application of delivery by abdominal section to placenta prævia and accidental separation of the normally implanted placenta. Placenta prævia, to my mind, is an ectopic pregnancy, quite as dangerous as tubal or other intra-abdominal pregnancy, and to be treated by surgical means only. As experience increases in this direction, we find that results are more satisfactory than by any other method of treatment. Such cases are as much hospital cases as tubal and other extrauterine gestations, and in hospital treatment by section, give excellent results. Personally, I have had 13 abdominal deliveries for placenta prævia and placental separation, with the recovery of all the mothers. All of these were suffering from the results of hemorrhage, and 3 of them were apparently dying and greatly exsanguinated.

The usual operation has been the classic sec-

tion with gauze packing, saline transfusion into a vein being given at the same time, and other methods of stimulation freely employed. It is interesting to observe how completely hemorrhage ceases so soon as the uterus is empty, and how thoroughly gauze packing prevents the post-partum hemorrhage which often follows the removal of the placenta through the vagina in cases of placenta prævia.

For the general practitioner confronted in a private house with a case of placenta prævia which cannot be brought to hospital, the Braxton-Hicks version, using the fetus as a plug and disregarding fetal life, remains the safest and most efficient treatment.

In our cases of delivery by section those children that were in good condition at the time of operation have survived. The fetal mortality, however, must always be high in these cases.

The question may arise, "Where does the general practitioner come in, in discussing the question of delivery by abdominal section?" We may reply to this, that he comes into this question exactly as he comes into the question of the treatment of appendicitis, ovarian tumor, uterine fibroid, and ectopic pregnancy. He should be able to make a diagnosis of the most common abnormalities in obstetrics, and of the great and vital dangers to child-bearing women. In the interests of his patients, and for his own reputation and future practice, he should secure for complicated obstetric cases the same careful surgical attention given to appendicitis, ovarian tumor, uterine fibroids, and ectopic gestation.

May I be permitted to give briefly the results of my experience in abdominal delivery in figures?

Up to the present time I have operated upon 103 women in good general condition, and apparently uninfected, by various forms of abdominal delivery.

Case No. 33, of this series, died, and autopsy showed a general peritoneal infection with the bacillus proteus vulgaris. We have never ascertained how this germ gained access to the peritoneum, for we immediately made bacteriological tests of our suture material, sterilized dressings and apparatus in general, but without a clue.

The remaining series of 70 cases in good condition have recovered without maternal death. No infant at term, in good condition, in this series, has been lost, the fetal mortality rate from the operation being practically nil. The mortality rate of the 103 cases, namely one patient, is .97 of 1 per cent.

Thirty patients infected by various forms of disease, including puerperal infection, bronchopneumonia, and virulent toxemia, have been treated by abdominal delivery with 10 deaths, or a mortality of 33⅓ per cent. The fetal mortality in this series was considerable, as most of the children were dead or dying when the patients were brought to hospital.

It is interesting to note that the patients among this series who recovered, were a series of 20 cases of puerperal infection treated by the Porro operation.

Abdominal delivery was also performed upon two patients, one dead, the other dying; these being post-mortem sections. The total number of cases was 135, maternal mortality of entire series 8 per cent.

As regards the various forms of operation chosen for these patients, there were 79 classic Cæsarean sections, 34 hysterectomies with intrapelvic treatment of the stump, 20 Porro operations, and 2 post-mortem deliveries by incision; 13 cases of placenta prævia and placental separation with hemorrhage of greater or less severity; some of them exsanguinated, were treated by abdominal delivery, with no maternal death.

So far as mortality and morbidity were concerned, the different methods employed gave equally good results.

These operations were undertaken for indications now recognized by the majority of obstetricians, contracted pelvis, disproportion between mother and child, eclampsia, threatened uterine rupture, labor complicated by pelvic tumor and physiological incompetence for labor.

THE PROBLEM OF CARING FOR THE DEFECTIVES.*

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THIS article is intended simply as a brief conservative summary of the subject of defectiveness and degeneracy in general with a broad outline of treatment and not as an exhaustive treatise. It is presented as a plea to endeavor to prevent some defectiveness at its source rather than waiting helplessly to care for the end product.

Feeble-mindedness may be defined as a mental state which has never reached the normal level. Insanity, on the contrary, is a mental state which has changed as the result of various influences acting upon it so that the individual thus afflicted feels, thinks and acts in an abnormal manner. Epilepsy is a chronic progressive disorder characterized by recurrent abrupt attacks of loss or impairment of consciousness with or without convulsions, and as a rule, accompanied by mental and oftentimes physical deterioration. These three conditions as well as inebriety, criminalistic tendencies, vagrancy, prostitution and pauperism frequently go hand in hand in members of the same family. Many of these states have been recognized since a remote period in the world's history, but only recently has there arisen a due recognition of the importance of their influence upon the social world.

* Read before the Medical Society of the County of Allegany, at Cuba, April 10, 1913.

Persons who have given much study to the matter have arrived at the conclusion that from two or three per cent. of the general population in this country are defective or disordered mentally. Taking the lowest percentage mentioned, you can realize that in the State of New York this would mean that at least 200,000 persons are unfit to assume a normal place in the community. It has been determined that 30 per cent. or more, of the inmates of our various reformatories and prisons are mentally defective. What a farce it is to attempt to reform an individual who is absolutely irresponsible in consequence of a mental impairment, the result either of an incomplete development of his brain or the destruction of a portion of the brain essential for a normal development.

Rosanoff and Orr state that it has been estimated that about 30 per cent. of the general population, without being actually neuropathic, carry the neuropathic taint from their ancestors and are capable under certain conditions of transmitting this taint to their progeny.

Conservative estimates made in England give the proportion of feeble-minded as 1 to 248 of the general population and of insane 1 to 273 of the general population. In the United States the proportion in all probability does not differ materially from that in England, although one must ever bear in mind that the personal equation of the individual compiling the statistics has to be given consideration. In consequence of this personal equation entering into this matter, statistics, as you know, sometimes vary to a marked extent. Allowing however, for this variability and considering the subject from a most conservative viewpoint, one must realize that in his own community at least one to every three hundred members of that community is defective and that if tests could be applied to every member of the community there would be found a much larger proportion than that given. Pause for a moment and think what this defectiveness means in the relations of such individuals with those about them.

This large number of defectives in our midst brings up the question as to how many annually gain entrance to the country as immigrants. Any one who has visited Ellis Island, the principal gateway, and witnessed several thousand immigrants pass inspection in one day must realize that with the meager opportunities afforded for properly examining these immigrants a very considerable number of feeble-minded, epileptic, insane, criminals, etc., enter undetected, and New York State has to ultimately care for a large proportion of them.

In 1912, there were in the state and private hospitals for the insane in New York State over 34,000 patients, in the institutions for feeble-minded and epileptic 6,000, and in the various prisons, jails, reformatories over 14,000, making in all over 54,000. Allowing that there are 200,000 defectives in the state, one naturally asks

where are the other 146,000 and what are they doing. It is true that some of the remainder are fortunate enough to have relatives who give them careful oversight, protecting them from themselves and from the community and also protecting the community from their irresponsible acts. Unfortunately, however, the majority of such defectives are not under the careful supervision of their family or an institution, but are permitted to follow their own inclinations and as a rule, sooner or later, get into various difficulties, many of them exceedingly serious in nature, not only for themselves, but for those about them. Furthermore, one must ever bear in mind that these defectives are found in all races and among all classes of people, in the rural and urban community, at all ages and among the rich as well as the poor.

Formerly there was a certain amount of confusion as the result of various terms applied to feeble-mindedness and its different degrees. In consequence of this a few years ago those working with the feeble-minded in America decided upon a new classification, using the general term feeble-minded to include all of those individuals who had never reached the normal stage of mental development for their physical age, and making as subdivisions morons, imbeciles and idiots. The idiot may be defined as an individual who has never passed beyond the mental age of two years, and in consequence, is unable to protect himself from ordinary dangers or care for himself, the imbecile one who has never developed beyond the mental age of seven years, and consequently unable to gain a living, the moron one who has reached a mental development corresponding with a child from seven to 12 years of age mentally, and who can under the most favorable conditions maintain himself, but has not the stability of a normal adult.

Among those who apparently are of the mental age of twelve years or thereabouts, it is very apparent that there are a considerable number who approach closely the margin of a normal mental state but who could not be called normal, and to such the term borderland or borderline cases would apply.

To further characterize and distinguish particular classes of the feeble-minded, special reference to some physical defect or other accompanying condition has been made use of, *e. g.* Mongolian imbecile, meaning an individual who is mentally between the age of two and seven years and who shows the characteristic signs of a broad-fissured tongue, obliquely-placed eyes, a short little finger; the epileptic idiot, or imbecile or moron being one in whom the symptoms of epilepsy are present as well as the state of mental defectiveness; the microcephalic idiot is one with a small head, and macrocephalic one with a large head, etc.

Congenital feeble-mindedness as differentiated from acquired feeble-mindedness are terms self-explanatory. The cretin is an individual in

whom there is a faulty development because of an insufficient functioning of the thyroid gland beyond the stage usually found in the very young child.

The epileptics may be subdivided into that appearing in early life, including over 80 per cent. of all such patients, and that appearing late in life; the idiopathic or the class in whom the cause cannot be ascertained; classified as to seizures, the grand mal or severe, the petit mal or mild, the complete, the incomplete, the abortive, the Jacksonian in which type the convulsions are not accompanied by loss of consciousness; the psychic in whom there is a disturbance of the mind without the accompanying convulsions, etc. There may be any degree of combinations of these various types of epilepsy, these combinations varying from time to time, depending on the type of seizures to which epileptic may be subject. Those who have had experience are agreed that these varieties are almost endless. The classification of insanity and its symptomatology cannot be referred to in a paper of this kind as time will not permit.

It must be remembered in connection with alcoholism that persons are differently constituted in regard to the effect that alcohol produces on them. One person may with seeming impunity consume large quantities of alcohol over a period of many years without apparent serious results. In another person, appearing to be quite healthy, the continued use of a quantity of alcohol exhibits a marked deleterious effect. It has been advanced by students of the subject that the majority of inebriates are not such solely from the use of the alcohol, but are predisposed as the result of a hereditary mental defect to become victims of the alcoholic habit. Without going into the symptoms of chronic alcoholism in detail, I would state, that there is a dulling of the mental faculties of the individual and accompanying this, there is naturally a marked lowering of the moral tone, so that such persons become more or less irresponsible for their actions and are not to be relied upon. Eventually many of them suffer such a marked degree of mental impairment that it becomes necessary to place them under close and constant supervision.

It is the rule of human life to have the normal individual develop until a complete stage is reached, at about the age of thirty years and almost immediately thereafter a gradual decline to begin, this decline progressing steadily for three or four decades without producing any untoward symptoms. In certain abnormal or defective people this normal stage of involution brings about the appearance of certain symptoms, among which are those perhaps of a disturbed mental state, or perhaps convulsive attacks.

Another class of people somewhat along this same line are those in whom what might be termed normal senile changes, instead of grad-

ually occurring and bringing about a readjustment of the individual's general condition at the usual period in life, appear much earlier than in the normal individual.

The causes of degeneracy are many diverse deleterious influences occurring in the antenatal or the postnatal period, or in both. These causes may be divided into those which pave the way, but in themselves, may not bring to light the defective state, these being known as predisposing and added to these potential factors are what are known as exciting factors, that is, causes which affect the individual in such a manner as to bring to light the symptoms of the defective condition. What in one person may be a predisposing cause may in another be an exciting cause, and again a predisposing cause long continued may eventually act as an exciting cause.

Among the active predisposing causes is one, which has much greater influence than is ordinarily thought for by the layman, and upon which I wish to lay as much stress as is possible, and that is heredity. Among the conditions presented in ancestors, which seem especially to influence the descendants are feeble-mindedness, insanity, alcoholism, epilepsy, syphilis, etc. Numerous theories have been evolved, especially in recent years, in regard to the laws of heredity. Some fifty years ago Gregor Mendel, a monk in Austria, made certain experiments with peas and traced out through many generations the appearance of color, height, etc. Of recent years it has been found that apparently so far as studies have gone that some of these Mendelian laws may apply to the human family.

The cell from which the human individual develops is made up of two parts, the germ cell which has to do with the carrying on of the race, and the soma which has to do with the development of the particular individual of the race. At the present day, it is thought by many that the germ cell is passed on from one individual to its offspring and so on indefinitely through succeeding generations without change, acquired characteristics in an individual not being transmitted to the offspring. Many eminent authorities do not agree with this, but maintain that there are certain influences, *c. g.* alcohol and syphilis, which may affect the germ plasm so that in the succeeding generation its deleterious effects may be observed as a state of defectiveness.

Most writers agree that the soma which develops into the body of an individual member of any one generation may as the result of numerous influences acting upon it vary in its development. It should be borne in mind that a defect in one generation does not necessarily imply that the defect in the preceding generation was exactly the same, there being apparently an interchange in a way between insanity, feeble-mindedness, epilepsy, etc., so that one defect may be, as it were, substituted for another.

Our present knowledge of heredity would lead one to feel that in the feebleminded and epileptic there is lacking some element which must be present in the normal individual to bring about a normal state of development.

It is evident to honest students of heredity that longer continued study is required before enough accurate facts can be presented to support what is now partly theory. The offspring of a union of two plainly mentally defective persons is probably always mentally defective, but when one parent is healthy and of good stock, or both parents are healthy but of neuropathic stock, etc., there must be much further investigation made before what are now but theories can be recognized as laws governing heredity.

Just at this point I wish to impress upon you the fact that if the family stock is healthy the offspring from a consanguineous marriage will be healthy, if the stock is tainted the defect will be intensified.

In ascertaining facts in regard to defective individuals and their families, it is of the utmost importance to have trained field workers, preferably carefully selected physicians, persons who can visit the community in which the afflicted person resides and there investigate all facts in regard to the personal and family history of the person concerned, making inquiry not only of the members of the family but also of their physician, clergyman and any other persons who may be interested or have any knowledge of conditions. These trained investigators should obtain much valuable data, sifting the actual facts from the alleged or coincidental factors in each particular instance, and can also disseminate through the community in which they work practical information relating to the problem under discussion.

With regard to the outcome of these various conditions, it must be confessed that with most defectives one can not look for more than a general improvement. In some, *e. g.* certain types of insanity, there is apparently a recovery, which proves more or less permanent. In others, some epileptics, many of the insane, inebriates, etc., there may be an arrest of the symptoms with a recurrence later. With the feebleminded and the great majority of the epileptic and a considerable number of the insane, no hope can be held forth to bring about a restoration to normal health as in these persons there is a congenital defect or there has been an actual destruction of some essential parts of the brain structure, which cannot be replaced by any work of repair such as occurs in some of the simpler tissues of the body. Many of the insane are discharged from hospitals as recovered, but later have a recurrence of their symptoms and have to be re-committed.

By removing certain exciting factors, either mental, physical or both and making the individual live as simple a life as possible, there may

result a marked improvement in the health of many of the defectives. Dietary and other excesses, the strenuous life of modern civilization often with improper environment, etc., are conditions which must be given earnest and active consideration.

Among a considerable proportion of the insane, the epileptic and others, there is undoubtedly a disturbance of the normal relation between various internal secreting glands, *e. g.* the pituitary body, the thyroid gland, the supra-renal bodies, the pancreas, etc., this resulting in a chemical unbalance and in consequence symptoms of the disorder appear.

In all of these persons, but especially in the insane and epileptic, there is an unstable nervous system, which cannot withstand certain influences as can a normal nervous system.

The actual cause of many of the symptoms occurring in many defectives, such as convulsions, periods of excitement, depressions, etc., are found to be due apparently to causes beyond discovery by our present methods of research and in consequence are often alleged to be due to certain causes which are not the actual causes but are purely coincidental.

There is no question but what if the functions of the gastro-intestinal tract, *e. g.* digestion and absorption, are imperfect that the effect produced upon persons with unstable nervous systems is exceedingly far reaching. The influence of teething as an exciting factor in the epileptic has in my opinion been greatly overdrawn as this is a purely natural process which all of the human race must experience. What is true is that during the age when the first dentition occurs the delicate nervous system is more sensitive to various stimuli than later in life.

The abuse of alcohol, the injuries to the brain after birth, and injuries during birth, paralysis consequent upon encephalitis occurring in infancy or early childhood, syphilis, the various infectious diseases, such as scarlet fever, measles, whooping cough, etc., which may be complicated by meningitis or an inflammation of the brain substance itself, hemorrhages into the brain, arterio-sclerosis appearing early or being unduly marked produce a more or less severe disturbance of nutrition or actual destruction of some of the essential structures of the central nervous system. The male sex in adult years are more subject to the abuse of alcohol, infection with syphilis, the receipt of severe injuries to the head, etc., which factors must be considered in making any statement in regard to the probable outcome in any particular case.

Feeble-mindedness is largely due to congenital causes or the result of certain conditions occurring in early life. Epilepsy is also a disorder of early life, the onset in 80 per cent. of such individuals occurring before 20 years of age. Insanity on the contrary, as a rule, does not make itself apparent before the early adult years and in certain types not until the individual is well

advanced in years. This means the insane have as a rule the opportunity of securing some education, learning a trade, etc., whereas the feeble-minded and epileptic are frequently deprived of such advantages.

All defectives have present, to a greater or lesser extent, various malformations known as stigmata of degeneracy. These alone do not have a very important bearing on the state of the person under consideration, unless associated with other symptoms, both mental and physical. It is a question as to whether any individual is absolutely perfect, depending upon what is recognized as a normal standard.

The various physical deviations from the normal average seen in the different types of defectives are not peculiar to these individuals, except to show that these persons are not of a normal physical make up, but have a fundamental defect. The various injuries received by epileptics during seizures result in scars and deformities in different parts of the body. Paralysis, especially when occurring in early life, interfere markedly with the development of the parts involved.

After death, examinations made of the various structures show that in many there are abnormal conditions apparent to the naked eye, such as defects in the structure of the brain, changes in the heart, especially in the valves, while microscopically there are found numerous destructive changes in the essential cells making up the central nervous system and of many of the internal organs, especially the kidney.

In those mentally afflicted certain symptoms are observed, *e. g.* hallucinations, which are sense perceptions without external stimulation; illusions or perverted sense perceptions and delusions, false ideas which may arise from hallucinations, illusions or other delusions; states of depression or excitement are common conditions but which are much more marked than similar states in the ordinary individual; disorientation or an inability of the individual to locate himself either to time or place; retardation of the mental processes where the activity of the mind is much slower than in the normal person; flight of ideas where the individual changes from one subject to another without having apparently any definite purpose in view, his ideas not being in an orderly arrangement as in the normal person; stupor which may be slight in degree or most profound; impulsions and compulsions which seemingly take hold of the individual and force him to follow out what these ideas suggest; amnesia or a loss of memory of what has transpired during a given period of time, etc.

Dementia, a term often used incorrectly by the layman to characterize any acute mental upset, is a permanent impairment of the mind and may advance to such a degree as to make an individual who has once been exceedingly intelligent pass into condition where he has to be cared for like a new born child.

In epilepsy there may be seen convulsive seizures with loss of consciousness, biting of the tongue, passing of the urine and the receipt of various injuries as the result of falls during these convulsions. There are milder seizures in which there may be no, or but slight, convulsive movements and a very transitory loss or impairment of consciousness. In epilepsy there may be acute attacks of mental confusion or excitement, perhaps to the extent of violence during which the individual may assault those about him especially if interfered with in any manner. Some of these periods, often not recognized as epileptic in nature, are known as automatism and follow the mild seizure, being in fact a part of the same but there are other mental attacks which seem to occur independently of any convulsive seizure, and are then known as psychic seizures or equivalents and may last for days or weeks.

The natural tendency for the epileptic in consequence of a progressive destructive process existing in the brain is toward a gradual mental deterioration, which in some continues to most profound dementia and in others is held in abeyance, perhaps for a long period of years.

Some epileptics are apparently very religious, but do not carry out in practice what they pretend to believe and talk about. Irritability and a tendency toward fault finding is a common characteristic of the epileptic. A loss of memory for the period of the attack be it convulsive or psychic is the rule in the epileptic.

Unrecognized epilepsy, especially that of the mild type, results in great danger to not only the individual but to the community in which he resides, *e. g.*, when this condition is present in motormen, engineers, chauffeurs, barbers, etc. A considerable percentage of the feeble-minded have convulsions in some period of their existence; these then cease and do not recur.

The feeble-minded person has been referred to as an unfinished individual, whose mental state has never reached the normal, while the insane have been described as people who have once been rich and are now poor. The feeble-minded person might be termed a person who has always been poor so far as his mental equipment has been concerned.

Many children are backward and retarded because of lack of opportunity for receiving an education because of some serious illness, often occurring in early childhood, extending over a considerable period of time and also where one or more of the special senses are markedly impaired or entirely absent, *e. g.* loss of vision, hearing and speech.

As a result of the careful examination of the mental state of several thousand school children, certain tests to establish the mental age have been elaborated, known as the Binet-Simon tests. These tests when used properly, bearing in mind the environment, nationality, etc., of the child or adult being tested and having the individual at

ease are of great value in determining the mental age of any particular person. The illustrations accompanying this article show the actual and the mental age of several of the higher grade of the feeble-minded and demonstrate how such persons' mentality does not always express itself so as to be recognized at its proper value by the ordinary observer.

The term for feeble-mindedness commonly used in England, *amentia*, explains itself as being something different from *dementia* so far as the actual state is concerned. These conditions may ultimately be much the same but in *amentia* the individual has always been below the normal state whereas the *dement* has ordinarily had this state but has lost it. The feeble-minded may, however, and do *dement*.

Those who have had the opportunity of observing defectives and degenerates have arrived at the opinion that in the majority of instances inebriety, prostitution, vagrancy and pauperism occur in persons who are not normal. The moral responsibility of the mentally defective, whether insane, feeble-minded or epileptic, cannot be considered the same as the normal; yet many are sent to penal institutions owing to non-recognition of their mental defect.

Remember that the feeble-minded may be adults physically in years while mentally they are children and always remain such. In them there is a cessation of mental development at periods corresponding with perhaps 5, 6 or 7 years in the normal child, and although the development of

their physical make-up may continue, mentally they remain at a standstill. In consequence of this involment of the mental state these persons are unsocial beings incompetent to assume a normal position in a community by maintaining themselves or to enter into contracts of any kind, especially that of marriage. Why should persons of this type be permitted to marry and bring into the world others of their kind when they, because of their affliction, cannot even care for themselves in a proper manner let alone caring for others. It is easier and more economical to maintain a feeble-minded woman in the proper institution than to maintain later a numerous offspring.

The lack of mental development in the feeble-minded and the failure of mental powers in the demented explains why in these persons religious perversions and many contrary actions take place. In an early stage of dementia, before the mental failure has been recognized by the individual's associates, he may be permitted, as a result of loss of control over natural impulses and desires, to fall into all kinds of difficulties, to waste his property, to abuse alcohol and pass into excesses of various kinds, especially those of a sexual nature. The average person does not realize that in most defectives, not only are the normal passions of man present but in many they are exaggerated or perverted, and at the same time the normal control which man may have over such passions is either markedly impaired or entirely lost.



EPILEPTIC IMBECILE.

Actual age, 14 years.
Mental age, 6 years.

Esther H.—3557. Admitted to Craig Colony July 2, 1912. Age 14 years. Fourth grammar grade education. Paternal grandmother paralytic. Father alcoholic. Mother and her family negative. Patient fourth in family of seven, all living. Onset of her epilepsy in infancy. Infancy and childhood of patient as given normal other than epilepsy. Ran away from home twice at age of 13 years. Claimed once to avoid a man who annoyed her. Well nourished, good looking girl. Passed Binet test at six years.



EPILEPTIC MORON.

Actual age, 20 years.
Mental age, 9 years.

Jennie T.—3686. Admitted to Craig Colony Dec. 24, 1912. American-born. One year high school. Maternal grandfather feeble-minded. Father alcoholic, sexually immoral. One brother feeble-minded. Both parents died of tuberculosis. Personal history negative. Onset of epilepsy at 12 or 14 years. Alleged cause, fall from piano stool. Probable cause, puberty in a pre-disposed individual. Both severe and mild seizures, one or two a week.



EPILEPTIC IMBECILE.

Actual age, 15 years.
Mental age, 7 years.

Florence M. S.—3672. Admitted to Craig Colony Nov. 23, 1912. Aged 15 years. American. Mother German. Mother died at 20 years from pulmonary tuberculosis. Father alcoholic. Patient had convulsions during first dentition, these continuing at varying intervals from 1 to 2 daily to 3 to 4 each week. Attended school. Could not advance beyond 2nd grade. Passed Binet test at 7 years. Was admitted to Colony from Detention Home in Buffalo, where she had been committed for wandering on streets.



EPILEPTIC MORON. SEXUALLY IMMORAL.

Actual age, 21 years.
Mental age, 10 years.

Libbie E. J.—3455. Admitted to Craig Colony Jan. 10, 1912. 21 years of age. High school education (?) American. Family history as given, negative. Puny (?) baby. Began school at 7 years, making fair progress. First epileptic seizure, probably grand mal, at 12 years. No cause assigned. Since then seizures recur every two or three weeks, are severe and occur in morning as a rule. No history of trauma. Has grown stubborn and will not obey superiors. When admitted she could not co-operate well during examination. Passed Binet test at 10 years. Shortly after admission was found carrying on perverted sexual practices with another female. Repeatedly attempted to make assignations with male patients. Is an excellent worker in cottage.



EPILEPTIC MORON, WITH DEMENTIA.

Actual age, 38 years.
Mental age, 10 years.

Ella W.—2794. Admitted to Craig Colony June 10, 1910. Aged 35 years. Widow. German descent. Elementary education. Made poor progress in school. Father alcoholic, mother epileptic. Two sisters and her own son epileptic. Had to use braces in learning to walk. Said to have been run over by a wagon at age of 12 years. She has been hysterical and threatened suicide, as have also her father and son. Has had delusions that she was being poisoned. Alleged age onset of epilepsy at 30 years, and assigned cause operation for appendicitis. Has severe seizures. Binet test made February 8, 1913, gave mental age as 10 years.



EPILEPTIC IMBECILE.

Actual age, 46 years.
Mental age, 8 years.

Stephen B.—1704. Admitted to Craig Colony Dec. 13, 1904. Aged 37 years. American-born. No education. Father said to have had convulsions. Patient had first attack, a severe one, at age of 22 years; assigned cause, la grippe. Violent after seizures. Attended school from age of 11 years to 16 years, but made no progress. Married at age of 27 years, had one child, and soon after wife left him. Upon admission he was a well-nourished, muscular individual who appeared mentally deficient. Could not name state, said he was born in 1832, could not name president, said he voted at preceding election but could not tell for whom he voted. Rudimentary school knowledge. Binet-Simon test made Feb. 7, 1913, gave his mental age as 8 years.



EPILEPTIC MORON. CRIMINALISTIC (?).

Actual age, 18 years.
Mental age, 8 years.

Orin S.—2074. Admitted to Craig Colony Oct. 19, 1906. American-born, as also parents. Mother epileptic, died from tuberculosis, as also paternal great-uncle and several cousins; patient fifth in family of six children. Infancy and childhood negative. Reached third grade in school. Feeble-minded. First convulsion occurred at seven years. After admission was found to be a sexual pervert. Mischievous and ran away from institution several times, stole chickens from neighboring farmers and money from other boys, etc. Mental age Feb. 11, 1913, by Binet-Simon test was 8 years.



MORON. VAGRANT. EPILEPTIC.

Actual age, 20 years.
Mental age, 10 years.

Arthur T.—1587. Admitted to Craig Colony Sept. 17, 1904. Aged 11 years. Born United States. Both parents alcoholic; father deserted family. Mother insane at Buffalo State Hospital. Patient second of three children. Early history of patient unknown. Age at onset of epilepsy alleged to be eight years; severe seizures recur at long intervals. Upon admission his mental state was noted as feeble-minded. A Binet test made Feb. 10, 1913, gave mental age as 10 years. It is alleged that an uncle was electrocuted for murder of storekeeper in Rochester, 1910. Patient has repeatedly run away from the Colony, apparently because of a wandering impulse.



MORON EPILEPTIC.

Actual age, 20 years.
Mental age, 8 years.

Charles F. C.—1880. Age 11-7-12 years. Father died at 29 years from tuberculosis. Both grandfathers alcoholic. Two paternal uncles and a paternal aunt died from tuberculosis. Sister of patient died from convulsions at age of 13 months. Patient had "light" convulsions during teething. First severe convulsion occurred at age of 4 years. Have recurred weekly and, again, not for months. Noted as feeble-minded on application. Binet test made Feb. 11, 1913, rates his mental age at 8 years. These defectives have no proper understanding as to rights of property or person.



EPILEPTIC MORON.

Actual age, 26 years.
Mental age, 10 years.

Walter S. H.—3426. Readmitted to Craig Colony Nov. 23, 1911. Aged 26 years. Common school education. Single. Family history as given is negative. First seizure at 12 years. Assigned cause, injury to foot. Probable cause, puberty. Grand mal. Hesitating speech. Usually quiet and well behaved. Passed Binet test at 10 years.

Give careful consideration to the fact that an exact line of delimitation between the normal and the abnormal mentally cannot always be accurately drawn and in consequence there are considerable numbers of individuals who may within a comparatively short period from the time they are first observed pass into a marked state of dementia or may manifest certain symptoms which show that they are not of a normal make-up.

The treatment of these various defective conditions must be along the following lines: Prophylactic or preventive, ameliorative and restorative measures. Under the prophylactic or preventive measures must be considered the general care of all persons in a community, especially as relates to a living wage, so that dire poverty will not exist. The environment of all must be made such that, given a reasonably healthy make-up to start with, each child born into the world may develop along the best possible lines. In the study of heredity and its influence one must also give due weight to the effect of environment on parents and offspring. It must be borne in mind, however, that with important elements required for development, either imperfect or destroyed, that the best environment will not produce normal individuals.

The individual care of the expectant mother, of the infant and of the growing child, is of the most vital importance from every viewpoint, as are also the regulation of the diet of the individual, the following out of a hygienic way of living which is governed by rules of common sense and not those of the faddist. Proper school instruction with a sufficient amount of recreation

and, when the individual reaches the proper age, the selecting of a suitable employment must be given careful consideration, as also the avoidance of the use of alcohol with the beginning of early adult years and through the balance of the individual's life and so far as possible the prevention of injury and the occurrence of disease from the moment of birth throughout life. Many of these facts are matters which are difficult to control, but which must receive as much attention as is possible under given circumstances.

Medicines are of value in treating certain symptoms especially those seen in the epileptic and the insane, but the use of quack remedies which oftentimes are most damaging in their effects to the person taking them and injurious to his pocket-book as well as those of his relatives, is a matter which should constantly be brought to the attention of and impressed upon families who have within their home circle an afflicted one who might be induced to use such remedies.

Surgery may either directly or indirectly bring about an improvement or arrest of seizures in a few cases of epilepsy and may indirectly improve or restore to a normal state of mind some of the insane but beyond this, it has no place in the treatment of these conditions except as might be applied to any person. Be skeptical about impossible claims being made of surgical intervention, *e. g.*, trephining, nose and throat work, retraction etc., curing and making normal a person primarily defective with an imperfect brain.

Persons showing feeble-mindedness or the milder forms of epilepsy and certain forms of insanity may sometimes be kept at home where they can be given such supervision as may be necessary. As a rule, however, the great majority of these mentally afflicted individuals must ultimately be cared for in some kind of an institution, public or private, to which they should be legally committed as are the insane. The antagonistic, critical, unreasonable, and fault finding attitude sometimes assumed by the relatives of a defective toward the institution or those seeking to provide proper care for the afflicted one is due to ignorance or to the fact that relatives are also defective and cannot grasp the situation.

There is a great necessity for pushing every means of educating the general public and especially the relatives of those afflicted in regard to preventive measures and where an individual has been restored to a normal state of mind, pertaining to the after care which is necessary to prevent a recurrence.

The discipline acquired by proper care in an institution will oftentimes enable the afflicted individual to live quite comfortably in an institution when no hope can be held forth that a complete arrest of symptoms will result so that the person can return to the life of the outside world. It has been suggested that ultimately

it may be possible to have defectives not in institutions visited regularly in their homes by representatives of the state.

School work for defective children requires careful planning in order that any satisfactory results may be obtained. A comparatively small percentage of defectives are able to carry along the ordinary branches of the school work to the extent of the work done in the higher grammar or high school grades. The bulk of education given to defectives should be along simple lines and especially the manual branches which will enable these afflicted persons to frequently become adept to such a degree as to enable them to be of material assistance in the life of the community in which they reside.

It must be remembered that with the epileptic special perseverance is required because of the fact that many of them have blotted out by a seizure the instruction which has just been given, this necessitating repeating the teaching a greater number of times than is necessary for the ordinary person, who is not an epileptic. It goes almost without saying that tact on the part of the teacher is more necessary with the defective than with the ordinary child.

The relation of the adult defective to society is an exceedingly important matter. Such defectives if allowed to assume the responsibility of parenthood either by being legally married or by mating or cohabiting without the marriage ceremony results in a defective progeny, which cannot maintain itself as normal persons should, becoming a burden on those relatives who are able to assume a more or less normal place in the community or becoming entirely dependent on the community. It must be remembered that especially with the epileptic who is thus permitted to assume the responsibility of parenthood that as time goes on deterioration occurs in the majority of instances and there presents itself, the problem of not only caring perhaps for several defective offspring, but also caring for the defective person himself or herself.

It is a much more common occurrence to have the female defective, either taken advantage of or even married legally by a normal male, by one who approaches the normal or by a medium grade defective, than it is for a defective male to be associated with the normal female. This being true, it is necessary that the female defective be more closely watched over, especially during the child bearing age, than the male defective. This should not preclude the necessity of also having the male defective under supervision as in certain ways he is more prone perhaps to develop tendencies which in themselves are not a benefit to those about him, *e. g.* the abuse of alcohol, stealing, making assaults, sexual and ordinary, destroying property, etc. We quarantine for a brief period those persons suffering from infectious diseases; why not quar-

antine for life those who are always a menace to their neighbors.

Many have advocated sterilization of defectives by various methods, in some of which the essential sexual organs are entirely removed so it is impossible for a person thus operated upon to procreate; in others an operation is performed to prevent the substance peculiar to the sex, be it ovum or spermatozoon, from passing through the normal channel to unite with that from the opposite sex, but permitting the special internal secretion of the sexual glands to pass into the system of the individual. General sterilization of defectives will never be practicable for self-evident reasons.

Defectives who have been sterilized are still a menace to the community, notwithstanding statements to the contrary, as such operations do not, in the majority of instances, diminish the sexual desires of these individuals to the extent thought by the public. If permitted to have their liberty in the community, females, especially the morons, who have been thus operated upon will undoubtedly, in the great majority of instances, become common characters, contaminate children and distribute broadcast venereal disease, especially syphilis, in consequence of which a great amount of harm will be done to the community.

Males who have been operated on, unless made complete eunuchs are also exceedingly dangerous to the community, as they can still commit sexual assaults, which unfortunately are frequently perpetrated on innocent young girls. It is well known that perverted sexual acts are commonly practiced by defectives, so that boys are not safe from this class. This phase of the question of sterilization is one which some writers scoff at as being immaterial and not of much consequence, but I wish to make a protest against the idea being held that because sterilized it is perfectly safe to turn such a defective loose in the community.

To my mind the best method for meeting this problem of defectiveness is that of segregation. Segregation means the placing of these defectives in a community by themselves where they live with their kind, and are educated to the extent that their mental state will permit. They are given the necessary medical care that their health demands and they are allowed every liberty which can be consistently granted. The result of such community life for the defective is that ordinarily they become contented and satisfied, feeling that they have a place in this special community, something which they could not have in the ordinary community in the outside world.

The ideal method of segregation is that of the colony plan, where the institution is arranged along the same lines as that of a large village, having its own means of recreation and occupation as well as the buildings for proper housing and otherwise caring for its inmates. It has been well said that good material cannot be made out

of bad material, but fairly good material may be spoiled by bad environment. This truism is frequently forgotten. There is a great amount of evidence to show that even though an individual is permanently defective, a change to a proper environment will bring about a material improvement in the general condition of such person. If this change in environment can fortunately be brought about in early life, the development is not infrequently aided to such a material extent that the defective child, when the adult period has been reached, becomes a helpful part of the family or household in which he is residing, although perhaps his mental state is not sufficiently normal as to make him self-supporting.

St. Paul tells us, in his Epistle to the Thessalonians, "comfort the feeble-minded." This advice if carried out in a broad sense, is all that can be done for this class of individuals. They cannot be made normal, as there is a permanent damage to their central nervous system, something which cannot be restored by any human means. Recognizing this permanent defect, it seems a preposterous thing to send such irresponsible persons to reform schools, prisons, etc., with the idea of making them, after a few years' residence, perfectly normal persons to be restored to a free and unrestrained life in the outside world.

In considering the enactment of legislation relating to the problem of defectiveness, conservatism must be ever before us, this to be tinged with a considerable degree of optimism. The task of solving this problem, in part at least, is not entirely hopeless. I do not contend that we can ever hope entirely to remove the defective from our midst, nor would it perhaps be desirable, but I do maintain that it is possible by the use of unobjectionable means to ultimately place the great proportion of the defectives under such a kindly supervision as to prevent them from increasing their kind and from producing in the ordinary community damage by unsocial acts.

Many of the hasty, ill-advised measures advocated, perhaps by inexperienced theorists, are not only futile but are injurious to the cause of providing proper care for this class. It must not be forgotten that at no time can we ever hope to have restrictive measures, whether they be custodial laws, marriage laws, laws of prevention of procreation, etc., that will include all who can properly be called defective. A certain proportion of defectives may be brought within the influence of custodial legislation but a vast number of the higher grade of defectives cannot possibly be reached until there is aroused public opinion to the fact that, not only is it a kindness to the individual, but also a duty to the public at large to have such high grade defectives under proper supervision at all times. This means that provision must always be available

for voluntary inmates in our various institutions for the subnormal and abnormal, and perhaps when a Utopia is with us, all of these will receive special care and supervision. For the higher grade defectives, especially for those who approach closely the normal, however, this care is something in the future, as the matter of making a positive diagnosis of defectiveness in this type will naturally always meet with much criticism and objection on the part of the general public.

Well thought out laws relative to the care of the insane, the inebriate, the epileptic, the feeble-minded, including with the latter the vagrant, a large percentage of the prostitutes, etc., must be given the utmost consideration by all who are interested in the welfare of humanity. The question of deciding as to mental competency or incompetency of the higher grade defective is something that requires the most careful examination and consideration. Until there is aroused a public conscience with a well defined moral sense at the fore we can not expect to accomplish much as to the control of venereal disease and the enforcement of marriage laws. So long as there is a double moral standard for the sexes just so long will many of these conditions continue to exist. There must be eradicated false ideas held regarding the necessity for "the sowing of wild oats," *i. e.*, incontinence of males. We must remember that laws will not make all persons moral. There must be something more before what we desire in this direction can be accomplished.

Health certificates before marriage may in many instances prevent those having venereal disease, either syphilis or gonorrhoea, in the infective stage, from marrying, but from the standpoint of heredity such certificates cannot at present be of great value for the reason that so far as the vast majority of mankind is concerned the facts relative to heredity are not available.

Unfortunately, it is a well-known fact that in many instances a person of some means can seemingly evade any law, no matter what it may be; and another thing to remember, so far as the sexual relations are concerned, is that no law can override sentiment, nor would it be well to have the world ever come to such a state that what we recognize as the normal feeling of affection between a man and a woman who enter the marriage state should be lacking and when those desiring to become such partners should simply be picked out by the state from a standpoint as to whether or not they were perfectly healthy. In our day certain writers go so far as to advocate the sweeping away of the home, marriage and morality. This being true of people supposedly above the average in intelligence, what can such an example mean to the masses. Transitory matings of the type advocated would soon result in the undoing of the

race as there would be no restriction of the passions of man.

It is my opinion that proper control of the sexual instinct is not to be obtained by constant detailed harping on the subject in schools, which often results in developing in children morbid ideas regarding the subject, for intimate knowledge alone of such matters has never proved a means of preventing man from permitting his sexual instinct from controlling him instead of his being its master. In fact, the contrary has been too often the case. There must be inculcated in young and old the fact that the human individual exists for other reasons than satisfying every appetite, powerful though such may be. All must learn that continence and health are entirely compatible although some would try to prove the contrary. The arousing of diverse interests in other matters, and from an early age the developing of self-control in the individual as relates to all desires, are of fundamental importance, controlling and directing the various instincts along proper channels.

In conclusion, I would repeat that all interested in the welfare of the race, who give careful thought to the facts and knowledge at present available regarding defectiveness must concede that all we can accomplish at present is, so far as possible, to segregate those who because of defective make-up are incompetent to assume a normal place in the community, and in accomplishing this protect both the defective individual and the community. Such partial segregation is worth while and is in the last analysis economical. Marriage laws, sensible in nature, will accomplish something; but in order to have any marriage law, no matter how good, enforced, it will be necessary to carry on an active educational campaign for a considerable period before the general public will assist in such enforcement. They must realize what venereal disease means, what mental defect means, what the responsibility of parenthood means, and must be given the results of a long-continued, thorough study regarding hereditary influences before we can hope to secure their active co-operation to meet the problem of defectiveness.

Sterilization has its place in selected cases, but I wish to reiterate the fact that even though when practicable, a defective person may be sterilized, it is not safe to turn such an individual loose in the community.

Enthusiasts will, unless held in check, simply confuse the issue at hand. A wise conservatism, especially by physicians, is demanded if anything lasting is to be accomplished in the matter of the prevention of defectiveness. It is well established that all families and all nations pass through a cycle of existence or life, as does the human individual. Defectiveness can never be controlled but in part.

The cost of segregating a considerable proportion of defectives will be no small sum, but

think of the amounts of money wasted annually on alcoholic beverages and in dissipation of one kind or another, so common to our day, factors which also increase the number of defectives. If but a part of the amount so expended was made available the problem of meeting the expense of providing adequate means of segregation could be easily met. Until the people realize the relationship between mental defectiveness and crime, pauperism, inebriety, vagrancy, prostitution, etc., there will not result the strict but kindly segregation advocated as the solution of the problem of caring for defectives.

EXAMINATION OF THE INSANE.*

By THEODORE I. TOWNSEND, M.D.,
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THE superintendents or their representatives in all the state hospitals are occasionally consulted in advance in regard to commitment of the insane, both as to the suitability of the patients for admission to the hospital and as to the method of procedure. It seems to me that this course is of advantage to all concerned and should be practiced more frequently, particularly in doubtful cases or situations.

This paper is an attempt to present the question briefly from the standpoint of the state hospital physician, and it is hoped that any obscurity will be cleared up in the discussion.

That the subject should be of general as well as of special medical interest is proved by the statistical record that 6,947 patients were committed directly to the state hospitals in the year 1911; 127 patients were discharged as not insane, and both numbers are probably larger for the year 1912. These figures mean that 13,894 physicians' certificates of insanity were made, but it is not intended to imply that 254 physicians made mistakes ignorantly or venially and certified that sane persons were insane. By no means; for a large part of these 127 were voluntary cases. Nor is it intended to claim that the hospital physicians made no mistakes in discharging these patients as not insane. Only 5 of these 127 patients were from the Binghamton State Hospital, and 2 of these 5 were voluntary patients, not committed. The hospitals are frequently required to take the patient's record into court, and the State Hospital Commission has recognized defects in the old form of the "commitment papers," as the Petition, Certificate of Lunacy, and Order of Commitment are commonly called, and has recently issued an improved form of blank with separate pamphlets of instruction to local officers outside of New York City and Albany County, and to the medical examiners in lunacy which make much

* Read at the annual meeting of the Sixth District Branch of the Medical Society of the State of New York, at Binghamton, N. Y., October 15, 1912.

plainer what to do, and what the certificate should state. They also effected amendments to the Insanity Law, such as extending the validity of orders and emergency certificates to a period of ten days. The essentials of these pamphlets for the purpose of this paper are herewith presented.

DUTIES OF LOCAL OFFICERS OUTSIDE OF NEW YORK CITY AND ALBANY COUNTY.

Health officers, superintendents of the poor, overseers of the poor, and other city, town and county authorities having duties to perform relating to the poor are charged with the duty of seeing that all insane are properly cared for. The poor officers or authorities above named shall notify the health officer of the city, town or village of any apparently insane person needing care and treatment. The health officer must see that proceedings are taken for the determination of insanity and commitment to an institution, if necessary. He may direct the overseer of the poor or the superintendent of the poor to make an application for commitment and, if a qualified examiner, may join in making out the required medical certificate. All questions regarding the designation of examiners in lunacy may be passed upon and decided by the judge to whom application has been made for the patient's commitment.

The health officer shall provide for the proper care, treatment and nursing of alleged insane persons, as provided by law and the rules of the State Hospital Commission, until the delivery of such persons to the attendant sent for the purpose of removing them to a hospital for the insane, at which time his responsibility ceases. When an order for a commitment has been made, the health officer shall see that such insane person is, without unnecessary delay transferred to the institution to which he has been committed.

Pending commitment, patients must not be confined for a period longer than ten days, and must not be committed to a prison, jail or lockup for criminals. The health officer shall see that the alleged insane person is cared for in a place suitable for his comfortable, safe and humane custody pending the determination of his sanity and his commitment, if such be found necessary. Such person shall not be confined in any place without a nurse in attendance, and the health officer shall select some suitable person to act as nurse or attendant. A female attendant shall be provided in case of a woman and the patient shall never be left alone until delivered to the custody of the attendant sent by the State Hospital. No mechanical restraint should be used and no drugs administered except by order of the health officer. A proper place must be provided by the county, city or town authorities for the reception, custody, care and nursing of the alleged insane, which shall conform in all respects to the rules and requirements of the commission.

Attention is called to the fact that the forms which have been used for many years for the commitment of patients to institutions for the insane have been changed by a recent order of the State Hospital Commission and only the new blanks should be used for that purpose.

The amendment to the insanity law provides that the petition for commitment must be made by a person with whom the alleged insane person may reside or at whose house he may be, by a father or mother, husband or wife, brother or sister, or child of any such person, or the next of kin available, or the committee of such person, or an officer of any well recognized charitable institution or home, or any overseer of the poor of the town, or superintendent of the poor of the county, in which any such person may be.

Notice of an application for commitment "Shall be served personally, at least one day before making such application, upon the person alleged to be insane, and if made by an overseer or superintendent of the poor, also upon the husband or wife, father or mother or next of kin of such alleged insane person, if there be any such known to be residing within the county, and if not upon the person with whom such alleged insane person may reside, or at whose house he may be. The judge to whom the application is to be made may dispense with such personal service, or may direct substituted service to be made upon some person to be designated by him." An affidavit of personal service, if such be made, must be presented with the commitment papers to the superintendent of the hospital to which the patient is committed.

Attention is called to the fact that the law requires a joint examination within ten days next before the granting of the order of commitment, by two legally qualified examiners in lunacy. Medical examiners must have on file in the office of the State Hospital Commission at Albany, a certified copy of their certificate of appointment by a judge of a court of record, showing that they possess the required qualifications. The original certificate of appointment must be filed with the clerk of the county in which the examiner resides.

Not only must the medical examiners certify to the fact that the person examined is insane, but they must also certify that he is a proper subject for custody and treatment in an institution for the insane.

No person can be committed to a civil hospital for the insane who is held under a criminal charge at the time of his commitment. No idiot, imbecile, epileptic or dotard, not insane, or person suffering from alcoholism or drug additions, not insane can be committed to an institution for the insane, nor will any patient be admitted to a State hospital if, in the opinion of the medical superintendent, he is not a proper case for treatment within the meaning of the statute, and

such person, if refused admission, shall be received and cared for by the superintendent of the poor or other authority having similar powers in the county from which he was committed.

Emergency Commitments.

Notwithstanding the requirements of the law that no person shall be admitted to any institution for the insane after the expiration of ten days from and inclusive of the date of the order committing him thereto, certain exceptions have been authorized by law. In cases where the condition of an insane person is such that it would be for his benefit to receive immediate care and treatment, or when he is dangerously insane, so as to render it necessary for the public safety that he be immediately confined, he may be received at an institution authorized by law to care for the insane, providing that a certificate shall have been executed in the customary manner by two medical examiners in lunacy. The medical examiners in their certificate must show adequate reasons why the insane person should be immediately received without the usual order and must give some reason why immediate treatment is necessary, or must show that his condition is such as to render him dangerous to himself or others. If this is not definitely shown in the certificate the superintendent or physician in charge of the institution may refuse to admit any such patient. When emergency commitments are made the papers should be made in duplicate, one copy being presented to the superintendent of the hospital to which the patient is taken and the other copy presented to the judge of a court of record for an order of commitment. The superintendent or physician in charge has no legal authority to detain a person so admitted for a period exceeding ten days, and it shall be the duty of the health officer, or other public officer responsible for the patient's admission, to see that an order of commitment is obtained and delivered to the superintendent or physician in charge of the hospital to which the patient has been admitted within ten days, as required by law.

Voluntary Patients in State Hospitals and Licensed Private Institutions.

The superintendent of any state hospital or the physician in charge of any licensed private institution for the care of the insane may receive persons for treatment who have not been committed, but who voluntarily make application for such treatment, and whose mental condition is such as to render them competent to make such application. No person is a proper case for voluntary treatment in an institution for the insane whose mental condition is such as to render mechanical restraint necessary, nor should such a person be admitted if his mental condition is not clearly such as to render him competent to make application for admission, nor if his condi-

tion is such as to render him dangerous to himself or others. The law does not require applications for voluntary treatment on the part of persons who are not insane, or whose mental condition is such that they could not be certified as insane after an examination by two legally qualified examiners in lunacy.

The Commission also issues a separate pamphlet:

INSTRUCTIONS TO MEDICAL EXAMINERS REGARDING THE PREPARATION OF CERTIFICATES IN LUNACY.

The history of the patient obtained by the examiners should be as complete as possible. The statements regarding the legal residence are of great importance, as they may suggest proceedings for the deportation of aliens or the removal of non-residents of the state. In giving the birth place of the patient the state should be mentioned, if possible. All answers to the questions should be definite.

For example, in answering the question, "Has patient been considered as of normal mental standard?" Instead of answering "No," give details, as "Has been considered an imbecile, or idiot, or not bright, queer or eccentric, etc." as the case may be. In answer to the questions in lines 248 and 249 give a brief history of the present attack as obtained from the patient's relatives or friends, and state whether or not the patient has been depressed, excited, untidy, destructive, suicidal or homicidal, and whether there have been any hallucinations or delusions, etc.

Physical Examination.

State whether or not the general physical condition of the patient is good, fair or poor. The examiners should state whether the physical condition is such as to prevent the removal of the patient to the hospital. If the patient is confined to bed, the commitment should be deferred. NO COMMITMENT SHOULD BE CONSIDERED IF DEATH IS IMPENDING. The existence of any contagious, infectious or other physical disease should be mentioned. A brief neurological examination should be made, showing the condition of the pupils and patellar reflexes and mentioning any defects of speech, and gait and paralyzes, etc., which may be present.

Mental Condition.

In describing the mental condition the following lines of inquiry, which for the sake of clearness have been grouped under different headings, are suggested, and the different possibilities to be thought of are mentioned under each heading:

- I. Behavior, Attitude and Emotional State:
Natural—distant—suspicious—bashful—elated—
depressed (sad—anxious) perplexed—apathetic,
etc.

II. Motor Condition :

- a. General motion.
 - a. Normal.
 - b. Over-activity; excitement.
 - c. Diminished activity; slowness of motion—complete inactivity—catalepsy—resistiveness, etc.
- b. Speech.
 - a. Normal in amount.
 - b. Increased in amount; shouting—noisy—singing—talkative, etc.
 - c. Diminished in amount; slow speech—complete mutism.

III. Train of Thought :

Clear—logical—jumping from topic to topic, yet so that it can be followed (flight of ideas) disconnected—fragmentary, etc.
Give short examples.

IV. Content of Thought :

Peculiar ideas—delusions—hallucinations—ideas of being observed—ideas that the acts of those about the patient refer to him (ideas of reference), etc.
Give examples.

V. Orientation :

Does the patient understand his environment, *i. e.*, know the place, time, persons, or at any rate, understand the situation?

VI. Memory :

Memory for old events; best tested by seeing if the patient can give an account of his life.
Memory for recent events; best tested by seeing if the patient can give an account of his recent movements.

VII. Insight :

Does the patient know that he is mentally abnormal?

Some trouble has arisen from a misunderstanding of these points, for in spite of the new forms and instructions we occasionally see commitments which are so defective that the patient can not be accepted by the Superintendent in accordance with Section 81 of the Insanity Law which reads as follows: "The certificate of lunacy must show that such person is insane. . . . Such certificate of lunacy shall be in the form prescribed by the commission, and shall contain the facts and circumstances upon which the judgment of the physicians is based and show that the condition of the person examined is such as to require care and treatment in an institution for the care, custody and treatment of the insane."

"The superintendent or person in charge of any institution for the care and treatment of the insane may refuse to receive any person upon any such order, if the papers required to be presented shall not comply with the provisions of this section."

Just the other day one of the new forms of certificate came to the hospital with the sole statement under the caption Mental Condition—"Badly Impaired"—but as the patient was 78 years old such impairment might be expected as

a simple result of senility, and not insanity. A physician from this hospital saw the patient and found her to be a proper case for admission, but returning the papers for the necessary changes has involved a delay of over a week in having the patient properly cared for. The sections of the law in regard to commitment are also printed on the commitment blanks. It is to be noted that the Health Officer is not empowered by law to make the petition.

The examination for commitment does not need to take a long time except, perhaps, in doubtful or borderline cases, and the examination it seems to me should not ordinarily take more than an hour in order to fulfill the requirements.

This is not an address on insanity, but it may be well to mention some acceptable definitions of insanity. First let me give you a definition which some years ago was considered complete and authoritative. This definition attempts to tell not only what insanity is, but also what it is not. It was given by a distinguished physician, considered an authority, and he ingenuously admits that "it labors under the disadvantage of length."

"Insanity is either the inability of the individual to correctly register and reproduce impressions (and conceptions based on these) in sufficient number and intensity to serve as guides to actions in harmony with the individual's age, circumstances and surroundings, and to limit himself to the registration as subjective realities of impressions transmitted by the peripheral organs of sensation; or the failure to properly co-ordinate such impressions, and to thereon frame logical conclusions and actions; these inability and failures being in every instance considered as excluding the ordinary influence of sleep, trance, somnambulism, the common manifestations of the general neuroses, such as epilepsy, hysteria, and chorea, of febrile delirium, coma, acute intoxications, intense mental pre-occupation, and the ordinary immediate effects of nervous shock and injury." This is really good, but no definition can be absolutely complete. As a simple expression of ideas is more clear than a complicated one, just as simple machinery is better than complicated machinery if it answers the same purpose, please contrast the following definition of insanity used by Dr. Charles G. Wagner: "Insanity is a prolonged departure from the individual's normal or natural way of thinking, feeling and acting." This definition, although not complete, answers very well for all practical purposes. Another definition slightly modified, is that of Dr. Peterson: "Insanity is a manifestation, in language or conduct of disease or defect of the brain," with the addition of "constituting a more or less prolonged departure from the individual's normal mental condition."

The proper or normal working of the brain maintains the mind in its highest efficiency, which is the harmonizing of the person to the surroundings in which that person may be placed. That is, to make the best of things as they are until a change for the better can be made. As we live in a more or less civilized community, it is found that kindness and consideration for our fellows becomes not only a duty and something of a necessity, but that it is more apt to promote our own happiness and welfare. When a person is out of harmony with the environment, with the community and his family, there is apt to be something wrong with that person's mental make-up, if he is unable to change those conditions for an improvement of the situation. And if not, then disease or defect of the brain, as shown by the way the mind grasps, or rather fails to grasp the situation, is indicated. It is an important indication especially if showing, "a more or less prolonged departure from the individual's normal mental condition," although it may or may not constitute insanity within the meaning of the statute. Then the other symptoms of a definite psychosis should be looked for—excitement, depression, delusions, hallucinations, irrational acts and talk, and if present should be instanced briefly in the certificate. It is of the greatest value to a clear certificate to describe the nature of the patient's false ideas, and his actions, and to give a sample of his own production, or talk, rather than a mere affirmative statement that he has delusions and hallucinations, etc. Also the excluding factors of acute intoxications of alcohol or drugs, or fever delirium, or impending death must be taken into account.

A border-line case has been defined by Dr. Meyer as one which would be improved by treatment in a hospital; this is true, but it would seem a safer procedure, if the person is not suitable for admission as a voluntary patient, to make application for a hearing before a judge, and thus both sides of the case may be presented for a legal decision.

In a number of cases admitted to this hospital towns have been divided upon the question of the patient's sanity or insanity, although a hearing may readily be had upon the motion of a relative or near friend, or upon the motion of a judge. The problem is solved in New York City by the Psychopathic Wards at Bellevue and the King's County Hospitals, and also at Albany and Syracuse. Patients alleged to be insane, may be committed and detained for observation until committed to a hospital, or pronounced not insane by the alienists of these detention wards. Such wards should be established in all cities, preferably in connection with general hospitals. Voluntary admissions have helped the situation a great deal, but of course, patients cannot be admitted as voluntary if they do not appreciate their mental state, and know that they are in-

sane, and a great many with paranoic conditions who have no insight are thus excluded. The state hospital physicians have a decided advantage over the general practitioner besides their special training. At the Binghamton State Hospital, the patient is under observation for a considerable time (several weeks) by the Superintendent and several assistants, with complete physical and mental examinations and anamneses, supplemented by complete laboratory examinations when necessary. Then the case is presented with all the facts at command, to a clinical staff meeting of 12 physicians for diagnosis. The patient is brought in and the salient features of the psychosis are demonstrated. A full discussion is expected from each member, and the certifying physicians are invited to be present and take part in the discussion.

The histories, or anamneses of the cases at the hospital extend to all the obtainable facts of the ancestry and collateral relatives, as well as the children of the patients, and studies are made of the patients' lives from birth to the time of admission, with analyses of their character, conduct, and make-up.

The physical examination includes every part of the body, and not the nervous system alone.

The mental examination covers all the fields which are considered important in the present stage of psychiatry, with psychanalyses when the patients are at all accessible, and if these are required.

In order to guard against omissions in these examinations, a definite questionnaire is followed with statements, positive or negative as the case may be, under each heading. Much importance is attached to the patients' own accounts of their troubles and difficulties, and these are incorporated in the records, with explanations where necessary.

This questionnaire is too long to be repeated in this paper and is therefore omitted.

Such an examination as this is of course impracticable and impossible for an examiner in lunacy, and it is not intended alone for the determination of insanity, but primarily for the purpose of treatment, and for correct classification in the 23 forms of psychoses with 60 subdivisions adopted by the New York State Hospital Commission on the recommendation of Dr. Adolf Meyer.

TYPES OF INSANITY.

1. Psychoses with Brain Tumor.
2. Traumatic Psychoses.
3. Senile Psychoses.
4. Dementia Paralytica.
5. Psychoses with Other Brain or Nervous Diseases.
6. Alcoholic Psychoses.
7. Drug and Other Toxic Psychoses.
8. Infective-Exhaustive and Autotoxic Psychoses.

9. Allied to Infective-Exhaustive Psychoses.
10. Symptomatic Depressions.
11. Depressive Hallucinoses.
12. Involution Melancholia.
13. Depressions Undifferentiated.
14. Dementia Præcox.
15. Allied to Dementia Præcox.
16. Paranoic Conditions.
17. Manic-Depressive Psychoses.
18. Allied to Manic-Depressive Psychoses.
19. Epileptic Psychoses.
20. Hysterical, Psychasthenic and Neurasthenic Psychoses.
21. Other Constitutional Disorders and Inferiorities.
22. Imbecility and Idiocy with Insanity.
23. Unclassified.

It is entirely unnecessary for the purpose of a certificate of lunacy to classify the form, but only to determine the fact of insanity and to set forth briefly in the certificate the reasons therefor.

A great problem to the public, the law and to psychiatry is the distinction between insanity as a defense for crime and the medical standards of insanity.

The successful plea of insanity as a defense for crime requires that it shall be shown that at the time of commission of the crime the person did not know the nature of the act or that it was wrong. Judged by this standard, however, at least 50 per cent. if not more, of the patients in the state hospitals could not be acquitted on the grounds of insanity if they committed crimes. The real criterion should be the question of insane impulses, and whether the person is able to inhibit these impulses or not. We should endeavor to eliminate this medical and legal difference. If insane and guilty, a verdict of "guilty but insane" should be rendered. In other words, insanity in itself should be a defense for crime, but such an insane person should be committed, and cared for as long as necessary for the protection of the community and the patient.

There is a tendency on the part of the examining physicians to place too much dependence upon the statement of interested relatives. An independent investigation of facts obtainable from unconcerned or impartial observers such as neighbors, etc., would often clear up a doubtful case. This again is not intended as a criticism, for the great majority of the certificates are excellent, but is an effort to explain the medico-legal requirements, so that the commitment papers may satisfactorily comply with the Insanity Law, be a credit to the examiners, and of assistance to the patient and to the hospital.

PREVENTION OF INSANITY.*

By CHESTER WATERMAN, M.D.,

WILLARD, N. Y.

FOR many years preventive medicine has been practised with varying success, dependent to a large extent upon our knowledge of the definite etiology of different disease processes. The scope of such work has increased with the discovery of the causative factors until at the present time, with our increasing knowledge of bacteriology and serology, and with public health officials specially trained in these branches, and with well equipped laboratories for research and preparation of combative agents, much is being accomplished towards the protection of communities and the country at large.

By quarantine of patients suffering from contagious diseases, by rigid disinfection and care of the excreta, etc., of those afflicted with infectious diseases, and by isolation of those pitiable incurable cases which are apt to transmit their affliction, we have done much.

Serum therapy has accomplished a great deal both in the cure and prevention of several pathological processes, and asepsis has perhaps done even more.

A great war has been waged, and is still being waged, against tuberculosis by the education of the public as to its nature and the danger of the affected ones to others. We have laws prohibiting expectoration in public places to prevent the spread of tuberculosis; water supplies are tested for the dreaded typhoid bacillus; and the laity is warned against and protected from these diseases to a large extent.

This has been rendered more possible by the acquired knowledge of the definite etiological factor or the direct infectivity or contagion of the disease in question. The masses have been taught to fear the micro-organism and in fearing have helped materially in prevention.

This public education and the public co-operation has been rendered less arduous from the fact that in most cases the cause of the disease is proven to them by the results of failure to observe the laws set down. We can say that here is a bacterium which when taken into the system will cause such and such a disease, or there is a patient with whom if you come in contact will transmit his ailment, and they know, from past experience, that such is the case. They know that to drink polluted water is to court typhoid. They know that a dirt infected wound may produce tetanus or what not. There is a definite thing to fear and they appreciate it. The cause and effect is self-evident.

When we come to attack insanity from the same viewpoint we find a much more difficult

* Read at the annual meeting of the Seventh District Branch of the Medical Society of the State of New York, at Corning, N. Y., October 10, 1912.

problem. As a rule we cannot say: here is the cause of the mental affliction, avoid it. A person suffering from a psychosis will *not* impart a like disease to those coming in contact, so the problem becomes much more complex. In the vast majority of cases there is not a single, definite etiological factor, but a combination of such factors, far reaching, often obscure, and by no means always constant. Our limited knowledge and the complexity of even that which we do know regarding the causes of insanity handicaps our efforts.

For some years past the increase of mental disease has been noticed. The public is now appalled at the enormous number of insane confined in our institutions for their care and custody. Aside from the humanitarian standpoint our political economists are impressed with the burden to the state and country. What then are we to do to stem the tide? The aim of all rational preventive medicine is to remove the cause, and in psychiatry as in all other branches our efforts must be along this line.

Let us consider then, briefly, the etiology of alienation as far as we know. There are some definite and demonstrable factors which stand out pre-eminently as beyond question of doubt the direct cause of particular types of mental disease, and chief among these we find alcohol and syphilis.

In reading statistics of almost any large insane institution one is impressed with the prevalence of these two factors. I think it is safe to say that from one-quarter to one-third of all admissions to asylums have a history of either alcohol or syphilis. Dr. R. G. Rowe (*Journal of Mental Science*, January, 1912) states that one-third of the cases admitted to asylums in England bring with them a history of either of these agents. We do not contend that all persons contracting syphilis or all who are addicted to the use of alcohol in excess must necessarily become insane, but it is a fact beyond dispute that there are many, many cases whose mental trouble is due absolutely to these agents. It is because these agents do not of necessity cause alienation that renders the problem more difficult to meet. We do know, however, that when a case of paresis exists that it has been caused by syphilis. That fact has been established by the Wassermann reaction beyond question of doubt. We also know that the clear-cut psychoses, such as the acute hallucinoses, Korsakoff's syndrome, and some chronic delusional states would not have occurred were it not for the introduction of alcohol or other poisons into the system. But the fact that the reaction to these agents is not constant leads us to seek further for a contributing cause. Why should one person develop paresis some 15 or 20 years after the initial syphilitic infection, and another with the same interval

and treatment and suffering from the same infection retain his mental faculties? Why should one individual develop a typical alcoholic insanity and his next door neighbor, perhaps having imbibed just as freely or even more so, show no evidence of mental aberration? Dr. F. W. Mott* has cast some light upon this variation. He says in part: "No child is born insane, although it may be born feeble-minded from actual cerebral deficiency. In every case of neurosis or psychosis we should endeavor to ascertain what the individual was born with (nature) and what has happened at or after birth (nurture). In nervous and mental as in bodily disease there are nearly always two factors, viz., the soil and the seed, the inborn and the acquired environmental. There are individuals born of sound stock that no acquired conditions, *e. g.*, drink, poison engendered within the body or taken from without, head injuries, emotional shock, distress and even profound misery and destitution combined can render insane. There are others, and these generally from a neuropathic stock, whose mental equilibrium may be disturbed by any one of these conditions, or very frequently without any apparent cause except the conditions appertaining to the sexual functions in adolescence, the puerperium and the involutorial or climacteric period."

I feel that there is much in this inborn factor, as he terms it, and that this is the soil in which such seeds as alcohol and syphilis flourish. We know absolutely that syphilis causes paresis and numerous other luetic cerebral affections, and that alcohol and other toxines, endogenous and exogenous, are directly responsible for various other psychoses and their prevention is self-evident.

I feel that a public campaign against lues as open and free as that against tuberculosis would reap results. We are too apt to regard syphilis as a disease whose discussion should be restricted to the profession and the laity as a rule is all too ignorant of its true nature, prevalence and dangers.

The problem is an enormous one and fraught with many obstacles, but efforts are being made in some localities and countries to control it. It is too early to be able to say what the results of treatment by salvarsan in the early stages will be as to development of meta-syphilitic processes in later life, but apparently a thorough course of mercury and the iodides does not prevent such development.

But what of the other two-thirds or three-fourths of the admissions to hospitals for the insane? Here our task of prevention is even more difficult and Mott's "Inborn Factor" plays a more prominent role. For want of a better term we might class all those psychoses developing without known physical basis as

* "The Inborn Factors of Nervous and Mental Diseases," *Brain*, Nov. 1911.

functional, and in this large class we find that heredity plays a very important part, and this being true is of material assistance in our effort of prevention. As Dr. Bevan Lewis, writing on "The Biological Factor in Heredity," points out, "It is obvious that it is not the insanity that is transmitted, but the psychopathic basis out of which insanity is evolved."

Prof. Bateson, in his book "Mendel's Principles of Heredity," says: "Forms of insanity which appear when the individual is subjected to various strains and excitements may not appear at all if these causes be absent. The element transmitted is evidently the liability not necessarily the condition." Here then is a key, some basis upon which to work. The predisposing factor is there in the form of hereditary taint, and just as in the case of the tubercle bacillus, which is an ever present danger to those born of tubercular stock, the exciting factor, be what it may, is fully as potent and dangerous to one of neuropathic heredity.

This being recognized, an effort has been made by many observers to ascertain with some degree of accuracy how far we can utilize these facts in limiting the spread of alienation. The Mendelian theory of transmission has been again brought forward, and because of its definite law of transmission and the generally conceded fact that heredity plays so prominent a role in insanity, it has been advocated that legal steps be taken to prohibit those suffering or who have suffered from a psychosis which is such as to probably develop insanity in the offspring, from furthering their stock.

It has been suggested that operative procedure should be resorted to to prevent propagation, and this more particularly in the case of imbeciles and moral degenerates whom we know are prolific, and more especially the criminally insane who are responsible for a large proportion of the more heinous crimes. Segregation has been advocated for these classes and chronic vagabonds, etc. These are drastic measures and have brought forth much adverse criticism because of the interference with so-called fundamental rights and liberty, and because of the feeling that our knowledge of hereditary transmission does not at present warrant such procedure.

But the knowledge we have of the transmitted soil and tendencies is sufficient to enable us to do much towards preventing an outbreak in those unfortunate enough to possess this so-called in-born tendency and to protect those who have already suffered, from further attacks. Quite a little has been done along this latter line by our numerous after-care committees connected with the state hospitals, and much more is being contemplated. The National Committee for Mental Hygiene established, I believe, some four years

ago, is collecting data from the different states regarding the laws of commitment and the care of patients pending commitment. It is studying the after care, social service, and facilities for instruction in mental diseases in the medical colleges. After having collected the facts, as Dr. Mabon said in speaking of it at the last regular meeting of the American Medico-Psychological Association when introducing a resolution relative to a gift of a large sum of money for furthering its endeavors, "the chief object is to seek to co-ordinate all work for mental health and the treatment of mental disorders throughout the country. It aims to make its headquarters a clearing house for the prosecution of their work and a center for the organization in all the states of local societies similar to the Connecticut and Illinois Societies for Mental Hygiene, and the Committee on Mental Hygiene of the State Charities Aid Association of New York. It will thus encourage and aid the establishment, under the direction of such societies, of social service, including prevention, advice and after care, and in general it will seek in every way to raise the standard of American knowledge and practice in the prevention and cure of mental disorders." These committees and social workers have done much in endeavoring to educate the public regarding the nature of mental disease, and it is through such education, it seems to me that our greatest chance lies in successfully treating insanity, both from a preventive as well as a curative standpoint. We are able now to recognize fairly well defined disease entities among the mental afflictions and to have quite a little insight into the mode of development of them, and so can treat in many cases by anticipation. I feel that often the end picture, the chronic state admitted to our institutions might have been prevented were the prodroma signs more thoroughly appreciated. We find in consulting statistics that a large percentage of the admissions to state hospitals is formed of dementia præcox and manic depressive insanity, and that likewise a large percentage of these show a faulty heredity. One can often obtain a history of some exciting cause and in many cases this exciting factor might have been obviated and the normal balance, so to speak, retained.

Dementia præcox, that pitiable psychosis characterized by such profound dementia in the terminal states is probably often the result of faulty mental habit formation of long duration, and perhaps dementia would not result were this state recognized in the early stages and the case dealt with. This has impressed me very frequently in examining patients admitted to our state hospitals with apparently all the earmarks of a beginning dementia præcox, but who, after a short residence away from the exciting factor, freedom from worry, attention to physical health and some little effort

on the part of the physician in endeavoring to assist the patient to regard the delusional formation in its true light, gain complete insight and are able to leave the hospital apparently recovered. Such cases have impressed upon my mind the undoubted benefit of psychiatric clinics and hospitals suitable for these incipient cases. But not a little can be done from a preventive standpoint without recourse to such institutions. We know that this psychosis especially is apt to develop during puberty and oftentimes a proper regulation of the life and environment of a patient with a known hereditary taint during this period may check the development of the definite psychosis. I have often felt that our modern educational methods were at fault in this respect. We have medical inspectors for our public schools whose duties are primarily to look after the physical well being of the students, and too often the mental hygiene is entirely lost sight of. The writer learns from talking with a teacher in the public schools of one of our large cities that her efficiency is rated on the number of promotions she can show at the end of each term. This grinding and pushing is bound to be detrimental to those of her charges unfortunate enough to possess this inborn tendency, and more especially if it occurs at the critical adolescent period of life. Efforts are being made in many localities to prevent this, but the parents in their zeal to see their children progress and little thinking of the danger that may result to the delicate mental faculties, by their attitude, due essentially to ignorance of psychiatric principles, hinder such efforts.

This faulty training and environment is not, however, confined to the schoolroom alone. In all walks of life we find individuals striving to do that for which they are constitutionally not fit, and it seems to me that much good might result from a careful study of individual cases with special reference to the environmental conditions. In this country the laity as a rule yet regards insanity as a blight or disgrace, and as a result will not consult those trained in the observation of such afflictions until the process has developed so far as to be recognized as a definite mental trouble, even by them, and such as to render commitment imperative. In Germany they are somewhat in advance and have large clinics, or we might better say hospitals for the reception of such cases in their incipient stages. The patients are free to come and go as they wish, and residence in these institutions is regarded in the same light as in a medical or surgical hospital, in the true sense of the word. It is stated that abnormal mental process has been checked and commitment averted in many cases. We know by statistical evidence that similarity of psychosis in both ancestors and descendents is the rule. James Frederick Carson (*Journal of Mental Science*, April, 1912) says that similarity is twice as frequent as dis-

similarity. This tendency of like transmission is a further help in our efforts to cope with individual cases. Knowing, as in the case of manic depressive insanity, that the reaction is quite typical and really merely an exaggeration of normal emotional reaction, good results might well be expected in protecting such an individual from environments such as to heighten an exhilaration or lower a depression on the border line between normal and abnormal emotional states, and here again more especially at the critical periods of life.

So likewise in the neurasthenic, psychasthenic and hysterical groups which usually develop a psychosis as a transition from the neurosis. Dr. Freud has shown a means of relief by the psycho-analytic method. His views are regarded by many as extreme, but nevertheless the results he has accomplished by bringing to light the so-called hidden mental complexes or Freudian mechanisms which he claims to exist subconsciously has proven that there is at least a good basis for his theory.

It cannot be expected that the general practitioner with his numerous other duties relative to the physical welfare of his patients, can be acquainted with the different forms of psychoses sufficiently well to anticipate development from prodromal signs. The colleges do not consider the subject fully enough, but if such were the case and there were more trained psychiatrists available for general consultation the writer feels that many cases might be kept from becoming chronic charges, or at least the time of commitment to institutions might be postponed.

With advancing psychiatric knowledge and more definite approach to disease entities, and in some cases the absolute knowledge of the etiological factor, the writer feels that we are able to cope with the problem in a much more rational manner, and as psychiatric science advances and at least a superficial knowledge of it becomes more widely circulated, as has been the case in many physical ailments, we may hope for more results from preventive therapeutics in this branch.

MESSAGE IN THE ACUTE AND SUB-ACUTE STAGE OF GONORRHEAL RHEUMATISM.

By HEINRICH F. WOLF, M.D.,

NEW YORK CITY.

GONORRHEAL rheumatism is one of the most dreaded affections of the joints, not only on account of its common sequence, the stiffness of the joints, but also on account of the acute pain that accompanies it.

For this reason every method that relieves the pain and prevents the consequences must be most welcome to all physicians.

The writer is fully aware that most of his colleagues are shocked at the idea of treating with massage an infected joint, which at the same time is so sensitive that the slightest jar causes agony. Therefore he wishes to state that he has treated subacute gonorrhoeal joints with massage for the past fifteen years, and has never met with any unpleasant occurrence or seen a general infection; on the contrary, recovery has always been rapid and it never has happened that a patient refused to be treated by these methods.

There may be raised numerous objections to this treatment and the writer wishes to answer them one by one. The most important is the possibility of a general infection. A similar treatment is given in cases of prostatic abscesses. You know that massage of the prostate is generally used for this affection, though the gland is choked with gonococci, and the writer knows of no bad consequences in these cases. In fact, it is even doubtful whether such consequences are likely to happen.

In 1901, Bauer published an interesting report about certain investigations on cases with gonorrhoeal rheumatism. He examined 25 cases in the first days of the disease and found in nineteen cases gonococci in the joint. He was using Wassermann's nutroseserum medium. This medium is very favorable to the growth of gonococci. Bauer was unable to obtain a positive culture if the examination was made later than six days after the onset of the disease, even in those cases where a culture had been positive in a previous examination. It is very interesting to know that he never had a positive finding from the culture taken from the tissue surrounding joints that had given positive cultures.

He claims that the gonococci perish very quickly in the tissue and that the changes around the joint are due to the toxins of the gonococci.

In Bergmann's clinic, in which these researches were made, massage in the early stage of the disease is now being practised. During the last five years the use of thermopenetration or diathermia in such cases has been recommended, in the first days of the disease, with the object of killing the gonococci in the tissue. This method increases the temperature of the tissue to any desired degree and as the gonococci cannot stand a temperature above 41 deg., it should produce the desired results. This method so prepares the tissue that massage may be begun at an early stage and good results have been reported. The writer does not doubt the results, but it is probable they were due to massage only, as the gonococci perish quickly in the tissue anyhow. In fact the treatment of acute gonorrhoea with the thermopenetration has not warranted the great expectations of its advocates.

The next important objection is the extreme

tenderness of such joints. You will ask how it is possible to treat an affection with massage when it is so painful that the patient cannot bear the slightest touch. First of all, it seems to the writer that, we are generally mistaken as to the cause of this pain. It is not so much the touch of the skin that causes it, but the jarring of the joint. The writer has seen patients who were not able to bear the massage they received, which was given by his assistant, but he could clearly demonstrate how they could easily bear it if the part treated was so well supported by the other hand of the operator that a jarring of the joint was impossible.

Besides, there is a wrong conception of massage lingering in the minds of most physicians. Let us digress for a moment. Kobert has given the only definition of poison. Poison is what is harmful. A small dose of morphine is without effect, a big one is fatal; but whenever we speak of morphine we think, unconsciously, of the necessary dose. So with massage, there is no exact dosage. We can massage the most painful spot without causing pain, and we can massage a normal one so hard that the victim cannot bear it. In the case of gonorrhoeal rheumatism, we must follow unconditionally the rule, that massage should not cause more pain than can be easily borne by the patient. In doing so we shall quickly find that the pain caused by the first strokes becomes less, and then, and only then, can the pressure be increased. In that way we can gradually relieve the pain and produce a comfortable condition. The object of this treatment is obvious. Every acute inflammation is accompanied by swelling, and it is the swelling in the first instance that causes the pain, though not entirely. We all know how much immediate relief a patient with a cellulitis gets from an incision, even when the abscess proper is not opened. The outflow of blood and lymph decreases the tension in the tissue and in that way the pain is relieved. We could have done so by massage too, but the different nature of the infection prevents us from employing this method.

There may be some who will object to this theory, on the grounds that the use of the Bier bandage, which has such a magic pain killing influence in most of these cases, produces an enormous edema, but you all know that the edema after a Bier bandage has been applied is not a hard one; it is general and effects the entire distal part. Undoubtedly the nerves themselves are infiltrated and this infiltration of the nerves in all parts causes a diminished conductivity. After all, it is immaterial in what way the pain is relieved if we only achieve this result. Some author attributes the pain killing effect of a very mild massage to a reflex. So does Mennel in his book on fractures. It cannot be denied that

such a thing is possible, as only the finest touch does it. Mennel uses Zabłudowsky's expression, "glukokinesis."

A third objection might be that the massage might stir up the microbes, and change the subacute inflammation to an acute one. This objection is partly answered in the previous paragraph. As long as the massage is given with a co-operation of the patient we do not have to fear anything. Any change for the worse would be indicated by increased pain, but that is first what we have to avoid. The massage must relieve the pain otherwise it is badly given or it is contraindicated.

About the technic there is very little to say. The extremity must be well supported and the skin covered with soft vaseline so as the more easily to prevent a strong friction. The more lubrication the better the hand glides, and the less danger of using too much force. Then we can start with the massage that can be given with the whole hand. The same rules that are known for electrical stimulation hold true, *mutatis mutandibus*, with the mechanical one. The larger the part is, on which a certain pressure is used, the less the mechanical stimulation. Only effleurage is permissible; pétrissage, and even more so tapotement and vibration, are contraindicated.

The result of the massage is an immediate one. The patient feels an instantaneous relief although it does not always last long in the first days. The treatment should be given at least once each day.

A great many people think that massage should only be given twice or three times a week. There is no logic in it. Massage helps only as long as it is given, and the effect gradually wears off. If it helps at all there is no reason why it should not help if it is given 10, 12 or 24 hours later. The effects should overlap each other and the oftener it is given (in reasonable limit) the better it is.

In the Department for Physical Therapy at the Mt. Sinai Hospital Dispensary we are giving, if necessary, two treatments daily. After 6 or 8 days, sometimes sooner, according to the tenderness, we may start with passive motions. They are most important in the treatment of gonorrhoeal rheumatism. In fact we use massage for the purpose of decreasing the pain so much that we should be able to start the passive motions. The aim is to prevent the formation of adhesions. Here some one may raise the question as to whether the formation of such adhesions can be prevented in these joints. If they cannot be prevented they can be kept within limits. On the other hand we see in most of these cases that even such joints become stiff as those which are not affected by the disease proper, for instance the finger joints in rheumatism of the wrist joint. The stiffness of these joints can always be avoided.

There are certain forms of gonorrhoeal articular rheumatism that the writer considers of toxic origin. That his opinion is not unfounded is proved by the researches of Bauer who caused in animals changes exactly like those we are used to finding in gonorrhoeal rheumatism, by injecting toxins of the gonococci into rabbits. Such toxic forms are characterized by their changeable character. The pain comes and goes. Various joints are affected for shorter or longer periods, but the ultimate result is good. In a severe case of this kind that the writer treated with Dr. A. Heyman, besides other joints both knees contained a great deal of fluid. Not quite four weeks after the onset of the disease, and twelve days after commencing the massage, the patient could walk with the aid of crutches with very little pain. This case is not quite conclusive though, as the patient was treated with vaccines too. Between the treatments the joints may be kept in a starch bandage, covered with a wet dressing as long as necessary, to protect them.

The writer wishes to impress upon you that, according to his experience, hot-air treatment and active arterial hyperemia are contraindicated in the early stages. They increase the swelling and the pain. The good influences of the passive hyperemia produced by the Bier bandage is too well known to dwell upon.

It is unnecessary to say that we must not neglect the original disease. Most of these people are suffering from an inflammation of the prostate. Especially in such cases as just mentioned the ever recurring affections of various joints are due to a focus in the prostate and it has to be treated with a massage if a lasting result is to be obtained. I do not need to say that serum or vaccine treatment should always be given at the same time.

There is one more question: When shall we start with the treatment? But the question cannot be answered for all cases. One must decide in each individual case. To say when the acute stage is over is not sufficient, as there is no sharp line between the acute and the subacute stage. This uncertainty is not so dangerous.

It is clearly understood that massage in the early stage of the disease can be given by the physician only. He has followed the developments of the disease and if he keeps the rule in mind that the treatment, carefully given, must not increase the pain, he will always be able to stop the treatment for the time being, before any harm is done, and commence it again later. At any rate one can always begin the massage in the third week after the onset.

Conclusions.

It is advisable to start with the massage of the gonorrhoeal rheumatoid arthritis, about two weeks after the beginning of the disease.

The danger of a general infection is *nil* as the gonococci in the tissue were dead about one week after the disease started.

The massage must be given by the physician only with the co-operation of the patient. The pain must be relieved immediately after the massage. Only effleurage is permissible.

Passive motions should be commenced as soon as the pain is relieved to such an extent that the patient can stand it.

SOME POINTS OF CONTACT BETWEEN OPHTHALMOLOGY AND GENERAL MEDICINE.*

By FRANK W. MARLOW, M.D.,

SYRACUSE, N. Y.

OPHTHALMOLOGY has been recognized as a specialty from the earliest historical times and has become perhaps more sharply delimited than any other. To such an extent, indeed, is this true that the people of this and many other states fail to recognize that large portions of the field which it covers belong to the domain of medicine at all, and have instituted through their legislatures special laws to regulate its practice in these particulars. Nevertheless, this specialty has more points of contact, and is more intricately interwoven, with general medicine than any other. On account of the high degree of vascularity of the eye, any systemic infection or toxæmia is prone to show itself by some characteristic lesion here. This statement is exemplified in syphilis, gonorrhœa, pyemia, tuberculosis, gout, diabetes, and in tobacco, alcohol, lead, arsenic, bi-sulphate of carbon and other forms of poisoning, including intestinal auto-intoxication. On account of its numerous nerve associations with the brain and spinal cord, diseases of these organs are particularly apt to be complicated or accompanied by ocular symptoms or lesions, and conversely on account of the abundant nerve supply and the fact that the organ of sight is the chief channel through which the mind receives its impressions of the outer world, and is therefore the excitant and regulator of many reflex and involuntary as well as of voluntary actions, the eyes themselves, when forced to work at a disadvantage on account of some error producing either intrinsic or extrinsic muscle strain, may be the source of reflex disturbances or of a condition of neurasthenia with any of its myriad symptoms.

It is obviously impossible in a short paper to deal with more than a few of the relations referred to. It is unnecessary to review in detail the eye symptoms which form a part of the symptom-complex of the many nervous affections and in many cases are important aids to

their diagnosis. Every student of medicine is familiar with the significance of double optic neuritis when associated with headache and vomiting; with the Argyll-Robertson pupil, with hemianopia, etc. It seems worth while, however, to refer in detail to a symptom-complex somewhat recently described by Foster Kennedy which may throw much light on cases otherwise obscure. It is generally conceded by neurologists that the definite localization of a tumor or abscess in the frontal lobe is a matter of great difficulty. Now, Kennedy has shown that, given a case in which the symptoms of gross cerebral lesion exist, if a retrobulbar neuritis in one eye develops as shown by the presence of the central blind area in the field, then it is certain that a tumor is present in the lower part of the frontal lobe on the same side. If the tumor originates so near the optic nerve as to exert pressure on it from the start, the central blind spot will be an early symptom, and the optic nerve will undergo a primary atrophy. If, however, the growth starts in a more remote portion of the frontal lobe, it will, or at any rate may, cause a double optic neuritis, or to use a more accurate term, a papilledema, produced by the rise of intracranial pressure, and only when the tumor encroaches and presses upon the nerve will the characteristic symptoms appear. The function of the nerve becomes disturbed and the further entrance of fluid into the optic nerve sheath will be prevented, with rapid disappearance of the edema of the optic nerve head. When it is remembered that the part of the optic nerve in the cranial cavity is only one centimeter in length it will also be seen that this symptom gives a very precise localization and it will conversely be obvious that lesions of considerable size may exist in the frontal lobe without producing this symptom. The following case is of some interest in this relation as an instance of the occurrence of primary atrophy due to tumor.

A boy, 14 years of age, referred to me by Dr. W. W. Osgood on April 12, 1909, gave a history of a fall on a stone walk four and a half years previously. This fall was followed by unconsciousness lasting one-half hour, but his health had been good since. During the past four or five months he has suffered from headaches, sometimes accompanied by nausea and vomiting, occurring three or four times a week and lasting from one to two hours, and failure of vision dating eight months back. His head is sensitive to the touch. Examination showed the left eye to be entirely blind, there being no perception of light. The optic disc was pale but gave no evidence of past inflammation. The vision of the right eye was 6/18 and the optic disc was somewhat congested and swollen at its upper edge. The most obvious interpretation of this condition at this date was that we had primarily atrophy of the left optic nerve due to pressure and an atrophy secondary to neuritis in the right. Had the patient been seen at an earlier stage, we might possibly have found precisely the condition described by Kennedy, namely, an optic neuritis or papilledema of the right eye and a central blind spot in the left field. It is, however, possible, and the conditions found at the autopsy make it probable, that the defective sight and the changes in the right optic nerve, were not due to neuritis entirely, but to

* Read before the Onondaga Medical Society, at Syracuse, N. Y., September, 1912.

neuritis followed by direct pressure on the optic nerve by the growth at a later period than in the left eye. This patient was seen on April 11, 1910, by Dr. W. L. Wallace, who has furnished me with some further details of the history. Severe vomiting continued until within one month of this date. The headache continued until about the same period. The patient died on November 25, 1910. For two months before his death he suffered from severe headaches, convulsions occurring several times a day, and total blindness. On November 26th an autopsy was made by Dr. H. G. Weiskotten and a tumor which proved to be glioma was found occupying mainly the lower portion of the left frontal lobe, infiltrating the brain and obliterating the chiasm and pressing upon the left olfactory nerve, which is evidently shrunken, and eroding the sphenoid, especially anteriorly near the left optic foramen.

In a general way the significance of this case is that a tumor may exist and cause central scotoma followed by blindness without setting up double optic neuritis, such a symptom having greater localizing value than the optic neuritis. In fact blindness will be an earlier symptom when the optic nerve is pressed upon than when neuritis occurs as a result of increased intracranial pressure, the latter condition sometimes existing for years without causing blindness.

Another group of cases of neurological and psychological interest to which attention has only been called in the last twelve years, is that known as congenital word blindness. Attention is drawn to the condition, when any notice at all is taken of it, by the fact that the child is unusually backward in learning to read. Compared with other children in the same family, the ability to read is not accomplished for several years after the ordinary period. These children are of ordinary intelligence in other respects, indeed the defect seems often to be entirely limited to the ability to learn to read words, numbers being unaffected, so that normal progress in arithmetic may be made while the child remains unable to read the simplest words. These children are brought to the ophthalmologist because their progress in reading is attributed to some ocular defect. It is very often found that their eyes are normal, that there is little or no error in refraction and that the difficulty is one of recognition or of memory for the symbols of written speech. This defect occurs about once in 1,000 children, being from four to six times as common in boys as in girls. It is attributed to faulty development of the visual memory center for words, and the cases are said by Fisher to be capable of division into two groups. One in which there is a failure of the center to develop, the other in which the center may have been impaired by a very limited meningeal hemorrhage during birth. In the first group presumably belong those cases in which more than one case occurs in a family, or in whose families bad spellers have occurred. We are all of us familiar with the fact that some of our school fellows were apparently incapable of learning to spell correctly, and these are probably cases of a low degree of the same defect. The particu-

lar point about this condition is that the defect disqualifies the subject of it for education in ordinary class rooms, individual instruction being necessary. By persistent training it seems possible to bring the center up to a good working condition or possibly to a normal efficiency although it is a well known fact that some people remain bad spellers throughout life, a defect which can only be accounted for by an imperfection in the visual memory center for the written symbols of speech. I have occasionally come across instances of this defect, a most striking one which I recall being a boy ten or twelve years of age who was brought to me because of the difficulty experienced in teaching him to read. His visual acuteness was found to be normal and his refraction was almost perfect. His sister was brought at the same time and learned to read at an early age, being in this respect many years ahead of the boy. Her visual acuteness, however, was considerably below the normal standard due to the presence of a rather high degree of astigmatism. The contrast between these two cases was quite remarkable. In one case good vision and inability to learn to read, and the other case very defective vision and great facility in learning to read. Before leaving the neurological side of this subject I wish to refer to some of the symptoms produced by eye strain; namely: irritability of temper or disposition; confusion of thought or inability to think and mental depression. Of these symptoms irritability is by far the most common and is indeed a somewhat common symptom. But definite mental disturbance is by no means rare. The following is a case in point:

Mrs. D. A. G. (37—97), aged 26 years, first seen on February 26, 1897, had been suffering for six months from vertigo, confusion in the head, "strange things passes through her mind," things that she knows cannot happen, "cannot think," and it takes a long time to collect her thoughts and observe what is going on around her. Examination showed she had astigmatism, inadequately corrected by the glasses she had previously worn, and some slight error in the muscle balance. The correction of these errors relieved her symptoms, which have, however, from time to time recurred in a milder form, always relieved by correction of the developing ocular errors. She has only had to be seen twice, however, in the past ten years. This patient thought that she was going insane when she first came to me.

I wish to conclude this paper by a brief reference to the functional disturbances of the alimentary tract which are commonly found associated with eye strain, and upon which until recently insufficient stress has been laid. The common, though probably not invariable, dependence of sick headache upon eye strain is now pretty well understood. Perhaps it is commoner for people to think that the headache is due to some stomach disturbance rather than that the vomiting is simply one of the results of neurosis, itself dependent upon some other cause. I do not, however, desire to discuss the subject of sick headache in any comprehensive manner, but

simply to draw attention to the fact that every case of sick headache does not necessarily present every symptom that is known to be possible in such cases. In some cases, for instance, the visual phenomena, the loss of one-half the field of vision, the temporary blindness in the central part of the field, the scintillating and zig-zag scotoma may be entirely absent, or the vomiting may be absent, but on the other hand an attack may be represented solely by temporary obscuration of vision, hemianopia or scintillating scotoma without any headache or vomiting or it may be represented by attacks of vomiting unaccompanied either by headache or scintillating scotoma or other indication of sick headaches, and it is to this particular phase that I want to call attention. To some of these cases of vomiting without evident cause, lasting for a short period of time and then ceasing, the name of cyclical vomiting is sometimes given, and I think there is very little doubt that some of these cases are purely functional disturbances caused by eye strain. I have seen a few cases in which vomiting occurred, lasting over a considerable period of time, resembling very much cerebral vomiting and arousing a suspicion of a cerebral tumor, in which the symptoms entirely ceased after the correction of the eye strain. The following case is a fairly good example of this type.

Miss E. G. (68—174), age 8, seen January 13, 1906, complaining of vomiting during the past month almost every morning; no headache; during the past five or six weeks has been dizzy in school; when the lamps are lit at night she complains of a sensation of glass or sand in the eye which makes her vomit; very well nourished and healthy looking child. Examination of the eyes revealed nothing pathological but showed a low degree of farsightedness and astigmatism. A cycloplegic was used. Glasses were prescribed correcting these errors. No vomiting occurred after the cycloplegic was used. I did not see her again until September 24, 1907. The glasses had completely relieved her symptoms until about this time, when she had an occasional return of nausea, vomiting and sandy feeling in the eyes. In April, 1909, she had been suffering from discomfort in her eyes for six or seven weeks and had had a slight nausea for a day or two. In September, 1910, she came back complaining of eye symptoms without any stomach disturbances.

I report also two other cases in which the relation of vomiting to eye strain was very marked.

Miss M. L., aged 17, referred to me by Dr. C. S. Williams, of Lafayette, on October 2, 1905, with a history of a gastric disturbance of a year's standing, evidenced chiefly by vomiting after meals, occurring daily. She had been under another physician's care most of the time, gradually getting worse. As Dr. Williams found that treatment directed to her stomach was without benefit and that she also gave a history of headache and poor vision, he advised ocular examination. This showed a high degree of hypermetropia and some astigmatism. Dr. Williams tells me that the gastric symptoms ceased immediately upon commencing to wear the glasses and that she had no return until she broke them six months later and was obliged to go without them when the vomiting immediately recurred, to be again relieved when the use of the glasses was resumed.

Mrs. A. L. K., aged 37, referred to me by Dr. G. W. Miles, of Oneida, on January 27, 1906. This patient had for six or seven years been suffering from stomach trouble with attacks of vomiting occurring every week or two and lasting sometimes a week at a time. She also complained of some neuralgic pain around the left eye. Examination showed a moderately high degree of farsightedness and some astigmatism. In reply to an inquiry as to her present condition Dr. Miles says: "Replying to your question as to Mrs. K., will say that her vomiting and other stomach symptoms stopped after the fitting of glasses in 1906."

The phase of the subject on which I wish to lay most stress is the frequent occurrence of intractable indigestion, of which the two last cases reported are good examples, giving rise to all the disturbing and depressing after effects of this trouble, as a result of uncorrected eye strain. During the past few years statements with regard to this condition have begun to creep into medical literature, but that the subject has not received the recognition and attention which it deserves is borne in upon one by the frequency with which one is consulted by patients who have been the subjects for many years of chronic dyspepsia, who have been treated for it by this physician and by that without any suggestion being made as to its possible ocular origin until perhaps at a very late period in the history of the case. A certain number of these patients come, and I think the number is increasing, because their physician himself has begun to suspect the possibility of eye strain having something to do with the trouble. A good many, however, come on account of ocular symptoms, and the indigestion is discovered incidentally, but a certain number come because their friends have told them of their own experiences under similar conditions. I have no desire to minimize the importance of other causes of indigestion nor will I discuss them in any way. The point which I wish to make is that there is a large group of cases of indigestion which depend primarily upon eye strain, or the neurasthenia thereby induced, which are not materially relieved by anything but the correction of the eye strain. The symptoms vary in intensity and in kind. My impression is that the commonest condition is flatulence, distention or what patients call a sour stomach. But the symptoms may be so extremely severe in character as to arouse the suspicion of malignant disease, a suspicion which may be intensified by the fact that the loss of flesh is common. I recall the case of one patient, mother of one of our Syracuse Medical College graduates, who was brought to me on account, I think, of eye symptoms. Two years later her son told me that when she came to me he and other members of the family had suspected the presence of carcinoma of the stomach, but that after the correction of her eyes the symptoms had entirely disappeared and she had completely recovered her health. A very common after symptom which is not uncommonly observed is that a very appreciable percentage of patients

make a marked gain in flesh after the relief of eye strain, that is to say that eye strain interferes with digestion and assimilation. As an example of the dependence of severe neurasthenic and gastric symptoms upon eye strain and the difficulty experienced in working out the problems presented in some of these cases, I report the following case:

Mrs. L. P. M. (641), aged 33, first seen on March 19, 1911, had suffered from headache since childhood. Has been suffering from dyspepsia, characterized by the formation of gas, distension, and depression, for five years in spite of continuous treatment. Symptoms have varied in intensity from time to time but never disappeared. With an idea that her symptoms might be due to eye strain she was prescribed glasses by a physician in June, 1910. They seem to have given some relief to her headache at first, but at the time of her first visit to me her headache was worse with the glasses and if she left them off her eyes were uncomfortable. There was no evidence of any relation between the use of her eyes for near work and her symptoms. Her headaches have become constant with exacerbations. They completely use her up and she often has to stay in bed on account of them. Examination of the eyes showed no pathological changes, normal vision, a moderate amount of hypermetropia and astigmatism which was corrected with a considerable degree of accuracy by the glasses she was wearing. She showed in addition, however, a moderate degree of latent divergence and a tendency for the *right* eye to deviate slightly higher than the left. She was examined under cycloplegia, with the result that a slight alteration was made in her refractive correction and a prism, 2° base in, was added. Practically no improvement resulted from this change; her headache remained constant but was perhaps a little less severe, the dyspepsia remaining the same. At the next examination she showed a divergence of five or six degrees in addition to what was corrected by her glasses, and a prism of one degree base in was ordered to be worn temporarily over each eye. This gave immediate relief to her headache. On the next examination, two days later, she showed about the same amount of divergence and for the first time there was a deviating tendency for the *left* eye higher than the right. It will be noted that when the patient first came under observation it was the right eye which deviated upwards. The temporary prism was now increased to one and one-half degrees over each eye. Five days later she still showed a tendency to deviation of the left eye upwards. It was now suspected that there might be a latent error present considerably in excess of what the tests so far revealed and in order to hasten the manifestation of this error I adopted a plan which I have found effective in many cases, namely, the total exclusion of one eye from vision by replacing one of the lenses by a ground glass. This makes binocular vision impossible and as a result all attempts to make the eyes work together are given up, and the muscles which have been working in the interest of binocular single vision relax and allow the excluded eye to take up its position of rest.

The same principle of course underlies all methods for the examination of faults in the muscle balance, but the time during which they are applied in the office is usually too short to allow a complete relaxation of the muscles to take place. This patient wore a ground glass for a week. At the end of that time it was removed and the condition was as follows: latent divergence 14°, deviation of the left eye upwards 2¾°. As a result of the information thus gained she was given vertical prisms in addition to the horizontal ones, with which she was quite comfortable, and ten days later permanent glasses correcting a great part of the muscle error were prescribed. These gave her complete relief from all symptoms, including dyspepsia, for two months. This was the first time that she had had any complete cessation of her symptoms for five years.

A fuller correction was now ordered which again relieved her for two or three months, but finally the errors in the muscle balance were corrected by tenotomies. This gave her a complete relief from headaches and dyspepsia and she gained 10 pounds in weight the first two months after the operation. She still tires somewhat easily and is somewhat nervous but regards herself as practically restored to health.

I have given this case somewhat of length as it is typical of many cases in which the true ocular condition can not be ascertained by an early stage in the investigation. In many cases the errors are still more latent than they were in this patient and lapse of time is a very important element in their elucidation. Amongst other details this patient's glasses were modified 14 times before a final formula was arrived at, although 8 of these changes involved the use of a temporary lenses only.

As previously stated there are good clinical reasons for thinking that eye strain may disturb any portion of the alimentary tract, thus the mother of one of my patients insisted that every time her daughter suffered from eye strain, increased salivation shown by frequent spitting was a marked symptom, and other patients have insisted that constipation was always one of the indications of some change having taken place in their ocular condition. This, subject, however, is not one for the ophthalmologists only. It would add greatly to the interest and value of such facts as I have endeavored to present, if such cases could be presented from the standpoint of the general practitioner as well.

MACULAR INFLAMMATION.*

By JOHN J. O'BRIEN, M.D.,
SCHENECTADY, N. Y.

IN diseases of the retina, the location is of great importance. A lesion above, below, or to the nasal side of the disk, and of which the patient even has no knowledge, if in the macula lutea, is fatal to direct clear vision. The acuity of the eye is at once reduced from 20/20 or better to 20/200, or 20/100, and the ability to read is lost. With these facts in mind, the three cases reported may not be without some value.

CASE I.—The first week in September, 1910, C—, a street railroad man, 24 years old, discovered that all objects seen by his left eye were distorted. Above the plane of his left eye the images were larger, below, smaller, than as seen with his right eye. This condition came suddenly, with much blurring of vision. These were all the symptoms. On September 11th the writer examined the eye. The external appearance and movements were perfect. Vision 20/50, J. 14. The cornea and

* Read at the annual meeting of the Fourth District Branch of the Medical Society of the State of New York, at Glens Falls, N. Y., October 8, 1912.

media were clear, pupil active, disk, vessels and fundus negative, except that above and encroaching upon the macula lutea there was a deep red spot about the size of the optic papilla. It was somewhat rectangular, longer vertically than transversely, with a scarcely measurable elevation. The patient was free from syphilitic taint, yet, to make assurance doubly sure, he was put on mercury and potassium iodide to saturation. The lesion was stationary. The patient's uncle placed him under care of an eminent specialist in New York City who continued the antisiphilitic treatment. In December there was no change that was noticeable to me. Shortly after this the eye was removed. The case is reported in the *J. Am. Med. Assn.*, July 15, 1911, page 217, where it is stated that the lesion was a sarcoma, and the smallest on record.

CASE 2.—This second case to which your attention is invited occurred in a patient of thirty. This also developed suddenly, and was also in the left eye. His complaint was that everything looked at with this eye was markedly blurred. The vision was 20/50, J. 12. In location and appearance the lesion was similar to that in the first case. This was on June 1, 1911. In January, 1912, the vision was 20/20, partly J. 2, and microscopically the lesion had almost disappeared.

CASE 3.—About March 1, 1912, a similar condition abruptly developed in a railroad man, 24 years old. Here the only symptom was blurring in the left eye. Vision 20/70, J. 4. The ophthalmoscope revealed a reddish brown spot below and to the inner side of the macula lutea but encroaching on the latter. It was not so large as the lesions in the prior cases; was somewhat round but otherwise similar. By the middle of May the vision was 20/30, J. 2. Two weeks later it again fell. From this on improvement was continuous. On July 1st, the inflammation had subsided, the vision being 20/15 Pt., J. 1. In neither of the latter two cases was there syphilis.

The etiological factor is somewhat illuminated by the recent histories of the patients. Even so, the probable explanation must necessarily be more or less speculative. Our city abounds in interurban trolley cars carrying headlights of dazzling brilliancy. The patients had been in repeated close relation with these lights without protection. The refractive media of the eyes concentrating these powerful light rays on the most delicate part of the retina resulted in trauma. In the macula lutea, you will recall, the inner parts of the retina are absent, the latter being reduced to the cone and pigmentary layers. It is, therefore, the most vulnerable. The hyperstimulation increased the blood supply in the underlying choroid; this, modified by the increase in the retinal pigment, combined to produce the special picture seen by the

ophthalmoscope. With the latter the most minute changes can be at once detected. The lesions, therefore, being at all times readily accessible to examination, there is neither cause for haste nor alarm. Should the lesion, instead of responding to therapy, show unmistakable signs of growth, its complete removal is quickly accomplished. That the macula in the second case did not return to normal is the result of increase in the fibrous elements of the choroid, also the pigment in the retina. This was due to the longer continued irritation than in the third case, where the shorter course of the inflammation left no macroscopic change, with complete restoration of function. The weakness of this hypothesis lies in that the right eyes were equally exposed, yet were unharmed. We are confounded by this daily. The rheumatic poison, for instance, attacks the right but why not the left shoulder? The syphilitic poison involves the right iris, why not the left? It has equal access to both.

The treatment consisted of putting the eyes at rest with atropine, but not too long continued, so as not to excite conjunctivitis. This, with the exhibition of iodine in its various forms, and every two or three weeks small doses of sodium salicylate and bicarbonate of potassium three times daily for ten to fifteen doses to increase illumination, produced the happy result measured by the useful vision in the one case, and splendid vision in the other.

NERVOUSNESS AND THE DOWD PHOSPHATIC INDEX.

By ROBERT J. TALBOT, M.D.,

THE question of prescribing a nerve tonic or a nerve sedative has from time immemorial been a question that has puzzled the practitioners of medicine in the treatment of patients with nervous troubles, especially if it is of the variety known as functional. There was no way of telling the physician, and he had no alternative other than that of empiricism. He would give strychnine and if the results were not encouraging would then reverse the treatment and use the bromides or valerian, or he might proceed *vice versa*.

Physiologically considered, it may be stated that the question of "nervousness" depends upon the metabolism of the nervous system and broadly speaking upon the amount of phosphorus, lecithin and nuclein, which substances are concerned in the nourishment and upbuilding of the nervous system taken in and excreted by the human organism. Metabolism of the nervous system shows itself by the presence of phosphates in the urine as end products of nuclein and lecithin. The phosphates are the alkaline, occurring as acid sodium phosphate and acid calcium and

magnesium phosphate to the amount of about two grammes daily and precipitated only by an alkaline solution. The earthy phosphates are in such small quantities, except under certain conditions disease of bone, that they may be ignored.

For some time Dr. Dowd, of Buffalo, N. Y., has made a study of this subject and has evolved the following theory which seems to be proven by results, and which I quote from his original articles in the *New York Medical Record*, 1908, 1909, 1910: "We have an increase of phosphates when there is a hyperactivity or irritability of the nerve cells which, if carried to an extreme degree or to a length of time, will deplete the reserve store of nerve nourishment and cause a decrease in phosphates excreted, showing itself in a relative amount of systemic prostration or what may be called neurasthenia. In such cases nerve sedatives will check this excessive activity, as is shown by decreased phosphatic elimination. We have a decrease of phosphates excreted when there is no reserve of lecithin or nuclein for the nervous system. Even with increased irritability there is a decrease and the size and shape of the phosphatic crystals may be altered."

To determine the amount of phosphates excreted and the relation between the normal and abnormal, Dowd has invented an instrument which he has called the phosphatometer, that in ten minutes will detect the amount of phosphates being eliminated, also the amount in reverse. His index, which to me has been of signal value in a large number of cases, was obtained by a prolonged series of observations on the urine of many hundreds of cases, in normal health; an average of phosphates excreted was struck and this called the phosphatic index. The urine used to determine the index must be the second passed in the morning, preferably about ten o'clock, and if possible of practically normal specific gravity.

From the Dowd phosphatometer we may find the following types:

1. Normal output of phosphates showing the metabolism of the nervous system in health and normal conditions; with the microscope the size and shape of crystals will also be normal.

2. Excessive output of phosphates as shown by a high phosphatic index, an increased metabolism of the nervous system due to hypersensibility or irritability of the nerve cells. With the microscope the crystals are small in size.

3. Decreased output of phosphates as is shown by a low index. In some cases there may be no deposit of crystals owing to the fact that there is no reserve and the system is using only a small amount it can get from the daily food, assimilation of which is hampered by the low tone, or there may be but a few which are light of weight, as is shown by their size.

4. We may have a normal amount of crystals, as is shown by N. P. of the phosphatometer, but

they may be light weight, a condition that shows an abnormally nervous balance. For those of my readers who may not be familiar with the Dowd phosphatometer, it may be described as a glass tube with graduations upon it, showing normal index, amount of urine necessary and reagent to be used. It is simple to use, inexpensive to obtain, and the results are always most gratifying, especially is this so in any obscure conditions or where other measures have failed. I apply it to at least 80 per cent. of cases, in all of which it gives valuable information. In conclusion, by means of the phosphatometer, in any case that puzzles the practitioner and especially nerve conditions, the secret is quickly disclosed and marked results follow medication as indicated by plus, an increase, or minus, a decrease.

For the former condition nerve sedatives are called for and the later stimulants, as phosphorus, strychnine, raw eggs, etc.

The following cases occurring in my practice I deem important as showing the value of the phosphatic index as an aid in diagnosis. All these patients had been treated by various methods with no result until the phosphatometer recognized the true condition and practically said what to prescribe.

Mrs. C., age 33. Losing weight and constantly tired. No ambition for any pastime and no interest in household duties. At least once a day would go into the garret and cry for ten minutes to half an hour from no apparent cause. As she explained her life was miserable, not one ray of sunshine in it. Careful examination revealed no pathological condition excepting possibly some adhesions following operation for appendicitis.

Second urine passed in the morning revealed the following: 1020 acid, no albumin, sugar, pus, casts, blood or crystals. Indican slightly increased P. I. 50 per cent. plus but fluffy. (Where the precipitate is fluffy it is due to a want of phosphorus and must be considered minus.)
Diagnosis, nerve cell starvation.

Treatment: Fl. ex. valerian gtt. 20, Dowd's comp. phos. tonic gtt. 30, in glycerine t. i. d.

Marked improvement was noticeable in about a week and in three weeks the index was N. P. She reported as feeling perfectly well.

Madame D., age 33, operatic star. At times the most excruciating pain following urination, more or less backache, leucorrhœa, cannot concentrate thought and voice, more or less affected. Considerable pain at times over the region where appendix had been removed two years ago. Rest much disturbed, no refreshing sleep, has had to leave stage on account of condition. No pathological condition found except possibly adhesions from operation.

Second urine in morning showed 1015, no albumin, sugar, pus, casts, crystals or bile. Indican slightly increased, a large amount of bladder epithelium, P. I. 200 per cent., plus but very

fluffy, showing a want of phosphorus in the nerve cells. Diagnosis, nerve cell starvation.

Treatment: Dowd's comp. phos. tonic gtt. 30 in milk three times a day. I quote her words from a letter received four weeks afterwards: "The vile-tasting medicine has done its work, I am in the best of health, no pains now and sleep fine."

Mrs. S., age 44, housewife. This lady presented a most pitiable history, of which the following were her chief complaints:

Marked insomnia, a constant backache, pains in shoulder of most excruciating character—this usually occurred at night. Tenderness along the nerve trunks showed this to be neuritis. Daily she was becoming more irritable, at times developing spells almost maniacal in nature. She was constantly losing flesh and no food seemed to be appetizing; she seemed to grow worse, although receiving almost constant medical attention. Careful examination revealed no pathological condition except possibly a slightly movable kidney.

Second morning urine was as follows: 1021 acid, no albumin, sugar, casts, bile or crystals. Indican slightly increased P. I. 150 plus, solid precipitate. Diagnosis, hypersensibility of the nerve cells.

Treatment: Bromide of arsenic and gold. Inside of a week improvement was noted, in four weeks she reported she was well and happy; at this time the index registered 5 plus, solid.

In view of the recent articles and editorials that inform us that compounds, such as hypo and glycerophosphates, etc., do not contain phosphorus, it may not be amiss to state that the mixture used in the first two cases certainly does, for it is positively proven by the phosphatometer and the fact that the patients recovered by its use.

BLOOD PRESSURE.*

By A. B. SANTRY, M.D.,

LITTLE FALLS.

I HAVE not chosen this title for my paper because of my great observation and knowledge on the subject. Rather I have chosen this title on account of my interest in the value of blood pressure, and that the mention of it in a medical meeting might be productive of some discussion that would lead us to learn more about a subject of the greatest importance to the general practitioner.

Dr. Osler has said that longevity is a cardiovascular question. To the majority of men death comes primarily or secondarily through this portal. For that reason the greatest care should be exercised at all times, but especially after mid-

dle life, to see that the circulatory organs are preserved and not weakened by sudden and unusual strain. One of the aids in the recognition of hypertension is the sphygmomanometer.

I have been taking and observing blood pressure more or less during the last five years, especially in the diagnosis and treatment of acute and chronic heart disease, nephritis, cerebral hemorrhage and tuberculosis. I have not tabulated these observations or had a system of keeping a record of the changes under treatment of all these cases during this time, but I will mention a few cases to show the value of the sphygmomanometer as an aid in diagnosis and treatment of cardio-vascular-renal disease.

My greatest trouble in the preparation of this paper has been to find any authority. There seems to be very little, if anything, in medical literature on the subject.

Blood pressure is defined in Gould's dictionary as the force of compression exerted by the blood upon the walls of the vessels under the influence of the heart's action, the elastic walls, etc. It was demonstrated by Hale in 1733. Blood pressure depends upon four factors: First, cardiac energy; second, peripheral resistance; third, elasticity of the arterial walls; fourth, the amount of blood in the circulation. Maximal pressure represents cardiac energy. Minimal pressure represents peripheral resistance (vasomotor changes), while the pulse pressure represents the head of pressure in the arteries, tending to drive the blood onward into the peripheral arterials.

Blood pressure is influenced and changed by muscular exertion, position of the body, excitement, anger, passion, digestion, etc. It may differ in the same individual in different vessels and at different hours. So, like all our instruments and methods of examination, it requires judgment, experience and skill to make the readings of blood pressure of any use in the diagnosis and treatment of a pathological condition. The most accurate blood pressure readings are made with the patient in a reclining position. The reading is from 4 to 8 mm. higher sitting and from 4 to 8 mm. higher standing than sitting. The patient should be quiet both physically and mentally. We should use the same judgment in the reading as in taking the pulse.

Normal systolic or maximal pressure in adults ranges from 105 to 145 mm. In children over two years, from 85 to 110 mm. Persons sixty-five or over may easily have a systolic pressure of 160 mm. and still be considered a healthy individual. The female is 10 mm. lower than the male.

If the blood pressure is constantly at or below 100 mm. or above 150 mm. it would probably indicate a pathological condition, or at least a condition which should be closely watched. If we are watching a patient blood pressure should be charted and taken the same time and under

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oswego, October 3, 1912.

the same condition as near as possible, so that the readings may be compared accurately and be of value as a guide in diagnosis or treatment. High intermittent blood pressure is not disease if not sustained, but is a very positive indication that the result will be disease if not corrected.

A full determination of the blood pressure involves the maximal (systolic), the minimal (diastolic) and the pulse pressures. To correctly interpret its true significance it is necessary to know these three readings.

There are two methods of determining the systolic blood pressure, the method of palpation, and the method of auscultation.

Palpatory Method.—The return of the pulse (under pressure) to the palpating fingers.

1. Palpate the artery, care being taken that the pulse is not cut off by undue pressure.
2. Slowly inflate the sleeve, observing the amount of pressure required to extinguish totally the pulse.
3. Advance the pressure slightly (about 10 mm.) above this point.
4. Gradually release the pressure until the pulse reappears.
5. The point indicated by the hand on the dial at the instant of the return of the pulse marks the point of systolic pressure.

Auscultatory Method.—The return of the sound of the pulsating artery (under pressure) to the hearing.

1. Place the stethoscope over the brachial artery about one-half inch below the lower border of the sleeve. No sound will be heard over the normal uncompressed artery.
2. On inflating the sleeve the pulsation of the artery will be plainly heard, gradually growing fainter as the pressure is increased. Observe the point of disappearance of the sound.
3. Advance the pressure slightly (about 10 mm.) above this point.
4. Gradually release the pressure until the sound reappears.
5. The point indicated by the hand on the dial at the instant of the return of the sound marks the point of systolic pressure.

There are two methods of determining the diastolic blood pressure, the method of oscillation and the method of auscultation.

Oscillatory Method.—The lowest reading taken at the point of the greatest excursion of the hand on the dial.

1. The systolic pressure having been observed, slowly release the pressure a few millimeters (3-5 mm.) at a time, so that the lowest point of oscillation may be noted.
2. The lowest point of the greatest excursion of the hand on the dial marks the point of the diastolic pressure.

Auscultatory Method.—The lowest point of oscillation of the hand on the dial taken at the instant of transition of sound from a loud, snappy tone to an appreciably dull tone.

1. The systolic pressure having been obtained, the pressure is slowly and intermittently released until a loud, snappy tone, followed by a sudden transition to an appreciably dull tone, is heard.
2. The lowest point of oscillation of the hand

on the dial, taken at the instant the dull tone appears, marks the point of diastolic pressure.

Of the two methods of determining each pressure that of the auscultatory method is the more accurate and scientific.

The most important part of the technique is to note the diastolic pressure and to find the difference between diastolic or minimal and systolic or maximal pressure. This difference is the pulse pressure. Dr. Hershfelder of Johns Hopkins Hospital has found it to be commonly from 30 to 40 mm. in health. Anything below 20 mm. or above 40 mm. would indicate a disturbance in the circulation, and the physician should endeavor to find the cause of this disturbance.

Mr. S., sixty-three years of age, height 5 ft. 7 in., weight 230 lbs., some arterial sclerosis, enlarged heart area. After a long walk he had dyspnoea and could not sleep in recumbent position, no cough, anasarca in the legs, some ascitis and distention of abdomen, lung slightly edematous, pulse 100 to 120, urine scanty, no casts, no albumen, distressed appearance, S. P. 220, D. P. 140. Gave nitro-glycerine and strychnine and in ten days S. P. was 200, D. P. 160, and he had no relief. Anascora increased. From my little knowledge of blood pressure I was afraid to give digitalis on account of the high S. P. of 220 mm. The patient grew worse and I finally gave him infusion digitalis and kept up nitro-glycerine. Next reading, two days after, systolic pressure was 220 and diastolic pressure 160, and he began to feel comfortable.

Now, this case shows the importance of reading D. P. and finding pulse pressure and not to depend on your S. P. alone. This man needed that high S. P. and when I reduced it he became worse. In the beginning of arterial sclerosis the authorities say that the pulse pressure is always high. The S. P. and D. P. may be normal. Now, if we know the pulse pressure, we will discover heart insufficiency and kidney trouble long before we could by the stethoscope or by urinal analysis. This gives us a chance to be of service to many complaining people whom we may have called neurasthenics.

I can report a case to show you that we may discover by blood pressure readings, and thus remedy by treatment, a condition of the circulation which might have caused cerebral hemorrhage. Mrs. J., mother of a physician, who on visiting her early in February, 1912, found her suffering from hypertension, S. P. 210, D. P. 100. On February 18, 1912, he asked me to observe her pressure and follow out treatment. She was a hard-working woman, sixty years of age, height 5 ft., weight 155 lbs., heavy meat eater, pulse, temperature and respiration normal, urine normal, no albumen, no casts, no appreciable arterial sclerosis. She complained of dizziness and shortness of breath on walking fast. The heart sounds normal, S. P. 180, D. P. 100. We cut down the diet, excluding beef, limited the amount of water and fluids, kept

bowels open, ordered one hot bath a day, gave nitro-glycerine 1-100 and Ki. ten grains, three times a day. Blood pressure was taken about every week until June 1, 1912. Following are the readings by months: March 18, 1912, S. P. 155, D. P. 82; April 18th, S. P. 145, D. P. 85; May 18th, S. P. 140, D. P. 86. She reduced in flesh about 10 to 15 pounds and felt very much better and now continues to be comfortable, although her pulse pressure is high and she is yet no doubt in danger of increasing arterial sclerosis and cerebral hemorrhage. I have not observed blood pressure in obstetrics, but the best authorities claim that continued high S. P. of 150 mm. or over is indicative of eclampsia even in the absence of albumen. I have observed blood pressure in tuberculosis and have been able to confirm suspected cases by the low S. P. and pulse pressure.

CLINICAL REPORTS OF TEN CASES OF PULMONARY TUBERCULOSIS IN CHILDREN TREATED WITH MIXED BACTERINS.*

By LOUIS C. AGER, M.D.,

BROOKLYN, N. Y.

ALTHOUGH recent investigators have shown that the tubercle bacillus alone may produce the destructive tissue changes in the lungs commonly found in phthisis, it is generally believed that such changes are usually produced by the secondary invasion of various pyogenic organisms. If this is true, and if the pathological process is almost entirely local, the use of the bacterial vaccines is indicated, theoretically at least. Although many experimenters have claimed to accomplish good results from the use of bacterins in cases of general infection in which there is a true bacteraemia present, such treatment seems to have no logical foundation. The reason advanced for introducing into the circulation the toxins of a disease from which a patient is already suffering is that the reaction to the toxin is largely local and that the active, acquired immunity is also largely local. If therefore, a general systemic reaction can be produced we may expect to secure a systemic immunity.

In spite of the recent reports of Pettitt and Brown, I have been convinced by the investigations of Avery (some of which I have been fortunate enough to observe personally) that the secondary organisms are practically never found in the blood of phthisical patients, even in the terminal stages. If that is true pulmonary tuberculosis is almost entirely a local process and the mixed vaccines ought to be of benefit. With

these facts in view, I treated the following patients in the Brooklyn Home for Consumptives.

	Sex.	Age.	In Home.	Type.	Stage.	Temperature Range.
1.	F.	9	1 yr.	Chronic	1st	99-101
2.	F.	4	6 mos.	Subacute	1st	99-100
3.	M.	8	10 mos.	Chronic	1st	98-99.2
4.	F.	8	8 mos.	Subacute	1st	99-100.4
5.	F.	9	2 yrs.	Subacute	2d	99-100
6.	F.	14	4 mos.	Subacute	2d	99-100.4
7.	F.	5	3 yrs.	Chronic	3d	99-101
8.	M.	10	3 mos.	Acute	3d	99-104
9.	F.	11	6 mos.	Subacute	3d	99-101
10	F.	18	2 yrs.	Spbacute	3d	99-101

These ten patients were selected for the following reasons. They had all been in the Home long enough to show the extraordinary improvement which removal to proper conditions always produces in children, no matter how advanced the case. They all showed active lesions. They represented different types and different stages of the disease.

The bacterial vaccine used was Mulford's Mixed Influenza Bacterin, made up as follows:

B. Influenzæ	12,500,000
B. Friedländer	12,500,000
M. Catarrhalis	12,500,000
Pneumococcus	12,500,000
Diphtheroids	25,000,000
Streptococcus	12,500,000
Staphyloc. alb.	50,000,000
Staphyloc. aur.	50,000,000

This product was selected because it contained the organisms that we had occasionally found in washed specimens of sputum from the Home. We were indebted to the Mulford firm for our supplies.

The first dose in each case was two-fifths of the amount tabulated above. The second dose was three-fifths. The third dose was twice the amount, the fourth was four times, and the fifth and last dose was eight times. The intervals between doses were four days each. This dosage might well be criticized for its rapid increase if any reactions had been observed.

Results. No definite reactions were observed in any case. Two children complained of slight muscular pains after the first injection. A careful study of the four hour rectal temperature charts showed no special changes in any case. In four patients there were slight changes that might be attributed to the treatment, as follows:

Case No. 8 was of an acute septic type with evidences of miliary infection. His temperature ranged somewhat higher and the progress of his disease was somewhat more rapid after the course of treatment than before, but this acceleration is often observed toward the close of acute cases. He died one month after the treatment and autopsy showed a general miliary infection of the whole body, apparently following an older process located in the upper right lobe. The

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tracheo-bronchial glands did not appear to be the primary seat of infection.

Case No. 2 showed decided improvement immediately after the treatment. All rales cleared up. The cervical glands became acutely affected however, and had to have surgical treatment. It is possible that the lung improvement was merely the change that might be expected in such an early case. It is also possible that the improvement was due to the focalization of the infection with pus formation, in the cervical glands.

Case No. 4 is one of those chronic cases with a decided tendency to subnormal temperature. He has some involvement of the retroperitoneal glands and has had some fluid in the abdomen at times. His hemoglobin has been as low as 35 per cent. in the past. On Dec. 16th, the blood was as follows: Red cells 3,900,000; white, 13,000; hemoglobin (Sahli), 52 per cent. Since the treatment in January and February he has been better and the active lesion in the neighborhood of the right nipple has become almost inactive. His temperature shows definite change also. It is more frequently subnormal and reaches a lower level,—not infrequently 96.2 by rectum. Here again, however, we are dealing with the type of case that is likely to show marked variations at any time regardless of treatment.

Case No. 10 is a subacute third stage case complicated with a double congenital heart lesion. Although she is 18 years old she has never menstruated and is mentally like a girl of 12. After the second dose she had a slight attack of pains and chill which might be called a reaction. Immediately following it there was a decided decrease in the number and extent of rales in her chest, but at present I see no reason to think she was really benefitted.

Conclusions. The only positive conclusions that can be drawn from a few cases like these is that this particular bacterin bears no special relation to these particular cases. It is quite possible that autogenous vaccines might have shown a definite reaction. It seems advisable to put all such experiments on record.

Discussion.

DR. E. G. WHIPPLE, of Rochester, said: It is to be regretted that Dr. Ager has not had greater success in a line of therapeutics which appears on the surface so rational. There seems to be but little doubt that, by the time we are able to demonstrate tuberculosis of the lungs in children, or in adults, from physical signs, we have, at least clinically, signs of a mixed infection. Were it a simple, straightforward tuberculous lesion, theoretically we ought to get results from tuberculin, and in cases where we can demonstrate a mixed infection, working on

the same theory, we should get results with a mixed bacterin. My experience with the so-called specific measures has been too limited to discuss this phase of the subject in detail, but it seems to me that until we are better able to measure the relative amount of a given infection and its toxins in a mixed infection, we cannot accurately measure the relative amounts of each bacterin to be given in our mixture. It is true that the opsonic index is of value for this purpose, but it is of value only to the trained physician, or one who has a laboratory and an expert at his disposal. The general practitioner has neither, and he is the man often called upon to treat this condition and least able to do it safely by specific therapy.

I firmly believe that specific treatment will soon be perfected and within the reach of all of us to give to children and adults, but in the meantime we should make the best use of the non-specific measures at our disposal, which we know result beneficially in so many cases.

Tuberculosis is a problem of the pediatrician. Tuberculosis is truly incipient in the majority of cases only in childhood. Pediatricians have not been as active in the tuberculosis warfare as the importance of this disease in their field of the work would warrant. It is true that everything done by him to carry a human being through life from birth to puberty and present him to the adult world as a healthy "grown-up" is of greatest importance in the prevention of tuberculosis. The work for clean milk and milk free from the tubercle B., the prevention of infectious diseases, and the various other measures of prevention are all active measures for the prevention of tuberculosis. But as a body, physicians specializing on the child have not united to fight tuberculosis as have other physicians, or even some social agencies. If we cannot admit that all cases of tuberculosis start in infancy, we must admit that many do, and, in addition to treatment of the child actively tuberculous, we must feel a graver responsibility to so keep the resistance of the child up to such a degree that he can enter adult life with more resistance than has the present generation.

As to the treatment of the tuberculous child, specific measures, theoretically at least, offer us a most rational line of therapeutics. Specific treatment can and should be given only after we have made a positive diagnosis and mixed bacterin therapy, administered only when we know the nature of the organisms accompanying the tubercle B. As it is impossible in many instances, perhaps a majority of the cases, to make a positive diagnosis of tuberculosis in childhood, especially early childhood, and relatively more difficult to determine the nature of the concomitant infection, mixed bacterin therapy does not as yet seem to me to be warranted in children as a routine procedure. To give bacterins alone or mixed, trusting that we will hit the offending

bacteria and do no harm if the special germ is not present, does not seem to me to be scientific medicine nor specific therapeutics. We are in no doubt about the harmful effect of an influenza infection upon a tuberculosis process. It would seem that specific therapy directed against this organism will materially assist the individual to overcome the tuberculous infection as well as the influenza, but that the presence of the influenza B usually presupposes a concomitant infection with possibly the pneumococcus, staphylococcus or streptococcus, and whereas bacterins directed against the influenza B. may assist, this treatment will not prove specific in any case of multiple infection. I still believe that until we can place specific therapy within the reach of the general practitioner, and until we can more definitely know the nature and relative amounts of the mixed infection, we must still use the non-specific measures in the treatment of pulmonary tuberculosis in childhood, if we wish to obtain results. As a body of physicians we should be more conservative lest it be understood that we advocate specific therapy generally instead of in the exceptional case, and by all physicians instead of by the exceptional one.

I would like briefly to emphasize the plan of treatment of tuberculous children as carried out by the Rochester Public Health Association in this city. Our procedure may be considered under the heads of treatment of the child with tuberculosis and the treatment of the child predisposed to tuberculosis, or the curative measures and the preventive measures. The treatment of the actual tuberculous child differs in no way from that of the adult—segregation in the hospital, under proper supervision, constitutes our plan of treatment. We are especially fortunate in having at our disposal one of the best tuberculosis hospitals in the state, which has now a pavilion for tuberculous children. In addition to the routine treatment, these children receive an education, the pavilion being an open air school. Many children with tuberculosis, especially the younger ones, are unable to be apart from the parents. In these cases, home treatment is necessary, and this is done under the supervision of a visiting nurse, but it is a very unsatisfactory method of treatment.

Treatment of tuberculosis in childhood cannot be separate from the treatment of the adult, for the proper care and treatment of the adult is our most important measure of prevention of tuberculosis in childhood. Here again, the value of the county tuberculosis hospital is demonstrated, for there the adult is segregated and the source of infection is removed from the younger members of the family. The tuberculosis dispensary with the visiting nurses, the medical school inspection, along with the co-operation of the principals and teachers, give us our recruits. Through the dispensary, adults are discovered, and then a visit into the home by the nurse brings

the children, or at least some of them, to the dispensary for examination and subsequent supervision. The child with signs of infection is treated, as has been described, but all the other children, so far as is possible, are sent to another open air school where there are no cases of tuberculosis, and which may be considered as a preventorium-school in contra-distinction to the sanatorium-school at the county tuberculosis hospital. The children at the preventorium-school are given fresh air, extra food, rest and graduated exercises. The children remain in this school on an average of one year and then are returned to the public schools. A follow-up system is necessary, if we wish to prevent a relapse to the previous run-down condition of the child, so he is asked to report to the dispensary once a month after leaving the school. It is impossible to prevent a return of the old condition in many cases, mainly because the child returns to a diet of so much less food value, and to home surroundings anything but hygienic. We believe that, unless the children considered as predisposed are first relieved of their physical handicaps before entering the school, or taking preventative treatment, they show less beneficial effects from this treatment and are more prone to relapse after leaving. To meet this situation, the Health Association removes the tonsils and adenoids when necessary, corrects abnormal eye conditions, cares for diseased ears, outlines treatment for nervous conditions and corrects the orthopedic defects of every child before they enter the school. It is further required that the oral cavity be cleaned and properly cared for before admission.

It is not only the child of tuberculous parents, or one known to have been exposed, that needs our attention. The anemic, poorly fed child is, in the majority of instances, already infected with tuberculosis, and whether or not he is to become a tuberculous adult, depends largely upon his environment and care while a child.

By segregation of the adults, correcting the physical defects in the child, and then placing him in proper hygienic surroundings, tuberculosis is prevented in many instances. My plea is, first, for segregation of the tuberculosis adults, medical school examination, not inspection, removal of the physical handicaps found, then proper environment for one year at least, and finally, subsequent medical supervision—all within the financial possibility of every municipality. When these things can be done to all children, rich and poor alike, we will have attained the ideal, until specific treatment is at our disposal. The pediatrician has it within his power to urge these measures to the public and to his private patients, and, if he assumes responsibility of the care of the child, it devolves upon him to put into effect all possible measures of prevention.

THE PHYSICIAN AND THE LABORATORY.*

By WARREN B. STONE, M.D.,
SCHENECTADY.

NOT so long ago a physician, armed with a microscope and a few re-agents, was fairly well equipped to do his routine laboratory work, and felt it necessary, only on rare occasions, to call upon an established laboratory to aid him in the diagnosis of his cases, but of late years the number of scientific laboratory procedures has enormously increased, and the technique of many of these is so complicated that the physician (who wishes to keep abreast of the times and give his patients the benefit of the latest advancements in our science) is more and more frequently obliged to consult the laboratory. Not only to help him in his diagnoses does he call its aid, but occasionally he requires the use of stock or autogenous vaccines to help overcome an obstinate infection.

It is not to be denied that some physicians are possibly becoming ultra-scientific and, perhaps, do a great amount of injury by the multiplicity of the examinations and their attending fatigue and possibly pain.

Some of the laboratory tests, although often of the utmost value, are at times of only negative worth, the Widal reaction in typhoid fever is one of the most tantalizing, because it is rarely present before the eighth day (a fact which many physicians absolutely ignore), and in many cases it is never present or can be found only when the examination is made daily, and extended over a considerable period of time. A Widal examination, it should be remembered, is a quantitative test, and that means that a certain amount of serum or dried blood is diluted with a certain amount of typhoid culture so that the blood should be collected in a glass capillary pipette or else a drop of blood should be transferred by a wire loop of standard size to a glass slide or piece of aluminum which are furnished by the laboratory. It has been our experience many times to receive drops of dried blood of various sizes with a request that a Widal examination be made. I ask, "how is it possible to make dilutions of one to twenty, one to forty or more, as the case may be, when the size of the drop is not known?"

We are now well advanced in the age of preventive medicine, and the physician is closest to the tuberculous patient, and is the one to advise him of the danger to others of the careless disposal of sputum, but time and time again we have received in our laboratory specimens of sputa in an ordinary four-ounce medicine bottle with its narrow neck. We also receive it at times in a glass, upon tissue paper, and in tin cans with a piece of newspaper carelessly

* Read at the annual meeting of the Fourth District Branch of the Medical Society of the State of New York, at Glens Falls, N. Y., October 8, 1912.

wrapped about it. A physician with his knowledge of the infectiousness of the sputum ought to be ashamed to thrust upon a colleague a specimen collected in this dangerous and disgusting manner.

Specimens of tissue for histological examination should be received at the laboratory in a good state of preservation in order that they may be sectioned and stained properly. If the specimen can be sent to the laboratory immediately it should be wrapped in a bit of moistened gauze, otherwise, the best all round preservative is a ten per cent. solution of formalin. The routine work is done by making frozen sections, so that if the tissue is dropped into alcohol more or less time is lost in washing out the alcohol which, of course, will prevent freezing if even a trace is present. Usually the physician will not ask his patient to undergo the discomfort and distress of having a bit of tissue removed unless he fears that he is suffering from a more or less serious condition. Under such circumstances he owes it to his patient and to the laboratory to furnish a specimen that will be of use in clearing up the diagnosis, but some physicians, for an unaccountable reason, seem possessed to take as little tissue as possible. In a suspected cancer of the cervix, for instance, it is easily possible to take a small segment about the size of a pea so that a section of fair size can be made, but all laboratory workers know how rare it is to receive tissue of a suitable size. Very often the piece is scarcely larger than a pin's head so that the pathologist is often in a state of greatest anxiety until the section is made, stained and mounted (in dire fear that some accident may happen to the tiny morsel). I know that if physicians understood the desirability of sending in larger specimens they would do what they could to relieve us of this discomfort.

Another matter of which I wish to speak is that of urinalysis. What is more prosaic and deadening to the intellect than to be confronted by half a dozen specimens of urine in various states of preservation, or rather decomposition, some of which are sure to be ammoniacal so that the sediment is composed almost entirely of bacteria, triple phosphates, and the more delicate structures such as casts, blood cells and renal epithelium are either hidden by the abundant sediment, or perhaps dissolved by the ammonia. It is, therefore, essential that the specimen be sent to the laboratory at the earliest possible moment after voiding, and if considerable time must elapse before receiving, some preservative may be used such as a few drops of formalin or chloroform, or ten grains of chloral to the ounce. It must, however, be remembered that if the percentage of sugar is desired, no preservative should be added as the routine method of determining the percentage of glucose is by fermentation.

In breaking up the monotony of routine urinalysis it is wonderful what interest a few words of explanation of the case will do. I believe that better work will be done, and much more of interest and value be found, for the physician if he took the laboratory worker into his confidence and with each specimen give a few words of explanation. It will certainly remove a tedious period in laboratory work, and will enable the pathologist to gather and store up a considerable amount of information that may at some future time be of the greatest value to others.

I am especially earnest in making this plea for a closer relationship between the physician and the pathologist; it will certainly be of greater immediate worth to the physician and patient, but by far the greatest value will arise, as I have above stated, in the vast amount of useful knowledge the pathologist can acquire, as he not only can ascertain what the tissue or fluid may show, but can have some idea of the symptoms of the patient and the relations between symptoms and pathological findings.

Oliver Wendell Holmes likened a post mortem to the study of a spent rocket on the 5th of July, and it is more or less so, if we know nothing of the life history of the patient nor of the fatal illness.

With the knowledge an accurate history will give, the necropsy becomes a study of keen interest, and has led to discoveries of the greatest value, and so it is with pathological examinations of substances derived from the living. I state with assurance that when we have closer and more intimate relation between the physician and the laboratory, then will the value of the laboratory to the community increase with rapidity, and the pathologist will not merely be making a Wassermann test for Dr. So and So or a urinalysis for another doctor, but will also be engaged in research work of exceeding interest and will be enabled to collect, store and classify material which will be of constantly increasing benefit.

I apologize for this rather disconnected paper which was written somewhat at random, but points which I have mentioned I know will meet with the approval of those of us who have experienced the tedium of laboratory work.

ANTITOXIN IN DIPHTHERIA.*

By JOSEPH R. CULKIN, M.D.,
ROCHESTER, N. Y.

WITH the discovery of the Klebs-Löffler bacillus and its toxin, the step was but a short one to diphtheria antitoxin, and with this discovery one might say that the last

important work had been spoken on diphtheria, but some clinical points of practical importance may still be discussed with profit.

We may all agree that the bacteriological diagnosis is the only sure way to diagnose diphtheria, but when we have a negative report, or even two or three of them in a case of manifest diphtheria, it is important for the clinician to rely on his own diagnosis and to use antitoxin freely until the case is cleared up, when he may get a late positive culture.

A negative culture from the Health Board may lead a family prejudiced against antitoxin to forbid its further use, and so valuable time is lost waiting for more cultures. When I discover this frame of mind in the parents, I make it a rule to use a very large dose of antitoxin in the first instance, and I find this plan to work well. I have on several occasions had reported negative cultures in cases of diphtheria, which later showed the paralysis which is quite characteristic of diphtheria. In a number of laryngeal cases of great severity, with no membranes in the pharynx, a negative culture has been returned, and the cases were saved only by intubation and plenty of antitoxin. In a couple of these cases the larynx was filled and membrane was only seen when dislodged on putting in the tube.

A practical failure to obtain cultures of Klebs-Löffler bacillus may be due to the fact that the throat is full of mucus with which the swab becomes laden and so does not get at the membrane proper, or the portion of the membrane rubbed over or obtained does not contain the germ, or the use of powerful antiseptics immediately before the swab is used, may perhaps cause failure. I now forbid the use of antiseptics until after the culture is taken. The types of germs accepted for a positive culture have become more limited, and then, too, we have the human element of the pathologist doing the work which is a varying quantity.

Now I do not wish to be interpreted as saying aught against the culture method, as it is a great and wonderful advance over the old way, but I wish to emphasize the need of relying on your clinical diagnosis and treating the case energetically while waiting for your pathological returns. The physician should have the courage of his convictions and do his whole duty and use antitoxin even in face of a negative culture.

Much advance would be made were men in the habit of taking cultures in the mild cases which do so much to spread the disease. Relying on one negative culture in a diphtheria case is a dangerous thing, as I have seen in many cases. A failure to find the gonococcus or tubercle bacillus on one examination, would not exclude the disease, and the same reasoning holds good in diphtheria.

The nasal carriers are a potent factor in keeping up the spread of the disease, and they should be sought for with great care, particularly in

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

institutions. In an institution under my care, we found several nasal cases which presented the single symptom of a running nose. Immunization is powerless against those cases, for the immunity runs out, but the nose still runs and causes fresh infections. Several cultures of the nose and throat should be taken before the child is free to mingle with his fellows, as I have found positive cultures in discharged children on several occasions. Cultures from nose and throat should be negative at least twice before discharge from quarantine.

The fact that many germs which infect the throat and produce more or less epithelial necrosis and outpouring of serum, and consequently much membrane, and a picture which looks like diphtheria and may well deceive the cleverest clinician, should teach him to rely on well-made cultures for his final diagnosis, but for treatment let him use the harmless antitoxin until the diagnosis is established. As an instance of the above condition, I saw a syphilitic throat deeply ulcerated and covered with membrane which had been diagnosed diphtheria by several men who had seen it. A careful history and its long duration should have saved them from error. The throat was negative for diphtheria. In another case of Bright's disease in which the patient had been salivated, the whole tonsils and pharynx were covered with membrane, apparently diphtheria. While not believing in its diphtheretic character, it was so severe that large doses of antitoxin were used until several cultures were made and returned negative.

I could give many more instances of apparent diphtheria in which the diagnosis could only be made by a culture. Septic throats from any source are safely treated by antitoxin until a diagnosis can be made, but unfortunately antitoxin has no control over the purely septic side of these cases, and they furnish quite a large percentage of our deaths. It is well to remember that diphtheria may be the germ which makes the final assault in terminal cases.

The treatment of diphtheria is, of course, antitoxin and plenty of it given as early as possible. Do not dribble it out, as I have seen men do, but use it freely. I have seen many an almost moribund case in which 1,000, 2,000 or 3,000 units had been used, brought to St. Mary's Hospital, when the early use of sufficient doses would have saved the cases. In marked pharyngeal and tonsillar cases at least 10,000 units should be used; in naso-pharyngeal cases 15,000 units, and in laryngeal cases 20,000 units, to be repeated in twelve hours if results are not apparent.

It is well to remember that the diphtheria you see may be only a small part of the existing infection, particularly in nasal cases. Laryngeal and nasal cases should be sharply treated—the former if we are to avoid lung involvement, the latter on account of the rapid toxemia and its

way of invading the sinuses of the face and head.

It is well to examine the lungs with care in diphtheria as the throat may be clearing but the lung is invaded, and a fatal termination can only be avoided if the broncho-pneumonia is due to the Klebs-Löffler bacillus, by the use of large doses of antitoxin. In a young woman with pharyngeal and laryngeal diphtheria, 10,000 units cleaned the larynx and pharynx well, but the temperature kept up, the pulse grew weak and the respirations were rapid. On examination, a patch of broncho-pneumonia was found. Twenty-six thousand units were used and an almost immediate improvement took place and the girl got well, but expectorated two or three casts of the small bronchial tubes. A child at St. Mary's Hospital in this city presented a similar picture. A large dose of antitoxin cured her.

The unseen diphtheria is a factor of great importance in giving us a large death rate, and the only way to meet it is by efficient use of antitoxin. In a little lad of six years of age, seen on the eighth day of diphtheria, with a dilated heart, rapid pulse, great prostration, marked anemia, petechial spots and the throat still partially covered with rotten membrane, nose stuffed with membrane, and well-marked broncho-pneumonia, large doses of antitoxin (32,000 units) saved him, but he was months in getting over his paralysis and myocardial condition. Now, a dose of 6,000 to 10,000 units in this case would have failed, but a large dose saved him.

The use of diphtheria antitoxin has been very efficient in preventing the incidence of any but the existing case of diphtheria in those families which come under my care. If the throat becomes infected after the use of antitoxin in immunizing doses, the case is slight and easily controlled. I have had to immunize the inmates of an orphan asylum, some of them three or more times, but have had no bad symptoms from it.

In a recent epidemic we had 40 cases of diphtheria, and all recovered, because each throat and nose was inspected each day, and doses of antitoxin given on the first day, so it was easy to keep the death rate down. After we had immunized the inmates, no fresh cases of diphtheria occurred among the immunized until the period of immunity ran out. During this epidemic we had 42 cases of measles and 39 cases of scarlet fever. Each child was immunized with 1,000 units in measles, and a larger dose was used in the scarlet fever cases. The scarlet fever cases were free from diphtheria except in one case. The measles entirely so. All recovered, in spite of the fact that several had pneumonia, measles and scarlet fever at the same time. This was doing very well in the presence of the epidemic of diphtheria, and I am sure that the incidence of diphtheria would have been large and the death rate high, had it not been for our free use of antitoxin. The epidemic was due, I

believe, to the presence of nasal carriers which were found by examining each nose which discharged at all.

The prejudice against antitoxin does not seem to abate, and all sorts of things such as paralysis, heart disease and imbecility are charged against it, but the use of a sufficient dose early does much to diminish this, and I would plead for an early use of an efficient dose. In cases seen in an almost moribund state, it is futile to use antitoxin unless one is prepared to use enormous doses at once, as less than these large doses only tends to have antitoxin charged with the deaths sure to follow.

Discussion.

DR. MATTHIAS NICOLL, JR., of New York City, in discussion, said: I congratulate Dr. Culkin on his firm attitude in reference to the importance of giving antitoxin at the earliest possible moment that diphtheria is suspected and in sufficient doses. I hope that in this respect his opinion is representative of that of the majority of physicians throughout the state. No real harm to the patient will follow a dose of antitoxin in any event, and frequently a grave danger may be thus averted. The value of a bacteriologic diagnosis of diphtheria in a slightly developed case is beyond dispute, but in characteristic and in all severe cases of apparent diphtheria, the clinical findings should be our guide in regard to treatment, and on no account should there be a delay of eighteen hours or more in giving antitoxin while waiting for culture returns. As regards the inconsistencies of such reports I would say that in cases of pharyngeal and tonsillar diphtheria, if culture material has been properly taken, not too soon after local applications to the throat, and a suitable culture medium used, there can but rarely be a legitimate excuse for failure to find the diphtheria bacilli. Pure laryngeal cases, especially at first, give notoriously frequent, negative cultures if these are made in the routine way. If, however, the swab be slightly bent and a culture made directly from the interior of the larynx this error will be largely avoided. Nasal cultures frequently show such a variety of organisms and often those resembling very closely true diphtheria that a positive opinion is often difficult for the bacteriologist to arrive at. In a young child convalescing from scarlet fever or measles especially in a hospital a profuse purulent nasal discharge calls for the immediate administration of a large dose of diphtheria antitoxin, a culture being taken at the same time. This is the routine proceeding at the Willard Parker Hospital. The importance of making direct smears in addition to a culture is not generally recognized. In this way only can a correct diagnosis be made of such cases as Dr. Culkin has referred to, namely, obscure, ulceromembranous conditions often mistaken for diphtheria which are most frequently due to anaerobic or-

ganisms, not growing of course on the ordinary culture tube. Such cases are reported as negative for diphtheria, but the real cause is not determined. Vincent's angina is a notable example of this class of case. In regard to immunization, we give 1,000 units of antitoxin to every case of scarlet fever on admission at the Willard Parker Hospital, and if the patient is exposed to diphtheria by the presence of patients in the same ward having diphtheria as a complication, the dose is repeated at weekly or longer intervals. The same procedure is now regularly carried out in measles epidemics in New York institutions with the result of a great lowering of the mortality from complicating diphtheria formerly so frequent and fatal.

In reference to the dosage of antitoxin, the amount suggested by Dr. Culkin is somewhat larger than that given as a routine at the Contagious Disease Hospitals of New York City, although it will readily be conceded that an unnecessarily large dose is vastly preferable to an insufficient one. I believe that more than 10,000 units in children is rarely necessary, since with this dose the blood is known to contain an amount of antitoxin which is more than a hundred fold sufficient to neutralize any conceivable amount of toxin which is capable of being neutralized.

In reference to a second dose of antitoxin in twelve hours, Dr. Wm. H. Park has had two charts prepared, in order to demonstrate the time required for the antitoxin to reach the blood stream and the amounts of antitoxin contained in the blood at different periods of time. The first chart represents six cases of diphtheria all of which received 10,000 units of concentrated antitoxin subcutaneously. The chart shows that it reaches the blood stream slowly but steadily, increasing, however, up to the third, fourth or fifth day after injection, when there is present a very large amount, and then slowly decreasing. Therefore, if a second dose be given twelve hours or later after the first, the beneficial effects, which may be attributed to it by the physician really are due to the continued absorption of the first dose, the second dose only gradually contributing its share to the ever increasing antitoxic content of the blood from the first dose.

The second chart represents four diphtheria cases all of whom received 10,000 units of antitoxin intravenously. It shows very plainly that by this method a huge amount of antitoxin goes into the blood stream at once and immediately decreases, in contrast to what takes place by the subcutaneous method, and yet there is an all sufficient quantity in the blood for a week or more.

The moral is, give as large a dose of antitoxin as you think necessary, at the earliest possible moment; and do not depend on repeating the dose to produce definite results. If, however, you feel that the initial dose was not

sufficiently large give a second one, but give it intravenously. Also give antitoxin intravenously in all cases which are in desperate straits from the severity of the disease or from neglect of treatment.

In regard to the beneficial effect of antitoxin on complicating pneumonia, I feel that it is so difficult to establish definitely the presence or absence of a pneumonia in intubated cases in which it most frequently occurs, that the apparent cure of the lung lesion is most often due to a mistake in diagnosis, for I cannot conceive of an antitoxin influencing a disease invariably caused wholly or chiefly by organisms other than those for which it is a specific.

DR. JEROME S. LEOPOLD, of New York City, continuing the discussion, said: I also should like to congratulate Dr. Culkin on his paper in which he has shown the very great importance of giving antitoxin early enough in cases of diphtheria. In this way a great number of lives may be saved.

I should like to say a few words on *immunization* in diphtheria. In New York City if a child has been exposed to diphtheria or if it is likely to be exposed to diphtheria we give it an immunizing dose of 1,000 units of antitoxin. This dose usually confers immunity for about ten days or more. If there is any danger of infection after ten days, we repeat the dose. The dangers, of anaphylactic shocks have, in our opinion, been very much exaggerated. Unless a child suffers from asthma or has what is known as an "asthmatic diathesis" there is absolutely no danger of anaphylactic shock. We have never seen a case of anaphylactic shock, and according to Dr. Park these cases are very, very rare. In a certain number of cases after an injection of antitoxin there results what is known as the "Serum Disease." This consists of a slight rise in temperature, general malaise, an urticarial eruption, and at times some nausea and vomiting. These symptoms are as a rule very mild. Therefore, it seems to me that the question of anaphylaxis and its dangers may be disregarded in antitoxin administration.

Authorities are by no means agreed what dose of antitoxin should be given. Some years ago when I was in Vienna I observed that many mild cases of diphtheria were not given any antitoxin at all, and these cases recovered completely from the disease. In Boston, as is well known, it has been the custom to give moderately large doses of antitoxin, and repeat these doses at frequent intervals. In the west at times 100,000 or more units of antitoxin are given in a single case of diphtheria. In New York City, on the other hand, as Dr. Nicoll has said, we believe in giving one dose of antitoxin large enough to combat the disease and we rarely if ever repeat the dose. We believe, after the researches of Dr. Park, that a child rarely needs more than 10,000 units of antitoxin and an adult

rarely more than 20,000 units. It is very important to give the antitoxin early enough in the disease. A few hours' delay may mean the death of the child.

In conclusion I should like to say a word about some recent interesting observations that have been made abroad. It has been shown that the centrifugized sediment of the urine of diphtheria patients often contains diphtheria bacilli. Beyer, in the most recent contribution to this subject, has reported positive findings of diphtheria bacilli in the urine in all cases of diphtheria examined during the first week of the disease. At times the bacilli may be found in the urine three months or more after the patient has been discharged from the hospital, and long after the throat culture has become negative. It is interesting to note that urotropin had no effect in getting rid of these bacilli. Beyer believes from these observations that every case of diphtheria is a bacteremia. These observations are yet to be confirmed.

THE RELATION OF AN INFECTED STREAM TO THE MILK SUPPLY OF A CITY.*

By F. M. MEADER, M.D.,
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1. DESCRIPTION OF BROOK.
2. THE PROBLEM.
3. METHOD OF ATTACK.
4. EXPERIMENTS.
5. DISCUSSION OF EXPERIMENTS.
6. CONCLUSIONS.

(NOTE.—In order to make this paper impersonal, the names of village and streams are fictitious.)

I. Description of Brook.

WILLOUGHBY Creek, and its tributaries, is a small stream draining an area of about 27.8 square miles north and east of a city of 140,000 people. Its largest tributary is Rouse Creek which flows in a southwesterly direction from the north of the village of Salisbury—a village of about 3,500 people. The largest tributary of Rouse Creek is Sampson Creek, which rises in the swamp land to the east of the city. It flows northward through the western border of Salisbury.

The stream is well confined in high banks. At the bridge just east of Salisbury the stream measures 10 feet wide and 2 feet deep, and at the time of observation was flowing at the rate of about 1 foot per second. There is some variation in rate of flow according to the season. The current is rapid at places, but for the most part is sluggish and is interrupted occasionally by stray

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fence rails or pieces of board, around which sewage and debris accumulates. The course zig-zags through cultivated fields and pasture land. (See Fig. 2.) Considerable green swamp grass grows in the bed of the stream. Several turtles have been observed, and occasionally a fish may be seen coming to the surface in a sluggish manner and then make way to a tributary of fresh water. The creek is used occasionally by boys from the village for bathing purposes.

The tributaries of Willoughby Creek are polluted at intervals along this course; but the greatest source of pollution is from the untreated sewage of 3,500 people living in Salisbury. From this village two sewers enter Sampson Creek. The first enters near the road leading to Salisbury. (See Fig. 1.) The second sewer enters the creek about 600 feet further down its course.

The water is very turbid, at times, due chiefly to the washings from the locomotives at a repair shop. The turbidity is increased by the sewage from Salisbury, and can be traced 50 feet or more down the stream. From the outlet



FIG. 1.—Outlet of Salisbury sewer pipe into Sampson Creek, from bridge.

of the sewer many fragments of paper, masses of feces, portions of vegetables, berries and crusts of bread have been observed to emanate. The odor of sewage is often very offensive.

Located on this creek are 13 farms which have a total of about 374 cows. The milk from these animals is sold in the city.

2. The Problem.

The question at issue is this: If the creek is infected with typhoid bacilli, and cows are allowed to enter the creek and soil their udders with the infected water, what danger is there that their milk may become infected during the process of milking?

If cows drink the infected water will their milk thereby become infected? This last question may be answered at once: Typhoid organisms do not produce or injure cattle in any way. But if the organisms are on the outside of the animal and ready to drop into the milk pail, or to be washed into the pail by the so-called "wet milking," where the milker moistens his hands

with milk in the process and allows the dripping to fall into the pail, the danger of infecting the milk is apparent.

3. Method of Attack.

The clear cut problem is to determine whether or not organisms in the stream which bathes the cows' udders may get into the milk. It would manifestly be too dangerous to experiment with typhoid organisms. Again presence of typhoid organs is not easily determined, as they grow rapidly in milk without producing any visible change.

A more suitable organism for this purpose is *B. prodigiosus*. It is harmless, and wherever it grows it produces a red pigment so that it is easily recognized. The water might be infected up stream with *B. prodigiosus* and when the bacteria arrive at a certain place, a cow might be made to travel through the stream. Then, she could be milked and if any of the organisms dropped into the milk pail, the milk would have a red scum 24 hours later. A little experimenting, however, showed that a more complicated method was required, in order to get an end reaction.

If this plan were adopted, it would be necessary, *first*, to know when the infection arrives at the place; *second*, the infectious material must be sufficiently concentrated to touch the cow. They, *first*, must be visible when they arrive, and *second*, must be sufficiently numerous so that they can adhere to the udder.

In order to determine when the bacteria arrive, objects could be placed on the surface of the water and the period of transit carefully observed. Two objections may be raised to this plan. *First*, the middle of the stream is the swiftest; and *second*, the larger the particles the more they will catch in debris and grass on the bank. Hence they will not pass so rapidly as the smaller bacteria, so that by the time the particles arrive the bacteria will long have passed. While following a particle down the stream a crust of bread was observed floating along and was observed to be detained in eddies. The idea then presented itself of infecting some toast, permitting it to flow down the stream, and to allow the udder of a cow to come in contact with it. If the bread was toasted the fragments would be less easily broken on account of the coagulated proteids and the bacteria and molds adherent would be killed. The following experiments were then undertaken:

4. Experiments.

No. 1.

The object of this experiment was to determine the best method of obtaining an end reaction by one of three ways.

(A) The new culture was put into some milk and put into a sterile pint blake bottle and al-



FIG 2.—Sampson Creek, passing through Mr. Benn's farm, showing where cow's udder was polluted with *B. prodigiosus*.

lowed to grow at room temperature for 24 hours.

(B) Some of this same infected milk was put onto sterile crust in a sterile fruit jar.

(C) The inside of the large side of a pint blake bottle was flowed with agar-agar and allowed to solidify. Then some of the infected milk, above mentioned, was flowed over the surface of the agar. The blake was then put in a horizontal position with one side tilted up at one-half inch so that about half the surface of the agar was above the surface of the milk. The whole surface, however, had been seeded.

Results:

(A) In 24 hours there was a thin scum of pink on the surface of the infected milk.

(B) A few red areas could be seen on the bread crust.

(C) The whole surface of the agar was red colored and a red film was over the milk and red pigment was being washed down into the milk itself, giving all a distinct red hue.

No. 2.

The object of this experiment was to determine if a bread crust soaked with a culture of *B. prodigiosus* and washed for one hour in running water will still contain *B. prodigiosus*.

Two slices of toast were soaked with a concentrated culture of *B. prodigiosus*. Then they were put into a 12 quart pail full of water, and water from the faucet in the laboratory was allowed to run into the pail for one hour. The toast was then put into a sterile pint fruit jar and allowed to stand at room temperature for 24 hours.

Result:

June 3d, toast is covered with a brilliant red color due to the growth of *B. prodigiosus*. It is apparent that washing the toast one hour will not remove all the bacteria.

No. 3.

The object of this experiment was fourfold.

(A) To determine if the stream is already infected with *B. prodigiosus*.

(B) To determine if the cow's udder is infected with *B. prodigiosus*.

(C) To determine if the stream is infected at the entrance of the Salisbury sewer, can it be regained as it passes Mr. Benn's farm $1\frac{1}{4}$ miles below.

(D) If cattle get into the creek may their udders become polluted on the outside with *B. prodigiosus* so as to make it possible for these bacteria to get into the milk during the process of milking.

Two stale loaves of white bread were sliced and dried in the sun. Then toasted lightly on both sides. The 24 hour growth of the new culture of *B. prodigiosus* on 3 agar slants in pint blake bottles was washed off and diluted to a quart with water. It was then poured onto the toast and allowed to soak into it and grow until the next forenoon (18 hours).

The culture was thrown into the stream at the entrance of the lowest Salisbury sewer pipe. In order to determine if the stream was infected, a slice of uninfected toast was put into the stream and collected a few rods below and then it was incubated in a sterile fruit jar for a few days.

At Mr. Benn's farm, $1\frac{1}{4}$ miles distant, a cow was first partially milked and her milk placed in a sterile fruit jar. As some of the toast approached it was picked up in a pail with about one liter of water. The cow's tail, udder and teats were then besmeared with the mixture of infected bread and water. She was then milked, teats moistened with the milk and all allowed to drop into the vessel. The milk was put into another sterile fruit jar. The cow's udder was then washed with spring water, then by a 1 to 1,000 bichloride of mercury and water, then rinsed with spring water.

The milk was taken to the laboratory. The first milk drawn was put onto 3 slant agar blake bottles, about 25 c.c. in each. The second milk was put into similar slant agar blake bottles. They were now put in a horizontal position and tilted $\frac{1}{2}$ inch so that about half the agar surface was above the surface of the milk.

Result: 15 hours later. The milk drawn first was white colored, no growth on the surface of the agar. The milk drawn last was covered with a dense red film and the agar surface was deep red colored. After three days the change was the same. The reaction was sharp and decisive. So that, we would conclude that an infected stream may injure a milk supply if cattle are allowed to bathe or have access to it, in crossing or otherwise. The stream was apparently not infected with *B. prodigiosus* before the culture was turned into the stream.

5. Discussion of the Experiments.

The question arises, is the above experiment parallel to the natural conditions? Is the danger real or only apparent? What are the diseases that are likely to be transmitted by this means?

Answering the last question first, the diseases the etiological factor of which is known to be in the feces, at one time or another are typhoid fever, dysentery, amœbic dysentery, tuberculosis, and cholera. It may be said that amœbic dysentery and cholera are rare in this country so that for this region they may be disregarded. However, intestinal tuberculosis is common. And it is common to have it spread to children by means of milk. But we know of no reported instances where it has been proved that the milk was infected in this manner, but if cattle are allowed to drink water infected with tubercle bacilli there is no reason why the cows could not become infected. Typhoid fever and dysentery are common, and typhoid carriers are unconsciously present in considerable numbers. It is known that 2 or 3 per cent. of typhoid patients become chronic carriers, and unconsciously discharge typhoid bacilli in their feces for years. Whenever a village of 3,500 distributes its sewage untreated into a stream of this size it would seem impossible for it not to be infected more or less—when the fever is epidemic, much more than when there is no typhoid fever.

Coming now to the question as to whether the danger is real or apparent. It may be stated that the dilution would be so large that the number of typhoid organisms which could come in contact with a cow would be insignificant. In this particular experiment: The length of the stream is 6,650 feet. The width about 10 feet, and the depth 2 feet, making a total cubical content of about 133,000 cubic feet or 3.78 billion cubic centimeters. Suppose that a single stool is equally distributed throughout the sewage and gradually all gets down into the creek during an hour. The volume of water that has passed the outfall is 3.78 billion c.c. of water. Now one typhoid carrier is known to have had about 8 million typhoid organisms to the gram of feces. Assuming that the stool is a normal one of 200 grams. These would be 1.6 billion typhoid organisms. Assuming that it is evenly distributed in this volume of water, we would have about 7 typhoid organisms to each cubic inch of water. If there were more carriers, or more cases of typhoid fever, one can see how they could be more numerous.

Since cattle have been having access to this brook for years why have there not been more epidemics of typhoid fever along the milk routes?

First. Salisbury has been putting its sewage into this creek only since 1905. At first, but a few houses were connected with the sewer but as the years have passed the number of houses has been gradually increasing. *Second.* The discharge of typhoid organisms into the creek would be more or less intermittent. *Third.* The stream instead of being evenly infected would be unevenly infected. *Fourth.* The cows would be in the stream but a short time during the day. *Fifth.*

The distance to farms where cattle have access to this creek is for the most part much greater so that the dilution would be correspondingly greater. *Sixth.* The cows generally dry off before milking and the drying itself would kill many typhoid organisms. *Seventh.* Typhoid organisms would drop off with the dirt. *Eighth.* Milk may be cooked so that typhoid organisms cannot grow. The chance that the right combinations of circumstances should occur is more or less remote. While the probability may be remote, the possibility is ever present. Who shall say that some of our sporadic cases do not come in this way?

If boys are frequent swimmers in this brook why do not they become infected? Because the number of typhoid organisms that are likely to get into their mouths is small; possibly too small to make them ill. B. typhous grows well in warm milk so that by the time it gets to the consumer it may be a veritable culture. It would make no visible change in the appearance of the milk.

The next question. Is the above experiment parallel to the conditions in nature? The typhoid organisms would of course be invisible. They would not be attached to pieces of toast nor have the opportunity to enter the cavities in the bread and be confined by the swelling partitions that surround the cavities, nor have the opportunity to grow into the bread. The above statements are true, but organisms (typhoid) may be in concentrated numbers in fecal masses and be carried long distances. Masses of feces have been observed in this creek. They are in contact with kitchen wastes and may be carried along on such material. The experiment is exaggerated. It was designed only to bring out the possibility and in that particular has been successful.

6. Conclusions.

The question at issue was, may cows polluting their udders in an infected stream be in a condition such that their milk may become infected during the process of milking, and may this stream infected a mile or more distant be a source of danger to the people using the milk from cattle having access to this creek?

The conditions of the experiment have covered these two points. Infectious material has travelled a distance of $1\frac{1}{4}$ miles down the stream and a cow whose udder was polluted with this infectious material was found to give milk which was infected with this particular organism. The conditions, however, are such that the possibility of such an event occurring is more evident than a probability, but that possibility sharply marks out the line of safety. Namely, clean up the stream or keep the cows out of the brook.

(NOTE.—I am indebted to Mr. James Lees, Dairy Inspector, to Mr. Benn and to Prof. H. C. Ward, Syracuse University, for assistance in performing this work.)

CORRESPONDENCE.

The Editor of the NEW YORK STATE JOURNAL OF MEDICINE.

May 28, 1913.

DEAR SIR:

In the April, 1913, number of the above JOURNAL I notice an article purporting to be written by Dr. Frederick H. Nichols of Jamestown upon the "Early Diagnosis of Intestinal Cancer." In November, 1909, the NEW YORK STATE JOURNAL OF MEDICINE published a paper written by myself under a similarly worded title. With the exception of some sentences and my case reports omitted and the changing of a few words here and there, Dr. Nichols' paper is a verbatim copy of mine, without reference or credit to me. I request publication, in parallel columns, of either the whole of both papers or so much as will conclusively prove my statements.

Yours truly, (Signed) IRVING S. HAYNES.

THE EARLY DIAGNOSIS OF INTESTINAL CANCER.

By IRVING S. HAYNES, Ph.B., M.D.

Improvement in the mortality rate can come only in three ways. Wide excision, earlier operation, or by an anti-cancer serum.

The early diagnosis of superficial cancers is often a difficult problem and many times definitely settled only by the microscope during or after the operation. Internal cancers are very much more difficult to recognize, and it is at times impossible to draw any conclusion beyond the fact that there is something serious the matter, its exact nature unknown to us, but which ought to be subjected to an ocular examination.

I am gradually growing into that frame of mind which makes it necessary in intestinal (and gastric) disturbances to prove that the condition is not cancerous than to leave this as the last alternative. It is wise, then, I think, to suppose that cancer may be present and arrive at the true diagnosis by exclusion.

In order to keep within the time I shall limit this paper to a brief consideration of cancers of the small intestine below the duodenum and the large intestine above the rectum. Inasmuch as cancers of the small intestine bear a very small proportion, one to ten, to those in the large bowel, this paper virtually deals with cancer of the colon, with brief references to growths in the small intestine.

This classification is purely arbitrary. One stage merges into another, and all are only phases of the onward march of the disease to a fatal termination. Yet a consideration of the symptoms under this classification is not without some advantage, for it may serve to fix our attention upon some few symptoms in the earlier history of the growth so that when the next case comes to us we may suspect the cause and secure an operation before the onset of terminal symptoms.

In all stages of the cancer the symptoms might be considered under two heads, those produced by and due to the growth *per se*, and those caused by its effects upon the function of the bowel.

WHERE IS IT?

Without a tumor being present, and depending upon the symptoms and our means of examination, we may arrive at the probable location of the lesion in the following manner:

Rectal injections of plain water or normal salt solution will afford some clue. If a small quantity of the fluid is quickly expelled from the rectum, the lesion is probably in the upper part of the rectum; if several pints are injected without returning, the trouble is probably at or above the cæcum. With intermediate quantities retained the lesion may be estimated to be somewhere between these two points, with the sigmoid as the favorite location.

The most valuable means we have at present for locating a stenosis in the colon is by the X-ray photograph of the large intestine after it has been injected with a bismuth emulsion.

WHAT IS IT?

Bands and adhesions from previous operations are ruled out by inspection of the abdomen. Herniæ by examination of the various hernial rings. Tumors of the neighboring viscera, distended gall-bladder, ovarian cysts, fibroid tumors, pregnant uterus, the sausage-shaped tumor of an intussusception can be negated by abdominal, rectal and vaginal examination.

THE EARLY DIAGNOSIS OF INTESTINAL CANCER.

By FREDERICK H. NICHOLS, M.D.

Improvement in the mortality rate from cancer can come in three ways: earlier diagnosis, earlier operation, and wider excision.

The early diagnosis of superficial cancer is often a difficult problem and many times definitely settled only by the microscope during or after the operation. Intestinal cancers are very much more difficult to recognize, and it is at times impossible to draw any conclusion beyond the fact that there is something serious the matter, its exact nature unknown to us, but which ought to be subjected to an ocular examination.

I am gradually growing into that frame of mind which makes it necessary in intestinal disturbances to prove that the condition is not cancerous rather than to leave this as the last alternative. It is wise, then, I think, to suppose that cancer may be present and arrive at the true diagnosis by exclusion.

In order to keep within the time, I shall limit this paper to a brief consideration of cancers of the small intestine below the duodenum and of the large intestine above the rectum. Inasmuch as cancers of the small intestine bear a very small ratio, one to ten, to those in the large bowel, this paper virtually deals with cancer of the colon, with brief references to growths in the small intestine.

This classification is purely arbitrary, one stage merges into another, and all are only phases of the onward march of the disease to a fatal termination. Yet a consideration of the symptoms under this classification is not without some advantage, for it may serve to fix our attention upon some few symptoms in the earlier history of the growth, so that when the next case comes to us we may suspect the cause and secure an operation before the onset of terminal symptoms.

In all stages of cancer the symptoms may be considered under two heads: those produced by and due to the growth, *per se*, and those caused by its effect upon the function of the bowel.

WHERE IS IT?

Without a tumor being present and depending upon the symptoms and our means of examination, we may arrive at the probable location of the lesion in the following manner:

Rectal injections of plain water or normal salt solution will afford some clue. If a small quantity is quickly expelled from the rectum, the lesion is probably in the upper part of the rectum; if several pints are injected without returning, the trouble is probably at or above the sæcrum. With intermediate quantities retained the lesion may be estimated to be somewhere between these two points, with the sigmoid as the favorite location.

The most valuable means we have at present for locating a constriction in the colon is by the X-ray photograph of the large intestine after it has been injected with a bismuth emulsion.

WHAT IS IT?

Bands and adhesions from previous operations are ruled out by inspection of the abdomen; hernia, by examination of the various hernial rings. Tumors of the neighboring viscera, distended gall-bladder, ovarian cysts, fibroid tumors, pregnant uterus, the sausage-shaped tumor of intussusception can be negated by abdominal, rectal and vaginal examination.

FRIEDMANN'S VACCINE.

New York, July 8, 1913.

*Editor, NEW YORK STATE JOURNAL OF MEDICINE,
New York.*

DEAR SIR:

In my statement of May 26th, addressed to the medical and lay press and setting forth the conditions on which I had accepted the direction of the Friedmann Institute of New York, I laid much stress on the fact that my chief aim was to remain for a year or so an impartial observer with all the data at my ready command; after which I would communicate to the medical profession the results obtained by the use of the Friedmann vaccine, whether those results were good, indifferent or bad.

I realized how arduous a task I was assuming. My work appeared to me in the light of a public duty. I felt that sooner or later my colleagues and the public would come to recognize the absolute sincerity of my purpose.

My own observations had led me to conclude that the Friedmann vaccine was worthy of a fair, that is, of a prolonged trial. Since then my convictions have only become deeper.

My most serious objection was to the secrecy observed in regard to the vaccine. I had come to my own conclusions when I read that it contained live bacilli and when, later on, Dr. Friedmann explained to me his method of preparation, I found that I had been correct in my deductions; I felt that he was working along the right path, for the results obtained in bacteriotherapy from the introduction of live germs into the organism are much more satisfactory than the results from the use of dead germs or bacterial extracts. In the Pasteur treatment, for instance, we inject an emulsion of live germs, avirulent for man, when properly used.

The medical profession, however, not knowing the composition of Friedmann's vaccine naturally showed itself averse to using it. On the other hand, Friedmann held, not without reason, that it would be unsafe to release all the data concerning his vaccine and to place it in the hands of every physician before those wishing to administer it had made themselves thoroughly familiar with its use. The correctness of his contention was evident and I could not at the time raise any strong objection to it.

But now I have concluded that the medical

profession is entitled to know that: The vaccine is simply a homogeneous emulsion of live, avirulent tubercle bacilli in plain sterile distilled water. The germ was isolated several years ago from a turtle and the culture has been maintained since that time by transplantation on artificial culture media, according to the usual procedure. Before long full particulars concerning the culture and preparation of the emulsion will be made public when sufficient time has elapsed to demonstrate the correctness of the present *modus operandi*. In the meantime I shall welcome any colleague who desires to familiarize himself with the administration of the vaccine that he may use it personally on his own patients. I wish it distinctly understood that I have not formed any final opinion as to the efficacy of the treatment. In a disease like tuberculosis it would be most unscientific to draw any conclusion as to the value of a certain treatment at the end of two or three months. I can only say that I have now observed over 100 cases and that, in many of them, I have noted beneficial results, such as, according to my experience, have not been obtained in the same length of time, with any other known method of treatment.

Finally, I have not observed one case in which the judicious administration of this treatment has in any manner, harmed the patient.

GEO. GIBIER RAMBAUD, M.D.,
N. Y. Pasteur Institute.

A DESERVED APPOINTMENT.

It is with pleasure we note the appointment of Dr. Dwight Henderson Murray as Associate Professor of Clinical Proctology in the University of Syracuse.

Dr. Murray will bring to his new appointment not only a thorough knowledge of his subject but in addition energy and enthusiasm,—two traits of character with which he is richly endowed.—ED.

A QUESTION OF PLAGIARISM.

Dr. Irving S. Haynes, by implication, charges Dr. Frederick H. Nichols with plagiarism. Dr. Haynes sent to the JOURNAL the correspondence which took place between himself and Dr. Nichols without, as far as we know, the permission of Dr. Nichols. Viewing the correspondence as confidential we have not published it, but we will grant to Dr. Nichols the courtesy of the columns of the JOURNAL should he desire to comment upon Dr. Haynes' communication.—ED.

COUNTY SOCIETIES.

QUEENS-NASSAU MEDICAL SOCIETY.

SEMI-ANNUAL MEETING, AT JAMAICA, MAY 27, 1913.

The following amendment to the By-Laws was adopted:

"Amend Chapter VII by adding to Section 1 the following: 4. Publicity."

And adding another section, to be known as Section 7, as follows:

"The Committee on Publicity shall consist of five members, to be appointed annually by the President, geographically distributed. It shall be the duty of this committee to place themselves actively at the disposal of newspapers and societies for the purpose of educating the public concerning any movement hostile to the general health of the community; to make public, in a proper manner, the proceedings of the Society; and otherwise to diffuse and to make more accurate information pertaining to the prevention of disease."

SCIENTIFIC SESSION.

"The Diagnosis of Gastric Ulcer," Harold Barclay, M.D., New York.

"Syphilis," Major H. H. Rutherford, U. S. A., Fort Totten.

Discussion of Papers.

Reports of Interesting Cases.

MEDICAL SOCIETIES OF
TOMPKINS AND CORTLAND COUNTIES.

ANNUAL MEETING, AT FREEVILLE, MAY 30, 1913.

The Third Annual Outing of the combined Medical Societies of Tompkins and Cortland Counties was held at Republic Inn, George Junior Republic.

The day was perfect and more than 100 members of the two societies, their wives, sons, daughters and guests enjoying the outing to the full.

The ball game on the George Junior diamond, between members of the Cortland and Tompkins County Societies, resulted in a score of 6 to 1 in favor of Tompkins.

At 1.30 P.M., about 110 people sat down to a sumptuous chicken dinner at the Republic Inn, immediately after which an interesting scientific program was given. An opportunity was given at this time to those who were not interested in this program to make a visit of inspection under proper guidance to the various parts of the Republic.

It is interesting to note that there were present Dr. H. T. Dana of Cortland, and Dr. W. C. Gallagher of Slaterville Springs, both of whom have completed a half century of active practice of medicine and are still actively in the harness and both of whom are active and highly respected members of their respective County Societies. They were greeted with the Chautauqua salute.

Dr. William F. Campbell, President of the Medical Society of the State of New York, was present and gave a good talk which was highly appreciated.

The following papers were presented:

"The Composition and Properties of Some New Milk Preparations," Prof. George Cavanaugh, Cornell.

"Determination of Sex," B. F. Kingsbury, M.D., Cornell.

"Gonorrhœa and Civilization," H. B. Besemer, M.D., Ithaca.

The papers were well discussed and a profitable hour was spent on this program.

MEDICAL SOCIETY OF THE COUNTY OF
CHEMUNG.

REGULAR MEETING, JUNE 16, 1913.

SCIENTIFIC PROGRAM.

"A Lantern Slide Demonstration of Some Diseases of the Skin," Grover W. Wende, M.D., Buffalo.

"The Autonomic System (Sympathetic) in relation to Medicine" (stereopticon), James A. Gibson, M.D., Buffalo.

MEDICAL SOCIETY OF THE COUNTY OF
FRANKLIN.

SEMI-ANNUAL MEETING, AT SARANAC LAKE, JUNE 10, 1913.

Dr. F. F. Finney, president, in the chair.

The following officers were nominated: For President, W. H. Harwood; Vice-President, J. Woods Price; Secretary and Treasurer, G. M. Abbott; Censor, F. W. McCarthy; Delegate State Society, C. C. Trembley; Alternate, F. F. Finney.

Dr. E. R. Baldwin, a member of the Special Public Health Commission, appointed by Governor Sulzer to investigate the health conditions of the state, addressed the meeting at considerable length, explaining the changes in the public health laws and how they were expected to work out.

SCIENTIFIC SESSION.

"Pneumonia," W. H. Harwood, M.D., Chasm Falls.

"Placenta Previa," F. W. McCarthy, M.D., North Bangor.

Discussed by Dr. R. M. Brown.

Dr. A. L. Krause, bacteriologist of the Saranac Laboratory, made a very interesting address on "The Scientific Career of Friedmann," which was discussed at considerable length by Drs. L. Brown, Murphy, Wooley and Baldwin.

"Vaccine in Tuberculosis," E. R. Baldwin, M.D., Saranac.

Discussed by Drs. Price, Bray, L. Brown, Krause and Goodall.

Dr. A. K. Garvin reported an interesting case of pneumothorax, and presented the lungs from the case, showing a large cavity and the perforation into the pleural cavity.

MEDICAL SOCIETY OF THE COUNTY OF
CLINTON.

SEMI-ANNUAL MEETING, AT PLATTSBURG, MAY 20, 1913.

SCIENTIFIC SESSION.

"Renal Calculus," W. W. Townsend, M.D., Rutland, Vt.

"Hematuria: its Surgical Symptoms and Report of Cases," R. S. McDonald, M.D., Plattsburg.

"Report of Two Cases of Traumatism of Uterus," T. J. Cummins, M.D., Plattsburg.

MEDICAL SOCIETY OF THE COUNTY OF
CHAUTAUQUA.

TRI-ANNUAL MEETING, AT FREDONIA, MAY 27, 1913.

SCIENTIFIC PROGRAM.

"Chronic Urinary Symptoms," G. W. Cottis, M.D., Jamestown.

"Personal Experiences in Anoci-association Operations," Marshall Clinton, M.D., Buffalo.

"Recognition of Early Heart Insufficiency," A. T. Lytle, M.D., Buffalo.

MEDICAL SOCIETY OF THE COUNTY OF
STEUBEN.

REGULAR MEETING AT BATH, MAY 13, 1913.

SCIENTIFIC PROGRAM.

President's Address, J. A. Conway, M.D., Hornell.

"X-ray Therapy," Charles Hasse, M.D., Elmira.

Discussion by J. E. Walker, M.D., Hornell.

"The Homestead at Bath," Henrietta P. Johnson, M.D., Bath.

"Communicable Diseases and Public Health," Wm. A. Howe, M.D., Deputy Commissioner of Health, Albany.

Discussion by F. S. Swain, M.D., Corning, and J. A. Conroy, M.D., Hornell.

"Duodenal Ulcer," Marshall Clinton, M.D., Buffalo.

Discussion by H. B. Smith, M.D., Corning, and B. R. Wakeman, M.D., Hornell.

"Ectopic Pregnancy," H. P. Jack, M.D., Hornell.

Discussion by O. K. Stewart, M.D., Canisteo, and C. R. Phillips, M.D., Hornell.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PREVENTIVE MEDICINE AND HYGIENE. By MILTON J. ROSENAU, Professor of Preventive Medicine and Hygiene, Harvard; formerly Director of the Hygienic Laboratory, U. S. Public Health Service. With chapters upon Sewage and Garbage, by George C. Whipple, Professor of Sanitary Engineering, Harvard; Vital Statistics, by Cressy L. Wilbur, Chief Statistician, Bureau of the Census, Department of Commerce and Labor; The Prevention of Mental Diseases, by Thomas W. Salmon, Director of Special Studies, National Committee for Mental Hygiene, etc. New York and London. D. Appleton and Company. 1913.

TEXT-BOOK OF DISEASES OF THE NOSE, THROAT AND EAR, for the use of students and general practitioners. By FRANCIS R. PACKARD, M.D., Professor of Diseases of the Nose and Throat in the Philadelphia Polyclinic Hospital and College for Graduates in Medicine; Aurist in the Out-patient Department of the Pennsylvania Hospital. Second Edition, with 145 illustrations. Philadelphia and London. J. B. Lippincott Company. Price, \$3.50.

ELECTRICITY IN DISEASES OF THE EYE, EAR, NOSE AND THROAT, with illustrations. By W. FRANKLIN COLEMAN, M.D., M.R.C.S., Eng.; Ex-President of and Professor of Ophthalmology in the Post-Graduate Medical School of Chicago; Ex-President of the Ophthalmological Society of Chicago; Professor of Ophthalmology in the Illinois School of Electro-Therapeutics, Chicago, etc. The Courier-Herald Press. 1912.

MULLER'S SERODIAGNOSTIC METHODS. Authorized translation from the Third German Edition. By ROSS C. WHITMAN, B.A., M.D., Professor of Pathology, University of Colorado School of Medicine. With 7 illustrations in text. Philadelphia and London. J. B. Lippincott Company.

DISEASES OF THE EAR. By PHILIP D. KERRISON, M.D., Professor of Otology, New York Polyclinic Medical School and Hospital; Junior Aural Surgeon to the Manhattan Eye, Ear and Throat Hospital; Aural Surgeon to the Willard Parker Hospital for Infectious Diseases, and to the Polyclinic Hospital; Member of the American Laryngological, Rhinological and Otological Society, of the American Otological Society, and of the New York Otological Society and the New York Academy of Medicine. 331 illustrations in text and 2 full pages in color. Philadelphia and London. J. B. Lippincott Company. Price, \$5.00.

SUMMARIES OF LAWS RELATING TO THE COMMITMENT AND CARE OF THE INSANE IN THE UNITED STATES. Prepared by JOHN KOREN for the National Committee for Mental Hygiene. Published by The National Committee for Mental Hygiene, 50 Union Square, New York. 1912.

A TEXT BOOK OF BIOLOGY. For Students in Medical, Technical and General Courses. By WILLIAM MARTIN SMALLWOOD, Ph.D. (Harvard), Professor of Comparative Anatomy in the Liberal Arts College of Syracuse University, and in charge of Forest Zoology in the New York State College of Forestry at Syracuse. Octavo, 285 pages; illustrated with 243 engravings and 13 plates, in colors and monochrome. Lea & Febiger, Publishers. Philadelphia and New York, 1913. Cloth, \$2.75, net.

BOOK REVIEWS.

A MANUAL OF AUSCULTATION AND PERCUSSION, embracing physical diagnosis of diseases of the lungs, heart, thoracic aneurysm, and of other parts. By AUSTIN FLINT, M.D., LL.D., late Professor Principles and Practice of Medicine and of Clinical Medicine, Bellevue Hospital. Sixth edition. Revised and enlarged by HAVEN EMERSON, A.M., M.D., Asso. Physiology and Medicine, College of Physicians and Surgeons; Assistant Visiting Physician, Bellevue Hospital. Illustrated. Lea & Febiger. Philadelphia and New York. 1912.

"Flint's Physical Diagnosis" has become such an essential part of the medical curriculum, that a review seems hardly necessary, for the value of the work is abundantly recognized. It is a matter for general congratulation that Dr. Flint's mantle is not to be hung up in a dust-proof closet, but has been settled on the shoulders of as able a man as Dr. Emerson, who has demonstrated from the beginning his just appreciation of Dr. Flint's work by retaining the form and style practically unchanged. The book has been modernized where needful, but it still remains Flint's work, and in saying this we are paying our highest respects to both author and editor.

HENRY GOODWIN WEBSTER.

SURGERY OF THE RECTUM FOR PRACTITIONERS. By SIR FREDERICK WALLIS, M.B., B.C. (Cantab), F.R.C.S., Surgeon Charing Cross, St. Mark's and Grosvenor Hospital for Women and Children, London. Henry Frowde, 1912. Oxford University Press. 35 West 32d Street, New York.

The importance of the study of rectal diseases by medical practitioners as well as of adequate instruction in this subject for medical students is becoming more and more recognized.

Fortunately, physicians in gradually increasing numbers are acquainting themselves with this important branch of surgery, so that the patient suffering from one of the diseases of the rectum can more easily secure proper examination and intelligent treatment. All this is gratifying to note.

Sir Frederick Wallis, in his recent book, "The Surgery of the Rectum for Practitioners," has given to the profession a very readable and highly practical volume. He demonstrates most conclusively the importance of a careful study of diseases of the rectum, this class of common ailments which affect so many.

In the chapter dealing with ulcerative colitis, the author presents a form of successful treatment by means of cataphoresis of this stubborn and distressing condition which will be welcomed by all who are interested in this disease. Only early recognition and prompt treatment will safeguard against invalidism in this particular affection; and, indeed, this statement applies as well to many other rectal troubles. Throughout this volume the fact is made clear that cure is practically certain provided the true cause of the particular trouble is recognized.

Some years ago the writer of this review had the pleasure of observing the work of Sir Frederick at St. Mark's Hospital, and he was greatly impressed with the painstaking and thorough manner in which it was carried out.

A careful reading of this book will yield rich returns.

EARL H. MAYNE.

MANUAL OF SURGERY. By ALEXIS THOMSON, F.R.C.S., Ed. Professor Surgery, University Edinburgh; Surgeon Edinburgh Royal Infirmary, and ALEXANDER MILES, F.R.C.S. Volumes II and III. Fourth Edition, revised and enlarged, with 274 illustrations. Edinburgh, Glasgow and London. Henry Frowde and Hodder & Stoughton. 1912.

This volume, the third, is devoted to operative surgery. Chapters one to five inclusive are devoted to the

operations on the blood vessels. Of these chapters, two, three and five are upon the ligations of arteries in their continuity. On pages 11 and 12 the authors write upon "The reversal of the peripheral circulation, end to end anastomosis of the artery to the vein." In this connection it is claimed by Coenen of Breslau that Carrel's statements and experiments in regard to the possibility of reversing the circulation in a dog's limb are not conclusive, that, in fact, the valves of the veins do not give away as asserted, and that as a result a true and complete reversal is never attained. The blood is simply shunted off to another vein and promptly returned to the heart without ever getting to the foot or hand. He asserts, furthermore, that the principal is both anatomically and physiologically wrong and warns against the indiscriminate performance of the operation. (Ueber das Problem der Umkehr des Blutstromes and die Wietingische operation. *Beit. z. Klin. Chir.*, Aug. lxxv, Nos. 1-2, pp. 1-473, also *Centralbl. f. Chir.*, No. 29, 1911.) Wieting, on the other hand says that his clinical work has been highly successful and that it speaks for itself. He admits, however, that there are several problems still unsettled such as the return of the blood to the heart. Wieting, Treatment of Angiosclerotic Gangrene by diverting the arterial blood to the venous system. (*Deut. Zeitschr. f. Chir.* cx, Nos. 4-6, pp. 313-634.) We are all looking to Carrel for the solution of the question. The names of those other master technicians in blood vessel surgery, Matas the pioneer in this work, Crile, Dawbarn, Guthrie, Mayo and Murphy are mentioned and their work detailed.

In chapters vi, vii and viii, the authors write upon the operations on nerves. The usual ones are described. Chapters ix, x, xi, are devoted to operations on bones, tendons and joints. In chapter ix it is stated: "In our opinion operative treatment of simple fractures of the shaft of the long bones is only called for when it is evident that the fragments cannot otherwise be brought into sufficiently accurate apposition to avoid such shortening or deformity as will interfere with the function of the limb; or when it is found to be impossible to maintain them in good position by other means. In fractures implicating articular surfaces, the difficulty of replacing the fragments and maintaining them in accurate position and the risk of impaired mobility of the joint after faulty coaptation necessitate more frequent recourse to immediate operation." The authors take issue with Lane who advocates that operation be performed within two or three days after the injury. It represents sounder judgment to wait until the trauma has been somewhat ameliorated in a week or ten days. Thomson and Miles describe the Lane technic and also Lambotte's method of procedure. The other older methods are detailed as well. The authors make no mention of kangaroo tendon-suture in cases of fracture of the patella. This method I believe is the operation of choice in certain types of this fracture. The usual plastic operations on tendons are well described. Chapter xi, forty-seven pages, is devoted to operation on joints. The operations are well described. A procedure worthy of mention, Fowler's operation for hallux valgus, is omitted. The incision in this method is on the outer side of the metatarsal bone of the great toe and parallel with it for a distance of two inches. The joint is then dislocated inward instead of outward as in the usual operation and the head of the intracarpal bone removed. The particular advantage of this lies in the fact that the incision is so situated that no pressure is brought to bear upon the scar.

The following fifty pages are devoted to amputations. Chapters xvi and xvii are devoted to operations upon the skull, brain, spinal column and cord. It is gratifying to note that certain points in technic, modifications and improvements by American genius are given preference. Cushing, Martley and Keen are given due credit for their work.

Chapters xviii, xix, xx, xxi, xxii, xxiii, xxiv upon

operations on the face, pharynx, esophagus, the jaws, the tongue and salivary glands, the neck and the thyroid gland, and the air passages are all well written and are presented in a very excellent manner.

Chapter xxv is upon the breast, chapter xxvi is upon the chest. Pulmonary decortication (visceral pleurectomy) as first devised and carried out by George Ryerson Fowler is correctly described. The authors are correct in holding that it was not Delorme who first performed and reported results following this procedure.

Chapter xxvii and the three following are devoted to the surgical operations on the abdomen and pelvis. In the section upon abdominal incisions the authors fail to mention that improved method of entering the abdominal cavity devised by George Ryerson Fowler, known as the Fowler incision and the Wier extension. It is a modification of the McBurney incision which affords free access to the pelvis by extending the incision through the transversalis fascia, the internal oblique muscle being retracted into the sheath of the rectus muscle. In this field have American technicians again demonstrated their genius and originality in improved technic. The name of Binnie, Gibson, Halsted, Mayo, Murphy, Keen and Wier appear and receive credit for the work which they have done. The various operations are well and concisely described.

A description of operations for hernia appears in chapter xxxi. The usual procedures for inguinal, femoral, ventral and the Mayo operation for umbilical hernias are well presented.

The chapter following is devoted to operations for cancer of the rectum and lower end of the pelvic colon, and for hemorrhoids. The technics of Lisfranc, Kocher, and the combined abdomino-perineal operation introduced by Quénu in 1897 are detailed. The original proposal of Quénu that both internal iliacs be ligated before proceeding to remove the bowel has not been generally accepted. It is wise to do this operation in two stages whenever possible.

In chapters xxxiii, iv, v and vi, the various operations on the liver, gall bladder, ducts, pancreas and spleen, are described.

Chapters xxxvii, xxxviii and xxxix are devoted to the operations upon the genito-urinary tract. A more refined technic should be advocated for suprapubic cystotomy as carried out by Bentley Squires of New York. No mention is made of the intra-peritoneal attack upon the bladder. The Bevan operation should be described for the relief and cure of undescended testicle. The Fowler operation originally devised for old recurrent hernia may find a place in the cure of this condition as suggested by Ferguson of Chicago and later independently by the writer.

The final chapter upon anesthetics, written by Dr. J. Stuart Ross, presents the subject in an elementary, concise manner.

ROYALE HAMILTON FOWLER.

SERUM DIAGNOSIS OF SYPHILIS and the Butyric Acid Test for Syphilis. By HIDEYO NOGUCHI, M.D., M.Sc., Associate Member of the Rockefeller Institute for Medical Research, New York. 14 illustrations. Second edition. Philadelphia and London. J. B. Lippincott Company. Price, \$2.50.

This, the third edition has been enriched and enlarged by a chapter on the Noguchi Luetin reaction, and another especially valuable one, on the behavior of the serological reactions after the administration of salvarsan. In other respects this edition is practically the same as the former ones.

The additions and careful revisions makes this a valuable contribution to the subject of serum diagnosis.

Although this work of Dr. Noguchi is rather elaborate and scientific for the average general practitioner, careful reading of its pages will prove both instructive and entertaining to any one interested in the subject.

JAMES M. WINFIELD.

MEDICAL MEN AND THE LAW. A Modern Treatise on the Legal Rights, Duties and Liabilities of Physicians and Surgeons. By HUGH EMMETT CULBERTSON. 325 pp. 8vo. cloth. Lea & Febiger, Philadelphia and New York, 1913.

This book certainly ably supplies the facts that are needed by every physician, who has sufficient business prudence to wish to understand the obligations and responsibilities which the law imposes on the practice of his profession. It is an excellent statement of the principles of law and the rules which govern such practice in the different states: and is especially creditable from the fact that it has to deal with a country in which there is often a wide conflict of opinion and rules governing different situations in different states.

It should not, however, be too literally applied by the physician, as each case must be judged by the facts which it presents, and are therefore often altered by the involvement of other principles of law which would not be evident to the medical mind.

The author's views are entirely from the legal standpoint as in treating expert evidence, he does not consider the fact that the expert is required to express an opinion on the facts which are brought out only by one side of the case, and for the creditability of which he is not accountable.

ARTHUR C. BRUSH, M.D.

GENITOURINARY DISEASES AND SYPHILIS. By HENRY H. MORTON, M.D., Clinical Professor & Surg. Genitourinary Diseases L. I. College Hosp.; Genitourinary Surg. Kings County Hosp. and Polhemus Memorial Clinic; Consulting Genitourinary Surg. Kings Park and Beth Israel Hosps. of Newark; Member of the American Association of Genitourinary Surgs.; Member American Urological Asso., N. Y. Academy of Medicine, etc. Illustrated with 275 half-tones and photo-engravings and 18 full-page insert plates, 11 of which are in colors. Third edition, revised and enlarged. Philadelphia. F. A. Davis Company, Publishers, 1912.

The third edition of this work has been issued in larger and more attractive form than previous editions. The paper is of better quality and the illustrations and plates are of a higher order.

The first third of the book is devoted to a discussion of the diseases of the urethra and complications and has not undergone much change from previous editions of the work. This part of the book has been of a high order and little change has been necessary to keep it abreast of the times. The chapters devoted to the pathology, course and treatment of acute and chronic gonorrhœa are clear, concise and logical so that the reader after perusing should have a definite idea as to the management and treatment of specific urethritis.

Many books have been written on the subject but after reading most of them one is left with no definite idea as to pathology or differential diagnosis of the part of the tract diseased and for treatment only a list of drugs for injection and internal administration have been given.

Dr. Morton's book lifts the cure of the disease out of experimental treatment.

The chapters on hypertrophy of the prostate, cystoscopy and surgical diseases of the kidneys while not in any sense exhaustive are clear, concise and meet admirably the wants of the medical student and the general practitioner.

The author has met the requirement of a true medical writer of a book that bears his name by stating his knowledge and experience in discussing the various medical subjects on which he should be an authority. When he departs from this he quotes the authorities from which the statements are made. The issuing of supposedly new medical works which are in reality a rehash of statements of medical writers is to be condemned.

We bespeak a continuance of the popularity of this new edition of this work which has been accorded previous editions.

HOMER E. FRASER.

RECENT METHODS IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS. (The Wassermann Reaction and Ehrlich's Salvarsan, "606.") By C. H. BROWNING, M.D., Lecturer Bacteriology, University of Glasgow, and IVY MCKENZIE, Director, Western Asylum's Research Institute, Glasgow. Octavo, 303 pages. Cloth, \$2.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

As the author's preface states, this book is a record of a long series of independent investigations carried out by themselves and a few of their colleagues in an effort to determine an exact estimate of the value of the Wassermann reaction in the diagnosis of syphilis and of Ehrlich's salvarsan in its cure. Dr. Robert Muir, Professor of Pathology at the Glasgow University and the former teacher of the authors, has written an introduction which is most interesting.

To the syphilologist, the reading of this volume is a decided treat. To the general practitioner, its careful reading will insure the fullest information with which to meet the questions which daily arise in the handling of luetic cases. It places in his hands the means by which he may familiarize himself with the intricacies of the Wassermann reaction, and the indications for and the use of Ehrlich's salvarsan. The last chapter sums up the results of the authors' investigations and sets forth their conclusions in no uncertain terms. We quote a few of their conclusions. "With salvarsan the majority of cases treated in the primary stage with one or two intravenous injections, have shown no further signs of the disease." "As a matter of fact there are no symptoms which yield to mercury which are not removed more rapidly and more effectively by salvarsan." They recommend that treatment should be commenced immediately the diagnosis is made, making the diagnosis from films of serum expressed from the base of the sore and examined under the microscope for the spirochætes. "Even if it is impossible to find the spirochætes, and the blood reaction is negative, the presence of a sore suggesting primary syphilis where there is a history of exposure to infection, should be taken as an indication for immediate treatment. Excision should be resorted to, especially when the chancre is extensive and has a large indurated base. It is, of course, known that this does not prevent the spread of the disease, but it removes tissue in which the organisms have a particular tendency to persist in a latent condition after symptoms have disappeared."

It is to be hoped that a later edition of this same work will continue the histories of the cases upon which the first experiments were made and from which the conclusions were drawn. The publication antedates the introduction of neosalvarsan.

NATHAN T. BEERS.

CHLORIDE OF LIME IN SANITATION. By ALBERT H. HOOKER. New York. John Wiley & Sons. 1913.

Mr. Hooker has compiled all the data relating to the uses of chloride of lime in sanitation. The bringing together of full information regarding such a valuable, economical, and much-used agent, will be appreciated by sanitarians. Each chapter deals with a different problem of sanitation, *e. g.*, water purification, sewage disinfection, street sprinkling and flushing, epidemics, surgery, general and dairy sanitation, and the war against the infectious house-fly. The latter two-thirds of the book consist of abstracts and references. There is a subject index and a name index.

J.

DEATHS.

- J. N. FARRAR, M.D., Harrington Park, N. J., died June 12, 1913.
WALTER C. GILDAY, M.D., New York City, died May 31, 1913.
FRANK HARTLEY, M.D., New York City, died June 18, 1913.
RICHARD F. VAN HEUSEN, M.D., died June 16, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

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AUGUST, 1913

No. 8

EDITORIAL DEPARTMENT

THE PHYSICIAN AND HIS VACATION.

THRICE blessed is he who possesses a balanced temperament in which there exists a proportional combination of the various dispositions to which we poor mortals are heir. It would require the stoicism of a Zeno and the self-abnegation of an Augustine to practice medicine in a large city with its professional and economic requirements and retain that placidity of demeanor which could be termed a happy disposition. That there are not more neurasthenics in our profession is due solely to the self-mastery under the most trying circumstances of its personnel. I am almost ashamed to quote the old saw, "All work and no play makes Jack a dull boy," a homely axiom containing epitomized advice to which we should hearken.

Fortunate is the doctor who is in a position, after his arduous work of the winter, to steal away from his harassing duties to the quietude of his country home, where the jingle-jangle of the bells of the lowing kine pursuing their homeward way is but indolently reminiscent of the imperative ring of the telephone. Woe and alack! With many of us our country home is an airy castle somewhere within the realms of Spain, and until that modern innovation, the

aeroplane, is a safer mode of transit, it behooves us to content ourselves with a more or less brief sojourn in our native diggings. Alas! there are many of us to whom the anticipation of a summer's vacation in the country grows dimmer and dimmer in the perspective as time advances.

To those of us who are fortunate enough to be able to get away for a couple of weeks, the problem of how to secure the greatest amount of enjoyment out of the shortest space of time creates visions of delight even in the contemplation. It is to be a period of careless abandonment to vagrant fancies, a separation of one's self from the doctor, a complete change from our daily mode of life, a mental diversion along the simplest lines of thought, a jolly good time, a great holiday.

But how can we realize this idealistic *fête carrillonnée*? By getting away as far as possible from the refinements of modern culture and as near as possible to the simplicity of nature. Avoiding large hotels with their frivolities, conventionalities, manifold forms of dissipation, rich food and richer gossip. Seeking some unpretentious hostelry or farmhouse where you can revel in the luxurious independence of wear-

ing any old thing which suits your fancy; let the location be in some sparsely inhabited section beyond the convenient reach of the telephone or telegraph, or better still, having arranged for a competent confrère to take care of your practice, do not let your destination be generally known. You cannot afford to have some hideous gnome disturb the pleasure of your idyllic dream.

Put from you all thought of your professional care, as the weary, footsore peddler unburdens his weighty pack, allays his thirst, and beneath the inviting shade of a neighboring tree sinks to sleep and pleasant dreams.

In any event follow your personal predilections in choosing your own method of diversion.

If you are a disciple of the philosophic Isaak do not accept the alluring advertisement of "good fishing" (piscatorial myths), but by inquiries ascertain the truth, so that you will not, if an experienced fisherman, miss the keen enjoyment of a strike from a two-pound trout or speckled bass. Your elation may be great, but not one whit more keen than that of your unskilled brother, who, with his angle worms and improvised pole and line, draws from the muddy depths a six-inch "bull-head." He does not worry about its size—it will measure sixty inches in his description of it to his friends at home.

If fond of sailing, hire a safe old sloop or cat-boat (about 28 feet over all, 12 feet beam), which in a stiff breeze can make about four knots an hour. What care you for speed, your time is all too fleeting. Space and safety for yourself and crew, with a hamper of grub and a bottle or two—of water, the anchor weighed, the sail flowing free, with your hand working the tiller, looking strabismic to lee—Marco Polo-like—sail into a sea of enchantment, where polynuclear counts—count for nothing, and where the streptococci and the phagocytes agree.

If in you the contemplative mood is developed in excess of the sportive—if you are that which on the campus is known as a "Soberside"—what food you have for meditation in the infinite vari-

ety and beauty of animated nature of which you feel yourself now a part: the sun shines on you, the winds speak to you, the birds sing for you, the brooks laugh with you, and when the purple-crimson twilight unites heaven and earth in a glorious harmony, your spirit and body are at peace.

Thus let your vacation pass, unconcerned for the future; for if there is a human being on God's green footstool deserving of a respite from toil, it is the doctor, whose hours know no limit, whose sleep is perturbed and meals disturbed, who is praised to the highest and damned to the nethermost, and who, when gathered to his Fathers, leaves as an inheritance to his children charitable deeds and uncollectible bills.

THE ALLEGED TOXICITY OF ANTI-MENINGITIS SERUM.

FATAL cases, following the post-experimental stage of a remedy based upon laboratory research data and confirmed by clinical experience, should be reported, but when such fatalities are (deductively) ascribed to a cause and effect at variance with the generally accepted theory, it behooves us to study well the accuracy of the suppositions advanced. Of late, considerable prominence has been given by the medical press to the reports of a number of cases of death following the injection of antimeningitis serum into the subdural space, in the treatment of cerebro-spinal meningitis. A repetition of such reports could well arouse a suspicion against the innocuousness of the serum *per se*, without adequate justification. The interest manifested in these particular cases is wholly due to the theoretically deduced cause of death—respiratory paralysis caused by the toxic effect of the serum or one of its constituents gaining entrance into the fourth ventricle and acting upon the respiratory center. The consensus of opinion of men who have had large hospital experience in the treatment of epidemic cerebro-spinal meningitis is, that death, immediately following the injection of the serum, is probably due to the

variation in the intracranial pressure following the withdrawal of the spinal fluid and the introduction of the serum. It is also reasonable to assume that in virulent cases of very young infants, death could come unexpectedly and coincidentally with the injection of the serum for which the latter would be blamed. Fortunately, Dr. Simon Flexner, in an admirable article* entitled, "Accidents Following the Subdural Injection of the Antimeningitis Serum," satisfactorily controverts the toxicity theory and lucidly explains the present views of this most valuable therapeutic aid in the treatment of this dreaded disease. The knowledge he imparts relieves us of any compunction of conscience in the use of this remedy but does impose the greatest nicety of observation and judgment in its administration.

DR. ROBERT BRIDGES—POET LAUREATE.

THE medical world has been gratified by the appointment of Dr. Bridges as poet laureate of England, an honor to which all literary England aspired. We rejoice in the elevation of a physician to such an exalted post. We would rejoice still more if he would but sing of those disciples of medicine who have given to the world gifts so God-like in their nature, that their canonization as saints would be a posthumous honor in keeping with their earthly endeavors; but in this age of utilitarianism, their reward is not a place in the prayer-book, but a hymn of thanksgiving ever increasing in volume from millions of men and women glorified by life and the joy of living. That from amongst us one should be singled out, who has attuned his voice to the heartstrings of humanity is not strange, for the life of the physician sweeps over the minor and major chords of life's joys and sorrows, but seldom does he, as Dr. Bridges did, find the power of audible expression,—the music he creates lives and dies within the soul of its creator.

THE TURTLE AND THE HARE.

EDITORS of medical journals are like all other editors, endowed with the virtues, vanities and frailties of human nature. but viewing life *sur la branche* they possess

an indulgent philosophy, and a charitable simplicity which sometimes render them susceptible to imposition. Looking down upon the struggling throner they see exemplified valor, honesty and duplicity. If occasionally the branch breaks and the spectator falls amongst the fighters, and receives a punch in the eye his philosophy should teach him to run to the nearest tree, and regain his lost position of observation; sometimes the punch annihilates his philosophy and he stands revealed as an individual of impulse.

With a sense of pleasurable satisfaction we looked upon the completed form of the July issue of the *NEW YORK STATE JOURNAL OF MEDICINE* and said—" 'Tis good." We then sent it to the printer with the request that he would put it to press at once so that there would be no delay in its appearance. The next day there appeared in the *New York Times* newspaper the announcement that Dr. George Gibier Rambaud would in a few days give to the medical journals the composition of Friedmann's turtle vaccine. Without delay we called Dr. Rambaud over the telephone and stated to him that while the *JOURNAL* was in readiness to be printed we would hold it up for twenty-four hours if he would favor us with his article. We took it for granted that Dr. Rambaud's expressed wish to have it first appear in the medical journals, was based on ethical grounds so that its subsequent appearance in the newspapers could not be criticised. It was with considerable loss of time, and annoyance to us—trouble and inconvenience to the printer, that we, by displacing and withdrawing matter, succeeded in publishing his communication in the July issue. Five days in advance of its appearance in our *JOURNAL*, newspapers in New York City contained Dr. Rambaud's remarks on Friedmann's turtle vaccine. In our conversation with the doctor we explained to him that we desired to be the first or amongst the first to publish his story, but what puzzles us is Dr. Rambaud's interpretation of ethics in stating, according to the *Times* of July the 8th that his communication would be sent to the medical journals on Thursday morning, July 10th. In the same paper on the morning of the 10th appeared the following: "Dr. George G. Rambaud" in a formal statement revealed last night (July 9th) the ingredients of Dr. Frederick Franz Friedmann's vaccine for tuberculosis, followed by the interview containing the revelation published in the *Times* and other newspapers.

* *Jour. Amer. Med. Assoc.*, 1913, lx, pp. —

Original Articles.

THE RELIEF OF VESICAL OBSTRUCTION IN SELECTED CASES.

(Preliminary Report.)

By HENRY G. BUGBEE, M.D.,
NEW YORK CITY.

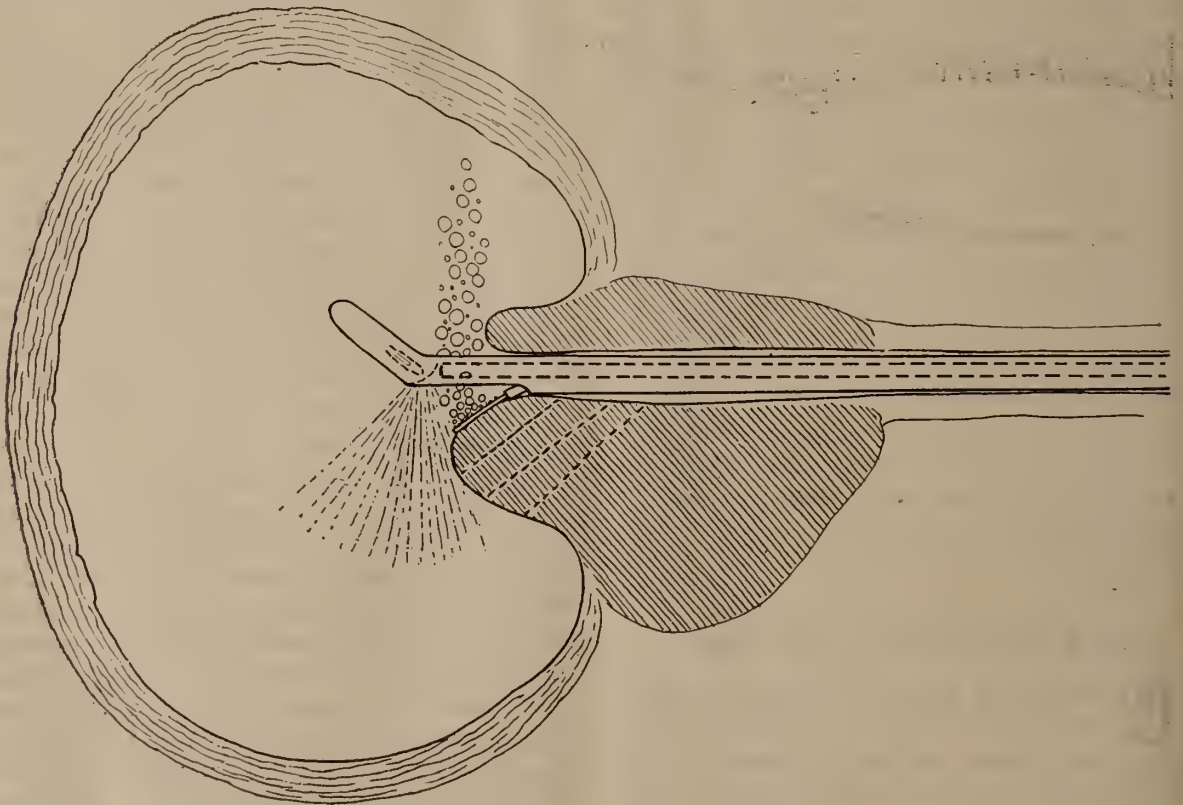
THERE are certain types of obstruction of the vesical outlet due to stricture of the prostatic urethra, contracture of the vesical neck, small prostatic enlargements, prostatic nodules left after perineal operation, irregular prostatic outgrowths and certain tumors, where open operation is hardly indicated, often unsatisfactory in its result, or contra-indicated because of the condition of the patient.

The treatment of these cases was the subject of a symposium at the meeting of the American Medical Association held in Atlantic City in June, 1912. Drs. Fuller, Deaver, Harpster, Chetwood and Young, outlined their methods of treatment. Dr. Young's method, the intra-urethral punch operation is the only new procedure and while it seems to have been successful in his hands, I would cite the following as disadvantages, bleeding is always present and often troublesome; after the first punch hemorrhage renders the operation practically sightless; the punch does not bite deeply.

I have treated patients after operation where each of these methods, the punch, cautery, perineal section and stretching, had been employed and observation in these cases has shown to me the disadvantages of each.

The method of relief which I propose and have used over a period of seventeen months, is, the destruction of the obstructing tissue by the use of the high frequency current applied in the same manner as originally proposed by Beer in the destruction of vesical papillomata. I have found that this current will destroy any tissue that it penetrates, in the same manner that it destroys a papilloma. There is no bleeding, very little pain, the work is done under the eye, the destruction can be limited and there is no injury to structures which impair the function of the organs.

The current is best applied with a No. 5 ply copper wire through an indirect close vision No. 18 F. cystoscope of the type shown in *Cut 1*. The terminal end of the wire for a distance of one-quarter inch lies on the tissue to be destroyed, be it prostate, median bar, ridge or growth, and the current is turned on. The wire penetrates the tissue, bubbles rise from the surface and after a few seconds of contact a gray furrow is left on the surface of the nodule to be destroyed. After several applications bubbles may fill the field which clears at once when irrigation is run in through the side cock. Often the rubber insulation of the wire will burn off,



Cut 1.—Cystoscope introduced. Wire in position. Dotted sections show the relative amount of tissue to be destroyed at each treatment.

necessitating a withdrawal of the wire and cutting it off flush with the insulation. This may have to be repeated several times.

This procedure can be continued until as much tissue is destroyed as is necessary, but it is advisable to destroy a little at a time, not over one-quarter inch in depth from the surface, repeating the treatment a week later.

The close vision cystoscope renders intra-urethral work feasible, also easy manipulation about the vesical neck. The bladder and urethral mucous membrane should be rendered anæsthetic by filling the bladder with novocain 4 per cent. in adrenalin 1-16000, leaving the anæsthetic in the bladder for twenty-five minutes before beginning the treatment.

The cases treated in this manner, fourteen in number, have all shown improvement, there have been no unfavorable results and there has been no tendency to recurrence of the trouble.

I was confronted with a case of inoperable carcinoma of the bladder in January, 1912. The bladder in this case had been opened the year previously, the patient having at that time an extensive carcinoma of the prostate, base and lateral vesical walls and as much as possible of the growth had been removed. Pathological sections showed a rapidly growing malignant tumor. The suprapubic wound never healed and when I first saw him he was in a pitiable condition. He could not void, on attempting to do so, foul smelling, bloody urine escaped from the suprapubic sinus.

The cystoscope entered the bladder with difficulty. The bladder contained eight ounces of foul, bloody urine with a sediment of pus and blood clots. About the vesical neck, trigone and lateral walls, involving about one-third of the entire bladder wall, was a villous growth, firmly attached, in places ulcerated and bleeding, in others covered with a gray slough. *Cut 2.* The remainder of the bladder wall showed a well marked cystitis. Pain and tenesmus were constant and intense.

Without having the slightest hope of benefit-

ing the patient, the high frequency current was applied. The improvement following the first application was immediate. Pain was relieved, bleeding lessened and he began to void. After four treatments the growth had shrunken to one-third the original size (*Cut 3*), and after six treatments (*Cut 4*), had disappeared. This



Cut 2.—Cancer projecting from the surface of the vesical neck.



Cut 3.—Superficial growth destroyed by the high frequency current.



Cut 4.—Superficial growth destroyed. The sphincter is smooth and the trigone visible.

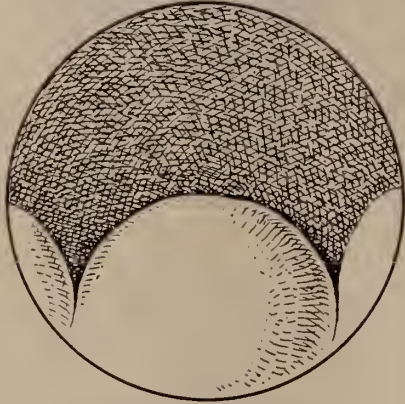
patient showed a slight recurrence of the growth on the prostate three months later. This disappeared after two applications of the current. The suprapubic sinus remained closed most of the time, only occasionally leaking a few drops in the morning. He died of pneumonia in May, 1913, sixteen months after the first treatment.

The immediate result was so surprising and satisfactory that at once I applied the current to another inoperable case and then used it to destroy tissue in the other types of vesical obstruction that I have mentioned, of which the following is an example.

CASE 3.—J. N. Applied for treatment March 27, 1912. Age 41. Always well. Fifteen months ago began to have difficulty in starting the stream, the stream was small and there was a slight burning pain before urination. Urinated

every two hours during the day and about twice at night. No hematuria. Sexual power diminished. Drinks moderately.

The physical examination showed a man of large frame, well nourished, with no lesions aside from the urinary tract. The prostate per rectum was slightly enlarged, firm and smooth. There were three ounces of residual urine. Cystoscopic examination showed a clearly defined median posterior enlargement of the prostate (*Cut 5*), encroaching upon the vesical



CUT 5.—Median posterior prostatic obstruction.

outlet. The remainder of the gland formed a distinct ring about the vesical neck. The bladder and kidneys were normal.

April 3, 1912. The high frequency spark was applied to the median posterior obstruction, a furrow being cut through the prostate from the bladder forward into the urethra. *Plate 1*.

April 8, 1912. No pain or reaction following the treatment. Residual three ounces. High frequency again applied in the same manner for two minutes.

April 12th. Less frequency, better stream. High frequency for one-half minute. There is a distinct broad furrow through the prostate. No redness. No ulceration. *Plate 2*.

May 1, 1912. Voids 5 ounces. Residual one ounce.

May 20, 1912. Empties bladder. Does not get up at night. Less frequency during day. Cystoscopy shows a normal vesical outlet. *Plate 4*.

May 15, 1913. (Thirteen months after first treatment.) Patient empties bladder. No frequency.

CASE 4.—T. A. Age 60. Applied September 30, 1912. Operation August 8, 1912. Suprapubic cystotomy with removal of vesical calculus. The bladder at operation showed trabeculation, numerous diverticula, and cystitis. The prostate felt moderately enlarged but was not thought to be large enough to necessitate removal.

The suprapubic wound showed no tendency to heal and the patient voided but a dram at a

time. Cystoscopy showed a contracted bladder, numerous diverticula, well marked trabeculation and cystitis. The prostate formed a distinct ring about the vesical neck with enough prominence posteriorly to interfere with the emptying of the bladder. There were numerous nodules of prostatic tissue projecting from the surface of the gland giving the vesical outlet the appearance as in *Cut 6*. There were two ounces of residual urine. Kidneys negative.



CUT 6.—Vesical outlet constricted by irregular prostatic hypertrophies.

The patient was treated by bladder irrigations until November 13, 1912, with very slight improvement and no signs of closing of the suprapubic fistula. The high frequency current was applied at this time to the posterior prostatic obstruction for three minutes.

November 15, 1912. Patient voids easily. No leakage.

November 18th. Passing many shreds of tissue. No leakage.

November 22nd. High frequency to posterior obstruction and nodules about margin of vesical orifice for four minutes. *Cut 7*.



CUT 7.—Enlarged vesical outlet after destruction of prostatic nodules.

December 4th. Suprapubic sinus leaks while voiding but patient empties bladder. Urine nearly clear.



Plate 1.
Furrow cut through median posterior
prostatic obstruction.



Plate 2.
Widened furrow shown in Plate 1.



Plate 3.
Appearance of the wire cutting through a
prostatic bar.



Plate 4.
Final result after destruction of posterior,
median, prostatic obstruction.

December 9th. High frequency for two minutes.

December 16th. High frequency for one minute.

January 3, 1913. High frequency to posterior obstruction for two and one-half minutes.

January 22nd. High frequency to posterior obstruction. (Completely destroyed.) Two minutes.

February 10, 1913. Cystoscopy shows no obstruction from the prostate (*Cut 8*). The patient voids ten ounces at a time and there is



CUT 8.—Same after destruction of prostatic tissue surrounding the vesical outlet.

no residual. Urinates three times during the day and twice at night. The urine contains a few flakes and shreds only. Patient feels well, has no discomfort. Suprapubic fistula healed firmly.

May 12, 1913. (Six months after first treatment.) Condition the same.

The following is a case of inoperable cancer forming an obstruction.

CASE 5.—F. L. Age 68. Applied for treatment September 15, 1912. Patient had retention with sixteen ounces of residual urine. He had had difficulty on urination extending over a period of twenty years. This had become progressively worse, having frequency, day and night, difficulty in starting the stream, burning on urination and hematuria during the past three weeks. The patient was of small frame and poorly nourished. The prostate per rectum was only slightly enlarged. It was stony hard and the base of the bladder could be felt, hard like the prostate.

The cystoscope entered the bladder with little difficulty. There were sixteen ounces of residual urine containing old blood clots. Occupying the trigone, extending from one ureteral orifice to the other and as far forward as the prostate was a growth, rough and uneven on the surface (*Cut 9*), attached by a broad pedicle, ulcerated in places and partly covered with blood clots. The prostate showed very slight intra-vesical enlargement. The remainder of the



CUT 9.—Obstruction of vesical outlet by tumor of prostate and base of bladder.

bladder was normal. The growth was typically malignant and inoperable. The high frequency current was decided upon as a possible source of relief of obstruction.

September 30th. High frequency for two minutes.

October 4th. Patient voids a fair stream. Urine contained many shreds. No bleeding.

October 7th. High frequency for three minutes.

October 16th. Voids every three hours. No hematuria. No pain. Empties bladder.

October 21st. High frequency for two minutes.

November 6th. Cystoscopy shows scar tissue in base of trigone. No growth. Same on January 3, 1913 (*Cut 10*).



CUT 10.—Tumor destroyed by high frequency current.

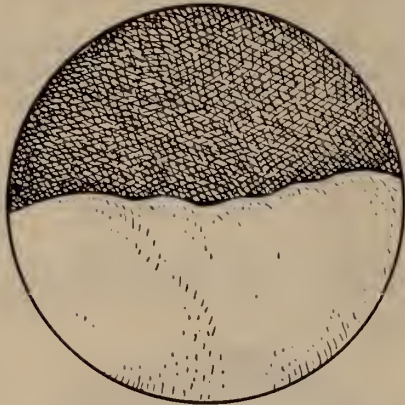
January 27, 1913. There are several small firm blood clots in base of bladder.

April 12, 1913. Patient has not passed the clots. Forceps were introduced through the cystoscope, the clots pulled to pieces and washed out. There is a small nodule of growth about 1 cm. in diameter at the site of the old growth. This was destroyed by the high frequency current.

Patient voids freely and empties the bladder. The prostate per rectum is not larger than in September, 1912. The patient during the past two months has shown signs of metastases in the stomach and liver and is rapidly losing weight and strength. The vesical symptoms have been nil.

CASE 6.—V. A. Aged 67. Applied for treatment January 10, 1913, complaining of frequency and slight difficulty on urination. He had noticed that an extra effort was necessary to start the stream, which was small and had no force. He had had an external urethrotomy ten years before and sounds passed since then. The prostate per rectum was firm, smooth and not enlarged. A No. 22 F. sound passed easily. Patient voided with some difficulty. The urine was negative.

Cystoscopy showed an encroachment on the lumen of the vesical orifice by a beginning enlargement of the gland, particularly on the posterior aspect. There were ten ounces of residual urine (*Cut 11*).



CUT 11.—Prostatic bar, obstructing the vesical outlet.

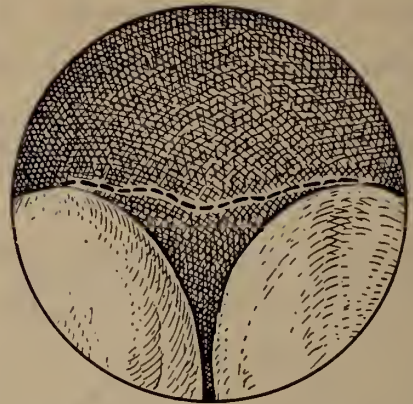
January 24, 1913. High frequency current applied to the posterior prostatic bar for two minutes. This was followed by no pain or discomfort. The urine was clear.

February 19, 1913. The posterior prostatic lobe is nearly level with the trigone. Patient empties bladder. High frequency applied for one minute (*Cut 12*).

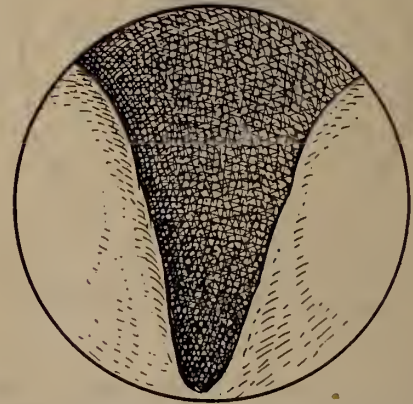
March 3, 1913. Cystoscopy shows no obstruction of vesical outlet. No symptoms (*Cut 13*).

May 15, 1913. Urinary function normal.

CASE 7.—J. C. Sixty-six years of age. Applied for treatment (November 12, 1912) for difficulty in starting stream and dribbling after urination. Frequency, day and night; every hour during the day. Patient had gonorrhœa twice, last time twenty years ago. Has had diabetes for fifteen years. Under medication and diet, this condition has remained stationary. Physical examination was negative aside from the urinary tract. There was a hard nodule in each epididymis. The prostate presented a slight



CUT 12.—Furrow cut through prostatic bar.



CUT 13.—Furrow widened by further destruction of prostatic tissue.

general enlargement per rectum, was firm and smooth. Cystoscopic examination showed the prostate prominent intravesically. The vesical orifice is encroached upon by a prostatic ring and posterior elevation of the gland. (Same as *Cut 11*.) There were six ounces of residual urine. The bladder showed beginning trabeculation. Kidneys negative. Urine showed 2 per cent. of sugar, otherwise negative. The high frequency current was applied to the median posterior elevation of the vesical outlet for three minutes a furrow being cut through the prostatic bar as *Cut 12*.

One week later no reaction following treatment. Voids freely. Urine clear. Cystoscopy shows a furrow through the posterior bar of prostate. High frequency applied for three minutes widening this furrow (lowering the vesical outlet). One week later. Empties bladder. No pain. Less frequency. Cystoscopy shows no obstruction of vesical outlet.

May 15, 1913. (Six months after first treatment.) No return of the urinary symptoms.

CASE 8.—E. T. Seventy-four years of age. Always well. Noticed frequency of urination two years ago. Catheter was passed on several occasions and the irritation disappeared. Has noticed of late dribbling after and between urina-

tion. Voids every two hours during the day and twice at night. A catheter passes easily. Residual urine, three ounces, cloudy. Cystoscopy shows trabeculation of lateral bladder walls. Many small diverticula: The prostate forms a prominent ring about the vesical neck. There are numerous small nodules projecting from the surface, narrowing the outlet (as *Cut 5*). Per rectum the prostate was smooth and not enlarged. Under occasional bladder irrigations the condition improved. The dribbling became less troublesome. Residual reduced to one and one-half ounces.

September 30, 1912. No treatment for three months. Residual, three ounces. Cystoscopy shows congestion about the vesical neck and a tendency to bleed easily.

January 18, 1913. Condition the same. Residual two ounces. Hyperæmia of mucous membrane continues.

February 1st. High frequency current applied all around the circumference of the vesical orifice for four minutes.

February 8th. No reaction. Voids freely. High frequency for two minutes. Prostatic nodules are less prominent about the vesical neck.

February 15th. Treatment continued.

February 20th. Good stream. Less dribbling. Residual one-half ounce.

March 15th. High frequency for two minutes to posterior bar. Residual one-third ounce.

April 15th. Cystoscopy shows no congestion about vesical neck. Posterior bar lowered. Voids freely, very little dribbling. Less frequency. Every three hours during the day. Often not at all at night. No redness about the vesical neck.

May 12th. Patient empties bladder. Very little dribbling. Often does not arise at night. Bladder neck appears healthy. The mucous membrane is pale. The vesical outlet is enlarged and the prostatic bar lowered to the level of the trigone. Ureteral orifices visible for the first time.

CASE 2.—W. B. Aged 65. December 26, 1911. Well until two months ago when he had acute retention. Since then has been catheterized. Bladder irrigations and sounds. Has become progressively worse. On exercise has temperature 102, pulse 110. A catheter was obstructed in posterior urethra. Bicoudé catheter passed. Residual ten ounces, cloudy, foul smelling urine containing pus and a sediment of colon bacilli. The prostate was very prominent intravesically. The surface was studded with nodules which extended around the vesical orifice, over the trigone and base of the bladder. There was a very large posterior median enlargement of the prostate. The vesical outlet was constricted as in *Cut 14*. Trabeculation was well marked and numerous diverticula were seen. The right ureteral orifice was normal, the left hidden by the prostatic en-



CUT 14.—Obstruction of vesical outlet by malignant growth of prostate.

largement. The bladder mucous membrane was everywhere hyperæmic and covered with loosely attached flakes of mucous and pus. The prostate per rectum was large, hard, nodular and adherent to the pelvic fascia; the base of the bladder was stony hard.

The condition seemed hopeless, was treated by irrigations for several months with only slight relief of the irritation. It became more difficult to pass the catheter owing to the progressive enlargement of the growth. The high frequency was then applied to the intravesical surface of the prostate.

May 15, 1912. At this time the patient had complete retention. A catheter (lisle, bicoude) passed with much difficulty. Pains in the lumbar region, thighs, groins, and tests were very severe. The current was applied once a week for eight treatments. After the fourth application a soft rubber catheter could be inserted with ease, the pains were less severe, the patient gained in strength. The prostate per rectum was one-third smaller. The vesical outlet then appeared



CUT 15.—Same after application of high frequency current.

as in *Cut 15*. After four more applications a continuation of the reduction was seen. After an intermission of four weeks the treatments were resumed, and October 20th, the patient began to void while standing for the first time

in a year. Vesical neck then appeared as in *Cut 16*. Metastases now appeared in the liver



CUT 16.—Further destruction of superficial growth, enlarging the outlet.

and caused death twelve months after beginning treatment with the high frequency current, but the vesical symptoms were virtually nil for eight months.

CASE 9.—M. aged 66 years. Applied for treatment January 22, 1913. For the past four months patient has had difficulty in starting the stream, frequency day and night and slight burning on urination. For the past week he has been catheterized once a day. Voids four ounces of urine which is hazy with pus and mucous. Residual two ounces. Prostate per rectum not enlarged. Cystoscopy showed a well marked median prostatic bar as *Cut 11*, no hypertrophy, beginning trabeculation of the lateral walls, many small diverticula, moderate cystitis. Kidneys normal.

The high frequency current was applied for four minutes to the median bar, cutting a furrow down to the level of the trigone (*Cut 12*).

January 26, 1913. Patient voids more freely. Residual one ounce. High frequency again applied, widening the furrow (*Cut 13*).

January 30, 1913. No residual. Less frequency of urination. High frequency applied for three minutes.

February 2, 1913. No residual. Feels very well.

February 28, 1913. Patient reports no vesical irritation. Voids once at night, every four hours during the day. Good stream. No residual.

CASE 10.—C. H. Aged 45. February 21, 1913, applied for treatment for difficulty in starting the stream, frequency of urination and slight burning. Voided twice at night. Had been under treatment for eight years with no relief of symptoms. The prostate per rectum was not enlarged. Residual two ounces. Stream had fair force. Cystoscopy showed the same picture as in *Cut No. 9*.

High frequency applied for three minutes to posterior median bar.

February 20, 1913. Treatment repeated. Voids more easily. Less frequency.

March 10, 1913. High frequency for four minutes. There is a broad furrow in the prostatic bar, cut to the level of the trigone.

April 30, 1913. Patient empties bladder, does not void at night. Voids every six hours during the day.

CASE 11.—J. W. Aged 66 years. Perineal prostatectomy two years ago. Since then had some difficulty in starting the stream, also in stopping it. Burning is always present while voiding. Urinates every two hours day and night. The urine is passed with a small stream of fair force which ends in a dribble. No prostate could be palpated per rectum. There were ten ounces of residual urine. Cystoscopy showed a distinct irregular collar of prostatic tissue about the vesical neck and several nodules of prostate projecting from the posterior half of the ring. Similar picture to *Cut 6*. The bladder showed chronic cystitis, trabeculation and numerous small diverticula.

October 20, 1912. The high frequency current was applied to the prostatic outgrowths about the vesical neck for a total of three minutes.

November 8, 1912. Patient voids more freely. Treatment continued.

March 17, 1913. Patient empties bladder. Stream has good force. Voids twice at night, every four hours during the day. Cystoscopy shows a flattening of the prostatic ring, especially on the posterior aspect.

CASE 12.—J. K. Aged 65 years. Operation eighteen months ago for contraction of the vesical neck. Perineal incision and stretching of the prostatic ring. Since then has had more discomfort than formerly. Urinates every few hours during the day, several times at night and has incontinence during the latter part of the day, especially when tired. There was no prostate to be felt per rectum. No residual. Cystoscopy showed a well marked contraction of the vesical neck due to a firm prostatic ring. In the median line posteriorly was a narrow slit extending to the level of the trigone. Similar to *Cut 12*. The bladder was in a fairly healthy condition, there being slight trabeculation only.

Irrigation of the bladder, passing of sounds, etc., gave very little relief.

April 15, 1913. High frequency current applied to the posterior aspect of the prostatic ring for a total of three minutes lowering the outlet.

May 2, 1913. The patient reports an improvement in the urinary symptoms, less frequency, very little dribbling and a better stream.

May 23, 1913. Cystoscopy shows a notch in the obstructing ring. This has widened by applying the current for three minutes. This case will be greatly benefited by the treatments to be continued.

CASE 13.—J. D. aged 74 years. Perineal prostatectomy two years ago. Since then has had to be catheterized, patient only passing the overflow, about sixteen ounces.

There was no prostate to be felt per rectum. Catheter passes easily. Residual sixteen ounces. Urine clear.

Cystoscopy showed a relaxed, trabeculated bladder studded with diverticula. The vesical neck was surrounded by an irregular ring of prostatic tissue as *Cut 6*, which reduced the lumen to a small aperture.

May 2, 1913. The high frequency current was applied to the ring, posteriorly for three minutes, cutting a furrow through it.

May 9, 1913. The treatment was repeated widening the furrow.

May 21, 1913. Patient thinks he has voided a little more than before treatment. Treatment continued.

This patient undoubtedly has an atonic bladder and it is a question if with the obstruction removed he will be able to void in large quantities. With the barrier removed the condition will undoubtedly be improved.

CASE 14.—Aged 84. Applied for treatment July 19, 1912. The patient on examination was found to have a carcinoma of the base of the bladder which had ulcerated through into the rectum, forming a recto-vesical fistula. The patient discharged fecal matter through the bladder and at other times urine through the rectum. The high frequency current was applied twelve times at intervals of two weeks, each application for about three minutes.

March 12, 1913. All of the superficial growth has disappeared, the patient is much more comfortable. There is only occasional discharge of fecal matter from the bladder and the stream of urine is larger. Urine leaks into the rectum when the bladder is partially filled. The patient has gained weight.

The above cases, fourteen in number, have all shown improvement. This improvement has been accomplished through a destruction of tissue. The tissue has in each instance been destroyed under sight, it has been limited, has caused no injury to normal tissues or function, has been nearly painless, and has not incapacitated any of the patients. They have required almost no care after treatments. This method does not take the place of surgery. It offers relief in cases where operation has failed or is contra-indicated. In median bar obstructions it gives decided relief. In small prostatic enlargements, particularly of the median lobe type, it is efficacious. In destroying nodules left after prostatectomy the vesical opening is freed. In extensive cancer of the prostate or base of the bladder much of the superficial growth can be destroyed, the bleeding controlled, the vesical orifice opened, pain and tenesmus relieved, absorption lessened and catheterization made easy.

SOME PHASES OF THE SURGERY OF THE STOMACH.*

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ONE, if not the most, essential thing in the surgery of the stomach is the diagnosis.

I have been impressed with the considerable number of cases in which a probable diagnosis of gastric ulcer or, to a less extent, of cancer, made by internists in or out of a hospital service, and often concurred in by the surgeon, has been found a mistaken diagnosis on operation. To be sure, the surgeon's examination in such cases is often a cursory one, and he is apt to depend on the written history and examination. I think an independent anamnesis and examination would often be better "Mistakes in diagnosis are oftener the result of a lack of examination than of a lack of knowledge."¹

In the diagnosis of a chronic ulcer we depend chiefly on the symptoms, of which the following are the principal ones: pain or distress, gas, pyrosis, sour eructations, and sometimes nausea and vomiting. These, in whole or in part, occur in other conditions, so that it has been estimated that only about 10 per cent. of patients presenting symptoms suggesting a stomach lesion have ulcer or cancer. The remaining 90 per cent. may be about equally divided into three groups.

In Group I the symptoms are due to general medical diseases, such as cardiovascular and renal diseases, pernicious anemia, pulmonary tuberculosis and tabes. I have the records of two cases with gastric symptoms suggesting ulcer, referred to me for operation some years ago, which were explored without finding any lesion of the stomach. One had chronic cardiovascular and renal disease and the other advanced chronic tuberculosis of the left apex and pleura.

In Group II the symptoms depend upon the closely associated conditions, congenital or acquired visceral displacements, such as gastrop-tosis and enteroptoses, atonic dilatation of the stomach and gastric neurosis.

I am inclined to believe that a neurosis is held responsible for a number of cases with gastric symptoms, in which the latter depend upon some other cause, such as a ptosis or something that we fail to diagnose. However that may be, it is now acknowledged to be bad surgery to do a gastro-enterostomy in such cases, as I did in two cases some years ago, with a negative result. These patients are often rendered even worse than before by the operation, so that W. J. Mayo has reported closing the anastomosis in such cases. It may be justifiable, and in one or two cases I have found it beneficial, on the principle of suggestion, to explore doubtful cases of this class. But operation is too serious

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a means of psychotherapy for routine use in gastric neurosis. I make it a rule not to do a gastro-enterostomy unless I can demonstrate a lesion for which it is indicated.

These ptoses, and the kinks that may result from them, may in some cases be much improved by operation, and the patients thereby relieved of the chronic dyspeptic symptoms, referred to the stomach or to the right lower quadrant, which they present. Hence it is highly important that they should be carefully X-rayed to arrive at a correct diagnosis. I have employed Coffey's "hammock operation" in a few cases of combined ptosis of the stomach and transverse colon with considerable benefit.

Lane's kink, in its various forms, comes under this group, as it often causes reflex gastric symptoms. In fact, Lane holds that duodenal, and also gastric, ulcers are due to intestinal stasis, depending on some form of intestinal kink, and that their proper treatment consists in exclusion of the colon, or a relief of the kink, rather than in gastro-enterostomy, etc. Though this view is not at all generally accepted, these kinks and their baneful effects may be relieved by proper surgical procedures.

In Group III the gastric symptoms are a reflex expression, manifested by the stomach, of some chronic lesion of the alimentary tract, outside of the stomach and duodenum, *viz.*, the appendix, gall-bladder, pancreas, and also tuberculosis of the large intestine, tumors of the intestine, chronic intussusception, etc. Such chronic disturbances in the alimentary tract, outside the stomach, bring on pylorospasm, which results in indigestion and gastric distress. Our only conscious knowledge of disturbances in these organs is received from the stomach.

It has been a not uncommon experience of my own, as of all surgeons, to operate for a supposed gastric or duodenal ulcer and find none present, but on further exploration to find a chronic appendicitis or pancreatitis, gallstones, etc. I have a number of records of such cases and in a large proportion the gastric symptoms subside if we can relieve the cause of the reflex disturbance. In a few cases the removal of a chronic appendix has failed to relieve the symptoms. In one recent case I found, on a second operation, an old chronic tuberculous inflammation of the colon on either side of the hepatic flexure with adhesions in the form of an obstricting double-barrelled stenosis, to which the omentum was firmly adherent. The relief of these adhesions has so far resulted satisfactorily. In other cases we find an intestinal kink or an adherent or distended cecum, perhaps associated with a mild colitis. Therefore the operator should not be content with a simple appendectomy, but should make a wide exploration, in justice to the patient, especially if there is a history of habitual constipation or mucous colitis. For this purpose a more generous incision than a short muscle-splitting incision is required.

In view of the above, can we not diagnose these causes of gastric symptoms in Group III from true gastric or duodenal ulcer before operation? In most cases, yes. These patients may have all or several of the symptoms of ulcer in recurring attacks, but in chronic recurring appendicitis they are more irregular, coming on after one meal and not after the next, and food rarely gives relief as in ulcer. There is more of a distress than a pain, combined with nausea and gas, and exertion may greatly aggravate the distress. If in the dyspeptic attacks the pain radiates to or below the umbilicus, the appendix should first be considered. If there is a history or the presence of tenderness or pain at McBurney's point the diagnosis is more certain, but this is not the type of case that usually gives stomach symptoms.

Typical gallstone attacks are unmistakable, but often there are equally typical, but less well recognized, mild attacks of gastric distress and upward pressure from gas, coming on soon after eating or at irregular times, and eased by belching or slight vomiting. These attacks often come on suddenly and are of short duration, but there is another group of cases due to gallstones in which there are more prolonged attacks of dull epigastric or right-sided pain, which may be increased by motion, deep respiration or food. These two forms should be more readily differentiated from ulcer than many cases of chronic appendicitis, but in late cases of chronic gallbladder trouble complicated by adhesions, or perforation, or infections of the duct, chronic gastric disturbances may so simulate cases of chronic ulcer, with complications, that the diagnosis can only be clearly made by developing the early history. Tenderness over the gall-bladder, especially on deep inspiration when the gall-bladder is pressed down against the fingers, is very suggestive of gall-bladder trouble.

Chronic pancreatitis presents less typical symptoms. There may or may not be pain or a dull distress, nausea and vomiting. Jaundice may occur, except in the 30 per cent. of cases where the duct does not tunnel, but grooves, the pancreas, but the stools may be white without jaundice. Loss of flesh and strength, anorexia, and flatulent dyspepsia are common. Pancreatitis is often associated with gallstones or gastric and duodenal ulcers, and I have been struck with its common occurrence and the relative frequency with which it has been the only finding in operations for ulcer in former years.

The conditions named in Groups I, II and III which may possibly cause the symptoms in a given case must be excluded by a careful examination before considering the question of a gastric lesion.

As emphasized by Moynihan, Graham and others, the diagnosis of pyloric and duodenal ulcer is made almost entirely from the history of the case, and the symptoms, which in many cases, in the early stages are pathognomonic.

The one diagnostic symptom is pain in the epigastrium, varying from severe pain to a feeling of distress and occurring in periodic attacks alternating with normal health. But its pathognomonic feature is the time of onset, varying from two to four hours after a meal, and the means of relief by vomiting, lavage, and the taking of food, drink or alkalies. There may be other symptoms: gas, causing a feeling of pressure; eructations of gas, pyrosis, vomiting, hematemesis and melena. These are neither as constant nor as characteristic.

In my experience I have been impressed with the number of cases which were diagnosed as pyloric or duodenal ulcer by various clinicians, without the presence of the typical hunger pain, and which on operation showed no ulcer but perhaps a chronic appendix or gallstones. I do not operate with the confident expectation of finding a duodenal or pyloric ulcer in the absence of the typical hunger pains, unless the diagnosis is strongly confirmed by some other diagnostic means.

But one purpose of this paper is to emphasize two other points:

First.—We may have duodenal or pyloric ulcer without this typical pain. I did a partial gastrectomy about a year ago on a woman in whom a pyloric ulcer was already becoming a carcinoma. She had anorexia, nausea and vomiting, but never had pain except once and then not typical ulcer pain. Like most surgeons, I have also operated on patients with perforated duodenal ulcer who had no pain before the perforation. Some of these ulcers run a latent course and never give ulcer pain; other patients, after the operation has established the diagnosis, give a fairly good ulcer history on careful inquiry. Struthers,² in reporting 27 cases of perforated duodenal ulcer, of whom 10 had few or no symptoms, says that typical hunger pain was observed in gastric and not in duodenal ulcer. From his experience he draws the inference that the exclusive or decisive significance is not to be attributed to the anamnesis that is done by some.

Second.—I have operated on patients having the typical pain and found no ulcer. In one case with a typical history nothing but chronic pancreatitis, without gallstones, was found. In a very recent case, with a perfectly typical history of duodenal ulcer with profuse melena, treated medically for some time, there was no ulcer demonstrable in the duodenum or stomach. This brings up the question, can medical treatment cure these chronic ulcers, with periodically recurring symptoms? I cannot answer it, though such a cure might explain some of these cases. A statement of W. J. Mayo's³ suggests another explanation of some of these cases. In several of his cases, operated without finding any evidence of ulcer, continued symptoms led to a second operation some months later, when an

ulcer was found. He says: "Either the ulcer had been overlooked at the primary operation, or it had been confined to the mucous membrane, and the musculoperitoneal coats were involved later." Also, Blad⁴ reports two cases in which ulcer, not found at operation, was discovered later at the autopsy. Experiences such as these seem incompatible with the statement of Moynihan that in the last 100 cases of chronic gastric and duodenal ulcer a mistaken diagnosis was revealed by operation in only three cases.

When, in time, an ulcer is complicated by adhesions, interfering with gastric motility or by stenosis of the pylorus, the symptoms are more persistent and less typical. The pain is more constant and not relieved, but increased, by food, the vomiting is more irregular and shows the residue of former meals. As these symptoms are common to many types of chronic dyspepsia due to gallstones, the appendix, or the pancreas, we must bring out the former history to establish the diagnosis. The further from the pylorus the ulcer, the less typical the symptoms, but as 90 per cent. of gastric ulcers are pyloric we are chiefly concerned with them.

But are there no other means of making or confirming the diagnosis? Palpation is of little service, and we cannot rely independently on the gastric analysis, only as a help, and often a slight help, in the clinical diagnosis. Many conditions give hyperchlorhydria and it is most marked in the early stages and by no means always present in ulcer patients at the stage when we see them. Still, at some time in its course hyperacidity and hypersecretion occur in ulcer, either as a cause or an effect. Moynihan says that "persistent recurring hyperchlorhydria is duodenal ulcer." But it occurs in many cases in Group III. Out of 112 cases of so-called chronic hypersecretion followed by Soltau Fenwick to the operating table, every one showed chronic gastric or duodenal ulcer, cancer of the stomach, appendicitis or gallstone disease. It must be remembered that the two last named conditions may give rise to it. Hypersecretion is more persistent than hyperchlorhydria.

As the motor is more important than the chemical function of the stomach, so is its disturbance the more important. Hence a most important sign in the examination of the stomach contents is food retention, especially of small particles of food, more than six hours after a meal. We must make the diagnosis without the presence of blood in the stomach or stools in a large majority of cases. When present, it may be an aid to diagnosis.

The X-ray promises more helpfulness in the future than it has given in the past. The six-hour plate, after the bismuth meal, may plainly show delay in emptying the stomach. Two things are necessary, good plates and their proper interpretation. My own experience is that the interpretation by the average radiologist of the average plates is not as accurate as the

clinical diagnosis. Still, in many cases it is of great assistance, sometimes in proving, at other times in disproving, a doubtful diagnosis. The X-ray is of much value in showing changes in the shape, size and position of the stomach and colon. Series of plates may also show interference with the peristalsis. The Havdek symptom of a small bubble-like appendix to the regular shadow is of value when present. According to Moynihan,⁵ the X-ray may help to distinguish a duodenal from a pyloric ulcer. In the former the gastric motility is greatly exaggerated so that the bismuth meal begins at once to pass into the duodenum and by the commencement of the pain the stomach is almost empty. With pyloric ulcer, on the contrary, there is usually delay in emptying the stomach.

Cancer of the stomach is the commonest form of cancer, comprising 30 per cent. of all cases. In the diagnosis of gastric carcinoma there is no one pathognomonic symptom as in ulcer. The symptoms are those of chronic dyspepsia. As compared with ulcer, the pain is more constant and not relieved, but increased, by food, and is often a depressing ache or a strange distress; the vomiting more often contains altered blood (75 per cent. of cases) and food residue; the gas is more annoying, continuous and offensive, and the regurgitation is less acid. A palpable tumor is present in 60 to 70 per cent. of the cases coming to the surgeon, and 95 per cent. of the palpable gastric tumors are carcinoma, 5 per cent. calloused ulcers. An important diagnostic point is the steady downward course without complete intermissions, as in the early stage of ulcer, and the marked mental depression. The skin becomes saffron-colored and dry, and the patient emaciated. The X-ray and the test meal are of more service than in ulcer. Nearly half the cases have free hydrochloric acid, but its absence and the presence of lactic and butyric acid, undigested food and altered blood strongly suggest cancer, though they only indicate diminished motility or pyloric obstruction. There is much truth in Deaver's remark that the greatest source of delay in the diagnosis of gastric cancer is the test meal. That is, depending upon it and waiting until it becomes pathognomonic in the late stages is responsible for the hopeless condition of many patients when they reach the surgeon. There are no symptoms of the cancer proper during the curable period, so it is a fortunate thing that 80 per cent. occur in the pyloric portion, where they attract attention by obstructive symptoms.

The great need of cancer of the stomach is early diagnosis. The test meal is diagnostic only late in the disease, when a diagnosis is not difficult. The earlier the stage, the less positive is the X-ray. What are the available means of early diagnosis?

In the 80 per cent., and over, in which the cancer is in the pyloric portion, the more or less early appearance of a palpable, movable tumor

and of obstructive symptoms, with the discovery of food remnants in the stomach eight to ten hours after eating, are the principal, if not the only, definite early signs of gastric cancer. These demand exploratory incision at once. Cancers further away from the pylorus do not give signs of obstruction or a palpable mass so as to indicate early operation. Operability, therefore, depends largely on the location of the growth in the pyloric antrum and along the lesser curvature (80 per cent.), for this is the part that can be palpated and that can be resected.

While exploration is demanded in the above conditions it is often most advisable in patients of a cancer age with chronic dyspepsia without known cause and not cured by medical treatment in a reasonable time. If this exploration were practiced more often we would save more cases of gastric cancer by early operation. Probably less than half of the cases are diagnosed early enough to allow a radical operation. All cases of suspected gastric cancer should be admitted to the surgical side of a hospital. No case has ever been cured by medical treatment and it is a surgical and not a medical disease.

In a former paper on this subject I spoke hopefully of the tryptophan reaction as a means of early diagnosis. Further experience has proved it to be not so reliable, though perhaps more so than any of the sero-diagnosis tests in their present development. Giani⁶ found that it gave both positive and negative results in both cancerous and benign cases, and that the saliva often gives a positive test. He concludes that it gives neither a sure nor a probable indication of the presence of gastric carcinoma. It is also a complicated and expensive test. According to Jacque and Woodyatt,⁷ the test is more reliable if the gastric juice is filtered through a Berkefeld filter.

It is not imperative, even if it were possible, to diagnose between cancer and ulcer of the stomach. What is essential is the diagnosis of a surgical condition indicating operative treatment.

TREATMENT.

What is the proper treatment of chronic pyloric or duodenal ulcer? Medical treatment, with careful diet by the Lenhartz or v. Leube systems, should first be tried and continued for a longer time than in the case of acute ulcers. Under proper medical treatment, or without it, the patients become symptomatically well, until another periodic attack occurs. This is the natural course of the disease. It is an open question, as to which Mayo says he has grave doubts, whether chronic calloused ulcers undergo permanent spontaneous cure. Mayo has operated in many cases in the interval between attacks and has never seen a complete definite closure of such an ulcer. Definite healing probably takes place in a high percentage of acute

ulcers and other ulcers in the early stages under medical treatment. When we operate for pyloric stenosis, with a previous history of chronic ulcer, we not infrequently find what appears to be the scar of a healed ulcer causing the stenosis. In some cases, also, of perigastric adhesions we assume an ulcer, that is no longer apparent as such, to be the cause, in the absence of any sign of a neighboring source of inflammation. In both these conditions there is delay in emptying the stomach, the contents become less acid, and therefore the conditions are more favorable for the healing of the ulcer. It seems at least possible, therefore, that chronic ulcers may cicatrize without operation. Most supposed symptomatic cures suffer relapses and the results of medical treatment are far inferior to those in acute ulcer.

I do not believe in delaying operation when careful medical treatment and diet have failed more than once (that is, twice or more), on account of the dangers inherent in the ulcer, perforation, hemorrhage and malignant degeneration. The latter danger is almost *nil* in duodenal ulcer, but that of hemorrhage and the resulting anæmia is greater.

The result of posterior no-loop gastrojejunostomy for duodenal ulcers and those obstructing the pyloric end of the stomach is excellent and its mortality is almost *nil*. It is often wise to infold the crater of the ulcer, and this is imperative if it looks as if perforation was imminent. If hemorrhage has been free it is well to pass a cat-gut ligature beneath the main vessels running to the ulcer.

Excision is considered the proper treatment for ulcers more distant from the pylorus where the cicatricial contraction of the ulcer, or of the scar left by its removal, will not cause stenosis of the lumen. I have found that some of these patients still complain of gastric trouble, apparently from the interference with gastric motility by the operation or the resulting adhesions. Hence, gastrojejunostomy has to be added to insure the complete cure of the patient.

When gastrojejunostomy is done for a pyloric ulcer that, at the time, does not stenose the pylorus, the results may be better if the pylorus is artificially stenosed or closed by infolding or constriction, by one of the many methods used for this purpose, especially among continental surgeons.

It stands to reason that after gastrojejunostomy or any operation for chronic ulcer, especially where the ulcer remains, medical treatment and diet should be instituted and continued for some time. I generally put these patients on a modified Lenhartz diet, with the use of alkalies, to neutralize hyperacidity. If this is done, I think the more radical procedures of so-called pyloric exclusion, such as v. Eiselsberg's, in which the stomach or duodenum is divided on the cardinal side of the ulcer and the two ends closed, are generally unnecessary. The ulcers heal without this.

Better than this and more effectively radical is the resection of the ulcer-bearing area, as recommended by Rodman. The main object of this is to avoid the possibility of malignant degeneration of the calloused ulcer, since Wilson and MacCarty have shown that 71 per cent. of the gastric cancers, resected by the Mayos, apparently developed on an ulcer basis, and Graham found that 59 per cent. of the cases of cancer coming to the clinic gave a clear history of gastric ulcer. In two cases of large indurated ulcer resected by me not long ago, carcinoma was already present.

Gastrojejunostomy by encouraging the healing of the ulcer, with the help of medical treatment, prevents its malignant degeneration. Only an exceedingly small percentage of these patients ever develop cancer. I do not think, therefore, that every chronic pyloric ulcer demands resection, but only the larger and more calloused ones, which, from inspection and palpation, the surgeon cannot differentiate from cancer. Here resection should always be done if the general condition of the patient, and the local condition of the mass, justify it. The operation is surprisingly well borne, but the mortality is decidedly higher than that of gastrojejunostomy in ulcer cases. If there is any doubt about the patient's condition, we can do the operation in two stages: in the first, the gastrojejunostomy (or, in addition, as v. Eiselsberg suggests, the division of the stomach on the cardinal side of the ulcer); in the second, the removal of the indurated mass.

To be sure, many, probably most, of these large indurated ulcers heal up after gastrojejunostomy. I did this operation some years ago in a man presenting a large, hard pyloric tumor, which I thought a cancer and so gave a bad prognosis. I saw him in perfect health two and a half years later and have since heard of his continued good health. Many surgeons have had similar experiences.

I have never had a vicious circle after posterior, no-loop gastrojejunostomy. That it provides gastric drainage, even in the absence of pyloric stenosis, may be readily shown by the bismuth X-ray.

In two cases where the local conditions did not permit this operation I have brought a short jejunal loop up through the mesocolon and then through the gastrocolic omentum and made the anastomosis anteriorly. One of these patients, a laborer, was reported perfectly well and working hard many months later.

In several cases of perigastric adhesions, interfering with the motility of the stomach, the results of freeing such adhesions have been excellent. If the adhesions re-form, they apparently do not do so to the same extent as before.

As before stated, unless I can see or feel an ulcer or cancer I do not do a gastrojejunostomy. Under these circumstances the other sources of gastric symptoms should be explored and ap-

propriately treated. Moynihan removes the appendix, after the gastrojejunostomy is made, on the ground that absorption from a pathologic appendix is a leading factor in the etiology of ulcer.

The proper treatment of gastric carcinoma is resection. The Billroth II method is the best. I have done one case by Kocher's method, but was obliged subsequently to add a gastrojejunostomy. The operation is surprisingly well borne; the mortality is due to the patient's condition rather than to the operation itself. Among ten cases of my own there was but one death, and that from pneumonia on the fifth day. This patient, with only 30 per cent. of hemoglobin, was otherwise doing well. The mistake was in doing such an operation on such a poor subject, or, perhaps, in not doing it in two stages. One of these ten cases, a large tumor six inches long, was pronounced by the pathologist to be gastritis polyposa.

The presence of a large, palpable tumor is not a sure indication that resection cannot be done. Two of these ten cases had a tumor as large as a small grape fruit. The operation was easy and well borne; one patient lived 18 months and was in perfect health until the last month or two, when the cancerous liver began to give him trouble. Naturally, we can hardly expect these advanced cases to make a permanent cure. Fortunately, lymphatic invasion is relatively late and slow in carcinoma of the stomach, occurring in only 50 per cent. of cases, according to Bland-Sutton.

No resection should be done if tumor metastases are found in the liver, bowel, umbilicus, peritoneum, pelvis, supraclavicular lymphatics, etc., all of which should be searched for metastases.

If the disease is too far advanced for resection, gastrojejunostomy may be done as a palliative drainage operation, but the mortality is nearly the same as in resection. It is in these cases that almost the only mortality from the operation has occurred in my experience. Moreover, the relief afforded is not as great as might be expected. Hence it is better to take some risks and do a resection, and it is here that the two-stage operation is most applicable, doing the gastrojejunostomy in the first stage.

The ultimate result depends upon the lymphatic involvement. Hence, the earlier the case is operated on, the better is the ultimate, as well as the immediate, prognosis. This leads back again to the supreme importance of early diagnosis.

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THE MEDICAL VERSUS THE SURGICAL TREATMENT OF PUERPERAL ECLAMPSIA.*

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GENTLEMEN: Your kind invitation to address you upon this subject is due to the well known fact that I am opposed to all unnecessary surgical interference in the treatment of puerperal eclampsia.

The severity, duration and frequency of the convulsive seizures vary. This depends, unquestionably, upon the character and extent of the pathologic changes within the maternal organism. That the disease is fatal from its inception, in some cases, has been amply proven by post-mortem findings; in others, the condition was found to be amenable to treatment; and, in not a few cases, recovery took place without treatment. Sometimes the brain has been anemic, sometimes plethoric. Edema of the brain and pia-mater may be associated with anemia. Hemorrhagic exudates have been found upon the cortex and at the base of the brain. Apoplectic coagula are infrequent.

Kidneys or liver are always involved; not infrequently both. The pathologic process consists, principally, of cloudy swelling, fatty degeneration and necrosis of the secreting glandular epithelium. In the kidneys it is the epithelium of the convoluted tubules; in the liver that of the acini. Hemorrhages occur in the periphery of the acini and thrombi form within the inter- and intra-acinous branches of the portal vein. In some cases the pathologic changes may be recognized by the naked eye; in others the microscope is essential for their detection.

Fatty degeneration and necrosis of the muscular fibres of the heart occur with moderate frequency. Multiple thrombi may be found within the vascular system and the lungs. Emboli within the liver, the presence of placental or fat emboli, hemorrhages into the serous membranes are not always found; they are of secondary origin. All the changes found within the body of the eclampic dead, indicate the presence of a poison, or poisons, and the cause and character of puerperal eclampsia are based upon this theory and this theory alone.

Since 1844, the time of Lever, Oliver Wendell Holmes and J. Y. Simpson, every avenue of research has been attentively pursued by a host of competent investigators, to discover the cause of puerperal convulsions. But of no avail. All the theories based upon the experiments of Frerichs, Traube and Rosenstein, Spiegelberg, Bouchard, Ludwig and Savor,

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Fehling and Shuhmacher, Dienst, Weichhardt and Veit have proved false. The latest theory, Fischer's in 1913, that of acidosis or decreased alkalinity of the blood, is all but generally accepted.

To the practitioner it is of little import whether the convulsions, coma, or paralysis in the pregnant, are produced by an isomer of uric acid, leukomaine, lactic acid, pressure upon the ureter, intra-abdominal pressure, thrombi-forming elements from the fetus or from something else.

What the practitioner wants to know is: *How is a case of puerperal eclampsia to be treated that the lives of mother and child be saved?* This all important question can be answered only by a study of the history—not of the patient—but of the disease.

The phenomena of eclampsia have been studiously observed and carefully recorded for the last 70 years, especially upon the continent of Europe, including England, and in this country. There is no difference of opinion as to the symptoms, course, diagnosis and prognosis of this disease. All agree that it is sudden in its onset and of short duration; that the number of seizures varies from one to more than an hundred; that one attack may be fatal, while complete recovery may occur spontaneously even after numerous convulsions.

In the majority of cases eclampsia results, primarily, from renal insufficiency; in some cases the convulsions are due to acute yellow atrophy of the liver; in yet other cases the attacks are due to extravasation of serum or blood in the brain or spinal cord. This explains the varying course and termination of this disease—why some cases are fatal in spite of the best of care, why others yield to treatment, and why some recover when not treated at all or, even, notwithstanding bad management.

The diagnosis of acute yellow atrophy of the liver is, probably, never made ante-mortem; and were we able to make it, it would avail us naught. The disease ends in death. Practically the same may be said of apoplexy. We know of no remedy for these two varieties of eclampsia. Even if leucin and tyrosin in the urine were reliable indications of acute yellow atrophy or some other acute degenerative process, of what help would it be to practitioners?

The fetal mortality of eclampsia depends greatly upon the period of gestation and the manner and time of delivery after the onset of the disease. Premature birth, version and extraction of the child are frequent causes of the death of the child. The accouchement force of the past destroyed the great majority of children and, frequently, the mother. But notwithstanding new methods, especially vaginal and abdominal hysterotomy and Bossi dilatation, the fetal mortality remains high.

Because all of the remedies employed to combat this malady have failed at some time, and because the death of the child in utero, or an early expulsion of the same has, apparently, favorably influenced the course and termination of the disease, many recent writers and practitioners have concluded that "*emptying of the uterus*" is the *sine qua non* in the treatment of puerperal convulsions. This, in my opinion, is a grievous error. *The prognosis of this disease depends wholly upon the character and extent of the pathologic lesions.*

In 1890, Halbertsma stated, that *Cesarean section was the only remedy for puerperal convulsions.* Later, Bumm declared that *emptying of the uterus after the first attack would reduce the maternal mortality to 5 per cent.* Since then, operators abroad and at home have performed vaginal and abdominal hysterotomies indiscriminately and with horrifying frequency.

The treatment of eclampsia would be simple if the conclusions of Halbertsma, Bumm, and their followers were correct. Bumm himself states: "The prognosis in each case depends upon the gravity of the symptoms. Severe, long-continued attacks, early and profound coma, complete anuria, hemoglobinuria, and constant high temperature are unfavorable indications. . . . Under such circumstances the termination of labor has a decidedly favorable influence upon the disease." It is admitted that when a patient is in labor, an early termination of it is the best treatment. Bumm also states: "Eclampsia may occur during pregnancy and terminate in recovery; and cases, in which the attacks come on during the puerperium, after a perfectly normal labor, may run an unfavorable course." And yet, despite these admissions, he concludes that *prompt delivery after the first attack in every case would reduce the maternal mortality to 5 per cent.*

A statement like this, from an authority like Bumm, explains the frequency with which abdominal and vaginal hysterotomy is to-day performed for the relief of puerperal convulsions.

Reuben Peterson, too, says: "*Putting an end to pregnancy stops the intoxication.*" To this McPherson naively remarks: "*This is a dogma we all wish were true*"; and he accepts it only as "*A creed defensible from a pragmatic standpoint.*"

Peterson and McPherson are the chief advocates of vaginal and abdominal Cesarean section, for the relief of eclampsia, in this country. It is no surprise to me that, with the help of Halbertsma and Bumm abroad, we now find numerous surgeons, gynecologists and obstetricians who regard surgery the most valuable remedial agent in the treatment of puerperal toxemia.

It is my purpose to show that all surgical intervention, no matter of what form, has accom-

plished little or nothing in reducing the mortality of puerperal convulsions.

Peterson states: "*Since the real cause of eclampsia is unknown, the only method at our command for determining the best treatment is by a thorough trial of the different methods of treatment.*"

This is very true. However, all methods have been tried in a sufficient number of cases to permit of comparison, and therefore we can determine, approximately at least, which method yields the most satisfactory results.

Practice and theory do not always wander hand in hand. This is true in eclampsia; otherwise the convulsions would cease when the uterus is evacuated. As it is, in almost 50 per cent. of the cases (according to one of Peterson's tables) the convulsions continue after delivery.

From the time it was recognized that eclampsia was a toxemia to the period when aseptic midwifery was established, the eliminative treatment was mainly relied upon. And even before that time, as well as thereafter, many teachers and writers advised us to "*Treat the convulsions and let the pregnancy alone.*" When chloroform, chloral, morphia, catharsis, hot baths and hot packs gave no relief, the case was usually terminated by an accouchement force, with a maternal mortality of from 30 to 35 per cent. Careful prophylaxis reduced the maternal mortality about 7.5 per cent. (to 28 per cent.).

Reuben Peterson's first table, showing the result of prompt delivery and the expectant plan of treatment of eclampsia, shows a mortality of nearly 16 per cent. after prompt delivery in 615 cases, and a mortality of almost 29 per cent. in 390 cases treated on the expectant plan. In his second table, showing the results of immediate delivery and of conservative treatment, we find, under immediate delivery of 150 cases, the mortality is only 4 per cent., while under the conservative treatment of 147 cases it is a fraction over 31 per cent.

Of the first table Peterson says: "They are the more valuable because they show the reduction of mortality in the same clinics through a change in the method of treatment." But he fails to inform us of the character of the "expectant form of treatment" prior to the "change." Of the second table Peterson remarks: "This table over-estimates the favorable results of immediate delivery in eclampsia." It seems to the writer that the same criticism pertains to the first table as well as to the striking figures of Fromme (Veit's clinic), where 100 cases were delivered immediately after entering the clinic; 58 were delivered prior to, and 42 after the onset of labor. "Vaginal Cesarean section was performed upon 55 of the 58 patients, with a mortality of 12 per cent." The manner of immediate delivery in the 42 cases is not

given, but only two of them died—4.9 per cent. The total mortality of these 100 cases of eclampsia is thus reduced to 9 per cent. These are astonishing figures.

We wonder what the mortality in the above series of cases would have been with intelligent medical care? Before accepting the figures of the first table as proof of the value of immediate delivery in eclampsia, we shall at least attempt to show that equally good results may be obtained with medical care alone. And it must be stated here that the figures as given in the above two tables and those given by Fromme are the only statistics in which immediate delivery in eclampsia makes any showing at all. A careful consideration of all remaining tables submitted by Peterson and other writers make a far less favorable impression regarding surgical intervention in puerperal eclampsia.

McPherson's assertion that "*No physician can save life, where the intoxication has extended to the kidney, liver and brain of the mother with such serious degenerative changes as often occur before the first convulsion,*" must also be challenged. The experience of many of my colleagues, as well as my own, does not support this extravagant statement. It is so glaringly out of harmony with the history of this disease that he who is familiar with its history and has had extensive experience with eclamptic cases will reject it as untenable.

The writer entertains the highest personal regard for Drs. Peterson and McPherson. He also has most profound admiration for those able teachers and effective writers, Halbertsma and Bumm, indeed, for all who may be quoted hereafter. But when these gentlemen, and their many followers, assert that *immediate* emptying of the pregnant uterus is the best and only rational treatment for puerperal convulsions, and that this treatment, more than any other, has reduced the mortality of this disease, the writer, because of his personal experience, is compelled to differ from them and will give evidence that he who advocates immediate delivery in every case of eclampsia errs.

Peterson, in his collected 530 cases of vaginal hysterotomy for eclampsia, "*performed immediately after the first seizure,*" found the maternal mortality as low as 18.51 per cent. In the 20 eclamptic cases reported by McPherson the maternal mortality was considerably higher, 25 per cent. Bumm predicted that under "*immediate delivery the maternal mortality of eclampsia could be reduced to 5 per cent.*" How must our distinguished confrère of Berlin feel when he reads Peterson's and McPherson's articles and finds that, under the treatment recommended by him, the average maternal mortality, instead of dropping to 5 per cent., is 21.75 per cent., or 1.75 per cent. higher than the present average maternal mortality without hysterotomy?

If we add to the above the 13 cases of Cesar-

ean section for eclampsia performed by A. B. Davis, in which nine mothers lived and four died (30.76 per cent.), the collective maternal mortality of eclampsia with vaginal and abdominal Cesarean section is at once increased to 29.3 per cent.

Dr. J. F. Moran reports four successful cases of Cesarean section for eclampsia. His first case had two convulsions. Cesarean section was performed immediately. The mother lived; child died six weeks after birth. His second, third and fourth operations were performed upon the same patient. Number of convulsions not stated. No other treatment was employed. The mother and all children lived. Moran's report clearly shows the tendency toward the surgical treatment of these cases and an utter disregard for medical care. Do these four cases prove that medical care is of no value? No! Moran's cases simply show that abdominal hysterotomy performed in clean cases is usually followed by good results. Nothing more! It does not mean that surgery cures convulsions. It does not mean that medical treatment is of no value. It does not even mean that these patients might not have recovered without any treatment.

Moran, to justify his four cases of Cesarean section, refers to Kellitz, of Halle, who collected 28 cases of Cesarean section for eclampsia with a maternal mortality of 50 per cent., and a fetal mortality of 62 per cent.; he also refers to the cases of Streckhausen and of Hillmann. The former collected 28 cases of Cesarean section with a maternal mortality of 48.8 per cent. and a fetal mortality of 31 per cent.; the latter reports seven cases, not included in the list of any of the above collected cases, with a mortality of 71 per cent.

Moran's own list of 53 collected cases of Cesarean section for eclampsia reveals a maternal mortality of 32.32 per cent. He then says: "Altogether, 116 cases have been recorded in literature, with a maternal mortality of 48.93 per cent., and of infants of 39 per cent.," or more than double the usual maternal death rate of eclampsia. Moran admits "this is not convincing argument," but finds consolation in "that the results during the last decade are very encouraging and that the death rate of the mothers has been reduced to 32.32 per cent., 19.9 per cent. for the infants." He looks upon this as a "steady improvement due to better technique, greater care in selection of cases and prompt intervention." If this is good argument the writer fails to see it.

The above is convincing evidence that the dictum "*Empty the uterus in all cases of puerperal eclampsia immediately after the first attack*" is wrong. And when have we observed that "*frequently*," after the first convulsion, we find the *kidneys, liver and brain of the mother seriously degenerated?* Is this not the exception rather than the rule?

Suppose, gentlemen, all obstetricians should decide to interfere surgically in every case of eclampsia immediately after the first seizure, ante-partum, before complete dilatation of the os, or even before it is sufficiently dilated for the application of forceps, or the introduction of the hand for the purpose of version; and if, after giving this treatment a fair trial, we would still record a maternal mortality of 20 to 29 per cent., would we not be compelled to confess that, in at least 70 to 80 per cent. of all cases, the operation was unnecessarily performed. If this conclusion is wrong, let it be disproved.

Except in the presence of deformity, disease, malpresentations, or certain monstrosities, surgery has contributed nothing to the reduction of the maternal mortality in eclampsia. That, under certain definite conditions, Cesarean section is the proper treatment for this disease is conceded.

The absolute disregard for medical treatment in these cases is as flagrant as is the advocacy of surgical intervention as the only measure of relief.

Two years ago I presented a brief analysis of 90 cases of the treatment of eclampsia to the American Association of Obstetricians and Gynecologists. The last series of 26 cases then reported as having received medical treatment almost exclusively, with a maternal mortality of only 15.38 per cent., and a fetal mortality of 53.88 per cent., has since been increased by four cases in which the treatment was limited absolutely to the hypodermic use of veratrum viride, hot baths, gentle catharsis and strict milk diet. In these four cases all mothers recovered and the children, born spontaneously, lived. This reduced the maternal mortality of my last 30 cases to 13.3 per cent. and the fetal mortality to 50 per cent.

Ballantyne reports 29 cases of puerperal eclampsia of which five died—17.2 per cent. The fetal mortality was not given. His cases extended over a period of five years. In former years he interfered with gestation. The results were disappointing. The majority of the patients died. He then disregarded the pregnancy and treated the convulsions. Of his last 17 cases, two mothers died—11.66 per cent. He states: "*I am left more disposed to medical treatment and less inclined to forced labor.*" Fern reports ten cases of puerperal convulsions treated with large doses of veratrum viridi with a maternal mortality of 10 per cent. Rushmore collected 88 cases of eclampsia treated with varying doses of veratrum viridi, chloroform and morphia, showing a maternal mortality of 20.45 per cent. Stroganoff reports a series of 400 cases of eclampsia treated, principally, with large doses of morphia, with a maternal mortality of only 6.6 per cent. Thus, the collective maternal

mortality of the medical care of eclampsia of these authors is only 12 per cent.

In Peterson's 530 collected cases of vaginal Cesarean section, the mortality is 18.51 per cent. In McPherson's 20 eclamptic cases the maternal mortality is 25 per cent. A. B. Davis reports 13 Cesarean sections with the loss of four mothers or 30.76 per cent. Halbertsma's first report of three Cesarean sections for eclampsia contains one death or a maternal mortality of 33.3 per cent. Kellitz has a table of 28 cases of Cesarean section for eclampsia, with a maternal mortality of 47.3 per cent. Streckeisen has a maternal mortality of 42.8 per cent, and Moran collected 35 cases of Cesarean section for eclampsia, not included in the above, which show a maternal mortality of 32.32 per cent.

Forcible dilatation of the uterus, whether metal, manual, or balloon, almost invariably, paves the way for fatal septic infection.

Much has been claimed for decapsulation of the kidneys in the treatment of eclampsia. W. Poten collected 102 cases. He excludes all those cases in which the operation was performed before labor or upon one kidney only. In the remaining 98 cases the maternal mortality was 36.76 per cent.

Thus we find that the maternal mortality of the surgical treatment of puerperal convulsions is

With decapsulation of the kidneys (Poten)	Mat. mort. 37.76%
With vag. and abd. Cesarean sect. (Peterson, Davis, McPherson Halbertsma, Kellitz, Streckeisen and Moran)	" " 33.88%
With strictly medical care (Ballan- tyne, Fern, Rushmore, Stroga- noff and Zinke)	" " 12.00%

These figures speak for themselves.

Too great reliance, therefore, must not be placed upon surgical operations in the treatment of this disease at any time. Many of the fatal cases, which were subjected to an operation, are not reported. But as it is, surgery in the treatment of eclampsia shows a maternal mortality of 31.88 per cent. Among Routh's seven cases of Cesarean section for eclampsia alone show a maternal mortality of 57 per cent.

Hence, no matter how safe vaginal and abdominal hysterotomy may be in the presence of sepsis and with a competent operator, two facts cannot be excluded: One, that from 75 per cent. to 80 per cent. of all eclamptic cases recover without operation; the other, that from none of the operations can the element of sepsis be wholly excluded.

Thus the dictum of Halbertsma, Bumm and others, that *the immediate emptying of the uterus in puerperal convulsions is the best and only treatment of eclampsia*, falls to the ground.

Judicious medical care remains our chief reliance.

In 1903 I began to use freely Norwood's tincture of *veratrum viridi* and since have gradually formulated the following definite plan of treatment for puerperal eclampsia.

If the patient has or has had convulsive seizures, 25 drops (15 m. or 1 c.c.) of Norwood's tincture of *veratrum viridi* are given hypodermically, and repeated every hour until the pulse is reduced to 60 per minute or less. If within an hour the pulse falls from 150 to 100 per minute only from 10 to 15 drops are injected in the succeeding dose. More than two or three injections are rarely necessary to bring the pulse down to 60. This is the most valuable remedy in the treatment of eclampsia.

A copious enema of soap water serves to wash out the large intestine. The catheter is employed to empty the bladder; the urine is measured and examined. As soon as the patient is able to swallow, a tablespoonful of Epsom salts, or some other saline cathartic, is administered per mouth. Stronger cathartics are given only when the saline proves ineffectual. (By this time, if the patient is not in a hospital, she should, if possible, be taken to one.)

Whether the patient is in a hospital or not, immediately after the above treatment has been administered she is given a hot bath or hot pack, preferably the former. Neither the bath nor pack exceeds an half hour in duration. The patient is then rubbed dry and placed in a warm, dry bed. The bath or pack is given not oftener than twice in one day. Ordinarily but one bath or pack is necessary in 24 hours.

The only food is milk or broth or both. Water or Fischer's solution may be freely administered. The latter may be given per rectum, or, if the case be an urgent one, intravenously.

Chloral, per orem or rectum, is given if the patient is very restless. Of late I have discarded the use of chloroform and morphia; ether or gas-ether is the anesthetic of choice if operative measures must be employed.

If the patient is at the end of the first stage of labor, and then only if the symptoms are grave, forceps may be employed to terminate labor. If the first stage is not complete, or if labor has not begun and the patient has improved under the treatment above mentioned, the case is then left to nature until the first stage of labor is completed, when forceps may be applied.

In cases of anemia, or asthenia from any cause, the normal saline solution, or Fischer's solution, is given, per rectum or intravenously. With very little variation this has been my plan of treatment for the last ten years, during which time 30 cases of eclampsia were observed. Four mothers died, 13.3 per cent. Fifteen of the children, 50 per cent., were lost.

It is not claimed that the above mode of procedure will be invariably successful, but my experience impels me to believe that in those cases in which it fails very little could have been expected from surgical intervention. Certainly in the presence of any condition (maternal or fetal) which makes the birth of the child *per viam naturalem* hazardous or impossible, abdominal or vaginal Cesarean section, or deep cervical incisions, each depending upon the period of gestation and other circumstances, are justifiable operations. But in view of the evidence presented, *it can but prove a serious error to maintain that an immediate interruption of gestation or termination of labor, by any surgical method in vogue, is the treatment par excellence in eclampsia.* The good results obtained from strictly medical care in these cases far exceed the results accruing from all the surgical means proposed for the relief from this disease.

The still high maternal mortality, 13.3 per cent., and the fetal mortality, 50 per cent., in my last 30 cases is due to the fact that two of the mothers were moribund when first seen by me; one remained in profound coma after the first, another after the eleventh convulsion. The third died of shock and hemorrhage following an accouchment forcé, performed by the doctor in charge of the case. The fourth died soon after the eleventh convulsion and a comparatively easy vaginal hysterotomy performed without an anesthetic.

My faith in the virtue of Norwood's tincture of *veratrum viridi* in the treatment of eclampsia is such that, were I deprived of every other means or methods to combat this disease, I would still have hope of saving my patient in most instances by the aid of this drug alone.

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Discussion.

DR. FRANKLIN S. NEWELL, of Boston, said: "I am very glad to have the opportunity of discussing Dr. Zinke's paper because I feel that the study and treatment of eclampsia is the most interesting part of obstetrics. The remarkable difference of opinion which exists among different observers as to the proper treatment of this condition shows more definitely than anything else how slight an understanding we have of its true nature. There is one point, however, on which everybody is agreed, and that is that it is directly dependent on pregnancy and, therefore, I believe that Dr. Zinke's dictum, 'treat the convulsions and leave the pregnancy alone,' is false doctrine, and will be productive of a great deal of harm if allowed to go unchallenged.

"I do not believe that all cases of eclampsia lend themselves to the same treatment, and I believe very strongly that the treatment of an acute attack must depend on the condition of the patient, the previous treatment which she has had, and the training of the physician in attendance; in other words, the patients must be treated intelligently and not by routine methods.

"I agree to a certain extent with what McPherson has said, 'that no physician can save life when the intoxication has extended to the kidneys, liver and brain of the mother,' but I should modify his view to this extent and express it rather in this way: When the actual tissue de-

struction, produced by the toxins, has reached a certain point in any of these organs, no physician can save life, since these organs are only capable of a limited degree of regeneration. Unfortunately, we can never tell in the given case when that point is reached, and therefore every patient must be treated according to our best judgment under the circumstances.

"Dr. Zinke advocates the treatment of symptoms, for the convulsions are nothing more than symptoms, and does nothing to do away with the cause of the process. This seems to me an irrational method of treatment, since it exposes the internal organs, the liver particularly, to the continued action of the destructive toxins and just so far increases the danger to the patient.

"On the other hand, hasty operation by incompetent operators, as has been advocated by Peterson, seems to me to carry with it equally great danger for the mother, though probably considerable improvement in the fetal mortality will be obtained.

"I agree with Dr. Zinke that prophylaxis is probably the most important factor in the successful treatment of eclampsia, as prophylaxis means a constant oversight of the patient throughout pregnancy, careful attention to the action of the excretory organs, constant watching of the urine, and in my opinion, what is even more important, frequent and repeated estimation of the blood pressure. My experience has shown that a rising blood pressure, even in the absence of any other symptoms, is a danger signal, and I consider any pressure of over 130 one which requires careful watching, and that a pressure of 150 or over denotes that the patient is in serious danger and active prophylactic measures need to be taken. These should include rest in bed, free purgation by salines and a milk diet. If, in spite of these precautions, the symptoms increase, particularly if the blood pressure should rise, venesection should be resorted to. The amount of blood which should be withdrawn depends somewhat on the given patient. In general, sufficient blood should be withdrawn to reduce the pressure to 120. This in many cases will require the withdrawal of 1,000 to 1,200 c.c. of blood. Following the bleeding the patient should be carefully watched, and if the symptoms increase or are not favorably affected by the venesection, the next step in treatment should be delivery. If the patient has had no convulsions, labor may be induced by the use of a bag, the patient being kept under careful supervision for any signs of approaching convulsions.

"The great danger to the patients who are running a high blood pressure is that the heart, already weakened by the effects of the toxins, will prove unable to carry the burden which the high pressure imposes on it, and I believe the majority of patients die from cardiac failure rather than from eclampsia. In a patient who has already begun to have convulsions and whose

condition warrants operation, I believe that delivery by the method which can be performed most rapidly and which will give the least shock is advisable, for I believe that we must cut short the absorption of the toxins and remove the strain of pregnancy from the heart before we can expect the process to become self-limited. Each convulsion undoubtedly increases the burden on the heart by raising the blood pressure and seriously endangers the patient's life.

"Another danger which threatens toxemic patients is premature separation of the placenta, and it must be borne in mind that in any case which is being palliated this accident may occur and the patient's condition be much worse than if immediate operation had been resorted to at first.

"The method of operation is important. In cases in which the cervix is rigid, protracted attempts at delivery may subject the patient to so much shock and trauma in her weakened condition as to prove fatal, and a more rapid method must be employed. I believe in these cases that vaginal Cesarean section offers the safest method of delivery.

"I do not agree with Peterson that the general practitioner without surgical training should undertake a vaginal Cesarean section, as in my experience it has often proved to be a difficult operation, and if performed by a man not accustomed to the operation, may of itself prove fatal.

"I believe that abdominal Cesarean section should be reserved for the cases in whom some pelvic indication is present or in whom so much edema of the vulva exists as to predispose to sloughing and infection if a vaginal operation is performed. The experience of surgeons who have seen suppression of urine with death develop in apparently normal cases after laparotomy leads me to believe that it is irrational to perform an abdominal operation on patients who are already suffering from suppression of urine and further the condition of partial paralysis which affects all the excretory organs of the toxemic patient and renders it unlikely that she should be able to take care of even a slight degree of peritoneal infection, which I believe to be almost inevitable when the abdomen is opened. My own belief, based on a considerable experience, is that if symptoms are increasing in spite of treatment, or if the patient when first seen has already had convulsions, provided her condition will at all warrant a surgical interference, that an immediate delivery is indicated, to be followed by venesection unless the blood pressure drops immediately on delivery to a comparatively normal level, and that free catharsis should then be induced by salines and high enemata, and that the use of morphia, pushed to the point of lowering the respiration to approximately twelve and holding it there for twenty-four hours or more, will give more satisfactory results than any other method of treatment. The blood pressure should be watched with the greatest care during the first

few days of the convalescence and any marked tendency upward should be combatted by repeated bleeding.

"I consider it absolutely irrational to attempt to treat as serious a condition as eclampsia without removing the cause, and I believe that more patients are lost because of delay in adequate treatment than will be by any other method, and I believe that Dr. Zinke's paper is one which may do a great deal of harm, because it will lead the general practitioner to believe that the toxemias of pregnancy can be neglected and that surgical means need only be employed to save a patient when her condition is believed to be hopeless.

"At present I think that the greatest element in the mortality of eclampsia is the fact that patients are not kept under careful observation during pregnancy and that the majority of patients which are brought to our hospitals and many of those who are seen in consultation are in too late stages of the disease. In the early stages I believe that in most cases the disease can be aborted, and in those that cannot be aborted, prompt treatment will save the lives of the great majority, and I do not believe that five per cent. is too low a mortality to hope for if prompt delivery is instituted in patients who are under observation when the symptoms fail to yield to prophylactic treatment. In order to obtain such results, however, we must educate both the general practitioner and the layman until they realize that constant observation of pregnant women is a necessity. It is undoubtedly true that in a certain number of patients who have had convulsions when first seen, that medical treatment will result in a satisfactory ending of the case, but many of the bad results which are laid to the door of the surgical treatment of eclampsia are, in my opinion, due directly to the fact that the waste of time attempting medical treatment of a serious condition has placed the patient in a condition where nothing can save her, and that the bad results of the surgical treatment of eclampsia are largely due to the waste of time in the hands of the attending physician who is trying to palliate a serious condition."

DR. EDWARD P. DAVIS, of Philadelphia, said:

"The greatest cause of mortality of operative eclampsia is the fact that we see our patients too late, and on this point we all agree. The situation is a complex one. We should study the natural history of the disease; others than the humans have it. The most unfavorable patients have serious conditions of the brain, liver and kidney. There is a degeneration of the heart muscle, and to keep the heart beating we should give oxygen to the lungs.

"In reference to the serum treatment of pregnant women, the obstetrician should acquaint himself with the treatment of the toxemia of the pregnant woman. Many die from convulsions."

EMPTYING THE UTERUS AS A METHOD OF TREATMENT OF PUERPERAL ECLAMPSIA.*

By REUBEN PETERSON, M.D.,
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EVERY discussion of the treatment of eclampsia must be prefaced by the admission that the real cause of the condition is unknown. Theories there are in plenty, for hardly a month elapses without the promulgation of some new explanation of the cause of eclampsia. We note the new theories or recognize an old theory rearranged to suit the fancy of the writer, forget them very quickly, and treat the next case of eclampsia according to our own conception of the cause of the complication.

Yet, after all, we are in more accord than at the first glance would appear to be the case. For at the present time it is pretty generally accepted that puerperal eclampsia is due to a toxemia, a poisoning of the system induced by the pregnant state. The pathologic changes in the liver, kidney and brain brought about by this poisoning are easily recognizable, although the exact nature of the poison or where it is elaborated is still unknown. Also we are pretty well agreed that in general the treatment of the eclamptic condition must be along the line of elimination, whereby the organism is enabled to rid itself of the poison. But having peacefully traveled together up to this point, when it comes to treatment we separate and rearrange ourselves into groups, each party feeling sure that it has the better of the argument as far as the results of its particular treatment is concerned. Considering that by our own confession, we do not know the real cause of eclampsia, and since from necessity our treatment must be empirical, we should not be too positive regarding the accuracy of our conclusions. A line of treatment giving good results today may woefully disappoint us tomorrow, especially if our conclusions be drawn from our own cases, which necessarily must be comparatively few in number, no matter how large the material to which we have access. It is indeed difficult to restrain one's enthusiasm over a certain kind of treatment, say in fifty cases of eclampsia, where the maternal mortality has been reduced to 5 or 10 per cent. Still we must learn to withhold our final judgment upon such treatment if we are to be guided by the experience of other series of eclamptic cases. For we have no means of estimating the severity of the eclampsia in the patients who survived such treatment. Certainly the number of the convulsions or their severity are no good criteria of the degree of intoxication from the eclamptic poison, since patients have lived after many

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

convulsions under all kinds of treatment and have died after one apparently mild convulsion. Examination of the urine or attempts to judge of the changes in the maternal metabolism only aid us in a general way in judging of approaching eclampsia or the severity of the seizures. It has always seemed to me that the true value of any line of treatment can only be determined by collecting, analyzing and studying a large number of cases of eclampsia subjected to different methods of treatment. Even then we must bear in mind that the mere survival or death of an eclamptic does not tell the whole story. Other factors besides the ones we are scrutinizing closely may have had much to do with the results one way or another.

While it may be true that one can prove almost anything by the statistical method, it is also true that statistics honestly and impartially scrutinized will reveal many truths, and after all, that is what we are after, the truth. Let it be said to the credit of physicians as a class that they are not wedded to any particular line of treatment for any disease whatever. Unlike the law, nothing that is old and tried is sacred, provided the doctor be convinced his patient is to be bettered by a new line of treatment.

Today we have under discussion two diametrically opposite kinds of treatment of antepartum eclampsia; one, of which my good friend, Dr. Zinke, is an exponent, consists of treating the convulsions and letting the pregnancy take care of itself; the other consists in emptying the uterus as soon as possible after the first convulsion and following this up by eliminative treatment.

Off hand, without considering the results of the two methods of treatment, the emptying of the uterus would appeal to the average obstetrician; perhaps not exactly the emptying of the uterus, but the desirability of having the uterus empty. For there is no gainsaying the fact that the presence of the fetus is the underlying cause of the eclamptic condition of the mother, whether eventually it be proved that eclampsia be of maternal or fetal origin. Postpartum eclampsia, to be sure, occurs with the uterus empty, but it is the result of an intoxication brought about by a pregnant uterus, not lessened sufficiently by the emptying of that uterus to prevent the eclamptic convulsive explosion during the puerperium.

Every advocate of the medicinal or so-called conservative treatment of eclampsia would be much better pleased, when confronted with a case of antepartum eclampsia, if the uterus were soon to be empty. Dr. Zinke practically makes this confession when he advocates the emptying of the uterus if medicinal treatment of eclampsia fails to bring about prompt amelioration of the patient's condition, and incidentally he shows very clearly why the operative treatment of

eclampsia up to this time has been handicapped. He says, give veratrum viride, give hot baths and apply the hot packs, and then, if the fight is going against you and the patient about to die, then and only then empty the uterus. He might have added, "then count up that case against the operative treatment of eclampsia, since the uterus was emptied, was it not, and the patient died."

Presently I shall show that with over a thousand cases, and not with dozens, the operative treatment of eclampsia, that is, the emptying of the uterus, in spite of this handicap of operating only as a last resort and by poor methods, gives a maternal mortality less than Dr. Zinke reports under the medicinal treatment in his twenty-six cases. But first I want to emphasize the fact that from a statistical standpoint the operative treatment of eclampsia never has had a fair show. Well do I remember the first case of eclampsia I ever saw. It was in the late eighties when I was a hospital interne. The patient, a primipara at term, was brought into the hospital in convulsions. My good old chief was sent for and at once decided that the uterus must be emptied. With the woman under an anesthetic where one was not needed, so deeply unconscious was she, he used first one hand and then the other in his efforts to dilate the cervix. When he could do no more, he asked me to spell his paralyzed hands; then he went at it again until the cervix was finally dilated and the woman delivered, I forget how, of a dead baby. The mother died within two days. Was that giving the operative treatment of eclampsia a fair chance? It would seem to me not, and yet statistics made up of just such cases show better results than where the women have been treated medicinally and have delivered themselves.

Two years ago I collected some statistics in connection with an article I prepared on Vaginal Cesarean Section in eclampsia. Table I, taken from that article, shows in a striking way the advantages of prompt delivery over the expectant method of treatment.

TABLE I.—SHOWING THE RESULTS OF PROMPT DELIVERY AND THE EXPECTANT PLAN OF TREATMENT OF ECLAMPSIA.

	Prompt delivery.		Expectant treatment.	
	Number of cases.	Mortality percent- age.	Number of cases.	Mortality percent- age.
Bumm-Liepmann ...	104	5= 4.8	90	28=31.1
Esch (1904-1906)...	101	20=19.8	79	20=25.3
Esch (1905-1906)...	36	8=22.2	145	42=28.9
Glockner	115	20=17.3	9	3=33.3
Möhlmann	104	16=15.3	10	1=10
Winter	75	17=22.6	8	3=40
Zweifel	80	12=15	49	16=32.6
Total	615	98=15.9	390	113=28.9

TABLE II.—SHOWING RESULTS OF IMMEDIATE DELIVERY AND CONSERVATIVE TREATMENT OF ECLAMPSIA.

	Immediate delivery.		Conservative treatment.	
	Number of cases.	Mortality percent- age.	Number of cases.	Mortality percent- age.
Liepmann	79	2= 2.5	90	27=30
Seitz	19	2=10.5	..	28.3
Winter	22	0=0	8	3=37.5
Zweifel	30	2= 6.6	49	16=32.6
Total	150	6=4	147	46=31.2

It will be seen that the maternal mortality with prompt delivery in eclampsia was 15.9 per cent., while in the same clinics under the expectant plan of treatment the mortality was 28.9 per cent. Zweifel had a mortality of 32.6 per cent. under the expectant plan of treatment, while the maternal mortality was reduced over half, or to 15 per cent., when the eclamptic patients were delivered immediately after they entered the clinic. The mortality, in turn, rose to 23.5 per cent. when prompt delivery was not employed as frequently.

Table II shows the results of immediate delivery in 150 cases of eclampsia to be only 4 per cent., while under conservative treatment in 147 cases by the same men the mortality was 31.2 per cent. I am aware that to be consistent I must remind you that the cases in this table are too few in number (150 and 147) to be taken too seriously. Another series might show entirely different percentages, although I believe the figures will always show a lower mortality under treatment by prompt delivery than where there has been delay.

In order to ascertain if these conclusions were correct, since the paper above mentioned I have collected many more cases of eclampsia with the idea that the question can be settled statistically only by the study of such large groups of cases.

Some very interesting facts are brought out in Tables III and IV, which I have condensed and arranged for your inspection. As will be seen, I have estimated the mortality after spontaneous and operative delivery in a large number of cases into two groups. The first, Table III, includes cases occurring before 1900, while the second, Table IV, includes cases between 1900 and 1912.

This group arrangement becomes necessary if we are to judge of the results of operative delivery in eclampsia through an estimate of the mortality. In a general way it serves to separate the cases where many deaths were caused by sepsis from the cases in the later period where presumably aseptic methods were employed and the deaths resulted from the eclampsia. This is not exactly true, for reasons which I shall explain later, but at least it is approximately correct.

TABLE III.—MATERNAL MORTALITY AFTER SPONTANEOUS AND OPERATIVE DELIVERY IN ECLAMPSIA.

	Prior to 1900					
	Spontaneous.			Operative.		
	No. of cases.	No. of deaths.	Percentage of mortality.	No. of cases.	No. of deaths.	Percentage of mortality.
Olshausen	111	24	21.6	77	16	20.8
Goedecke	97	27	27.83	192	31	16.1
Buettner (1881-1891)...	41	15	36.5	75	19	24.66
Buettner (1892-1899)...	162	31	19.13	162	34	20.97
Glockner	10	3	30.00	114	20	17.5
Bumm	61	18	29.5	27	8	29.6
Liepmann	180	41	22.77	..	..	..
Dührssen	38	8	21.00	80	19	23.75
Goldberg .....	..	..	16.28	38	13	34.21
Knapp	5	0	00.00	17	1	5.88
Schauta	73	16	21.90	153	73	47.71
Schreiber	59	12	20.33	78	15	19.23
Green	3	0	00.00	18	8	44.44
Paupertow	168	54	38.7	110	67	61.3
Baskin	43	5	11.63	84	18	21.43
Leske	7	1	14.28	29	5	17.24
Lantos	19	3	15.78	37	12	32.43
Ostrcil	22	2	9.09	51	15	29.41
Bayer	10	1	10.00	26	8	30.76
Meyer-Wirz	7	2	28.57	58	22	37.93
V. Braitenberg	10	0	00.00	17	2	11.76
Total	1126	263	23.35	1443	406	28.13

TABLE IV.—MATERNAL MORTALITY AFTER SPONTANEOUS AND OPERATIVE DELIVERY IN ECLAMPSIA.

	Between 1900 and 1912.					
	Spontaneous.			Operative.		
	No. of cases.	No. of deaths.	Percentage of mortality.	No. of cases.	No. of deaths.	Percentage of mortality.
Esch	77	16	20.8	267	45	16.8
Möhlmann	10	1	10.0	94	15	15.95
Daels	19	3	15.7	301	39	12.9
Seitz (München. Klin.) 1903-1907	1	1	100.0	21	4	19.4
Zinke	26	4	15.38	..	..	..
Lichtenstein (1900-1911)	87	20	22.96	309	49	15.85
Lichtenstein (1911-1912)	24	00	00.00	21	5	23.8
Freund (1904-1912) ..	44	11	25.00	355	56	16.8
Meyer-Wirz (1900-1904)	2	1	50.00	24	4	16.66
Liepmann .....	..	..	.....	104	5	4.8
Total	290	57	18.96	1496	222	14.83

We see from these tables that prior to 1900 in 1126 cases of eclampsia, the maternal mortality was 23.35 per cent. where the women delivered themselves, while in 1443 cases where operative delivery was employed the mortality was higher, that is, 28.13 per cent. While this is not particularly favorable for spontaneous delivery in eclampsia, it certainly shows itself superior to the treatment by operative delivery by 5 per cent. But wait before we jump at conclusions. If this were true before 1900 it ought to be true after 1900, unless, and here is the

point, the accoucheurs were becoming more aseptic operators or were operating more quickly after the onset of the convulsions. Now, the medicinal treatment with spontaneous labor has changed but little during the two periods, unless we count those who have become converted to the *veratrum viride* treatment. The change has come in the other side of the equation, on the operative side, with the result that the figures are reversed. For in 290 cases of eclampsia with spontaneous labor between 1900 and 1912, Table IV, the maternal mortality is 18.96 per cent., while in 1496 cases treated by operative delivery the maternal mortality is only 14.8 per cent., an advantage of 4 per cent. in favor of the treatment by operative delivery.

It may be asked, if the operative treatment for antepartum eclampsia is so favorable, why is it that the maternal mortality was so high (23 per cent.) in the 530 cases of eclampsia treated by vaginal Cesarean section. The answer is that operation was too long delayed in many of the cases. If we take the number of convulsions as a criterion as to the time the operation was performed, we see that the mortality was lowest where it followed upon very few convulsions. In 237 cases where there were only from one to five convulsions preceding the operation the maternal mortality was reduced from 23 to 18 per cent. Olin, who from the nature of his statistics was able to estimate accurately the time elapsing between the first convulsion and the operative delivery of the patient, found the mortality in 31 cases delivered one to three hours after the onset of the first convulsion to be only 3 per cent. On the other hand, the mortality in 50 cases delivered from six to twenty-four hours after the first convulsion was 28 per cent.

Those opposed to the treatment of antepartum eclampsia by operative means claim that the trauma incident to forcible delivery is enough to turn the scale against the eclamptic patient whose system is already overwhelmed by poison. There is some truth in this contention, provided the old order of obstetric surgery prevail. To spend two or more hours delivering the eclamptic patient under an anesthetic is bad practice and cannot help but injure to a certain extent the patient's chances of recovery. Still we have seen that with this against operative delivery as a treatment of the complication under discussion, the results were 4 per cent. better than where the patient was treated medicinally and spontaneous labor awaited. That is why vaginal Cesarean section has appealed to me as a method of emptying the uterus of the eclamptic patient. Except where there is a pelvic contraction or where for some reason the cervix cannot be pulled down, the operation can easily and quickly be performed with minimum shock and trauma to the patient. I am convinced that greater experience with this particular operation will show

better results in the future, provided, and this must be especially emphasized, provided the patients be operated upon early in the disease before the eclamptic poison has so effected the liver, kidney, and brain as to make all treatment, including the operative, of no avail.

I, for one, am perfectly willing to accept the challenge of Dr. Zinke to let the future decide between the two methods of treatment. As much as I admire Dr. Zinke as an obstetrician and a teacher, I am convinced that he is wrong on this question. As I look at it, his dictum, "treat the convulsions and let the pregnancy take care of itself," is far from being good teaching, since, because of just such teaching, the patient is temporized with, subjected to hot baths, hot packs, and drugs, while the underlying cause of the eclamptic condition, the pregnancy, continues. I believe, also, that his statement that surgery has contributed very little to the reduction of the maternal mortality of eclampsia is also far from being correct. I have endeavored to show why obstetric surgery has not accomplished more in the treatment of this dread complication. Give it a fair chance, and results will show how much it will accomplish. Don't delay operation in eclampsia until you have a patient overwhelmed with the poison any more than you would counsel delay in appendicitis until the patient has suppurative peritonitis. In judging the value of operative procedure in such cases, one feels perfectly justified in not counting them, or considering them in the same category with neglected strangulated hernia cases. We think such results due to neglect and delay or poor judgment. In the same way, the time will come when failure to see that the uterus is emptied quickly after the onset of the first convulsion will be considered an error of judgment.

Now, I do not propose to take issue with those advocating the use of *veratrum viride* in eclampsia. It may, and probably does, serve a useful purpose in a certain class of cases. That it needs to be administered with care has been demonstrated by Bailey, who finds that considerable shock attends its use. I simply class this remedy with others recommended for antepartum eclampsia and refrain from its use so long as the patient is undelivered. Elimination by the skin, bowels and kidneys should be sought for after and not before delivery, else valuable time will be lost, because all such treatment is carried on at a disadvantage before the uterus is emptied. After the latter has been accomplished use every means at your command for elimination of the eclamptic poison.

Lack of time prevents me from discussing the conservative and radical treatment of antepartum eclampsia from the standpoint of the fetus. Each year the latter's rights are receiving more and more attention, and this is as it should be. Before the age of viability of the child, the

safety of the mother demands rapid delivery, irrespective of the fetus. When the child is viable, only those methods of treatment of the eclampsia should be chosen which will best guard the interests of each. As I have endeavored to show in another paper, this is not accomplished, as far as the child is concerned, by delaying delivery until the fetus as well as the mother is poisoned.

While my tables show that the fetal mortality is 6 per cent. better for the fetus with spontaneous labor in eclampsia, they also show that under improved obstetric surgery from 1900 to 1912 the fetal mortality with operative delivery has been reduced from 41.17 per cent. to 28.6 per cent. I am confident that with a more careful choice of operative procedures and with more prompt deliveries the fetal mortality will be still further reduced. I am supported in this belief by the results of vaginal Cesarean section in eclampsia. With 315 children, the fetal mortality was only 21.2 per cent. This was still further reduced if we take those cases where only three convulsions occurred before the birth of the children. Here the fetal mortality was only 11.8 per cent.

CONCLUSIONS.

1. Since the cause of eclampsia is still unknown, its treatment must of necessity be empirical.

2. Only through the analysis of large numbers of cases can the value of any particular treatment be correctly estimated.

3. In a large series of cases of eclampsia prompt delivery gave a maternal mortality of 15.9 per cent., as compared with a maternal mortality of 28.9 per cent. where the delivery was long delayed.

4. Where the uterus is emptied immediately or very soon after the onset of the first convulsion, the maternal mortality is still lower.

5. While in a large group of cases the maternal mortality is 5 per cent. in favor of conservative treatment and spontaneous labor in cases occurring before 1900, between 1900 and 1912, on account of better and more prompt obstetric surgery, the figures are reversed and show that the maternal mortality is lower by 4 per cent. after the radical as opposed to the conservative treatment of the complication.

6. Therefore, the treatment of antepartum eclampsia should consist of emptying the uterus as quickly as possible after the onset of the first convulsion.

7. The operative procedure which will empty the uterus the quickest with minimum trauma and shock to the eclamptic mother and child should be selected.

THE VALUE OF DISCIPLINE IN THE CARE OF THE SICK CHILD.*

By T. WOOD CLARKE, A.B., M.D.,

UTICA, N. Y.

THE subject which I have selected for this meeting, the value of discipline in the care of the sick child, is, to my mind, a matter of no small importance to the physician; of an importance, unfortunately, not sufficiently recognized, for upon the control of naughtiness not infrequently depends the success or failure of our efforts towards diagnosis and cure of the sick child.

We are all familiar with the hopeless feeling, when, on entering the nursery, we are greeted by a howl of fury and a series of acrobatic and pugilistic activities. We all know that if such a state of affairs continues we are tempted to make a rash guess at the nature of the disease and prescribe the medicine which will allow us most quickly to get outside the front door and rest our aching ears. On the other hand, it is with a feeling of pleasure that we look back at the visit during which the young patient has greeted us with a smile, be it ever so wan, has submitted willingly to being undressed and examined, has opened his mouth to let us look at his tongue, and has perhaps only winked hard when that trying weapon, the spoon handle, has produced an acute anxiety as to the safety of all he holds most dear. After examining such a child, we may be in doubt as to the nature of the illness, but we at least feel that we have done our duty and have given the child a fair chance. It is a very easy matter to overlook a soft heart murmur or some early sign of pneumonia or tuberculosis in an examination accompanied by a combination of outlandish shrieks as overpowering as a symphony by Richard Strauss.

The need of a certain amount of discipline in bringing up a child, and the adopting of definite rules which must not be broken, are too well accepted facts to require discussion. There is little difference of opinion as to the healthy child's need of restraint and of proper directing of his energies. When the child is ill, however, the attitude towards him usually changes, and he obtains far more freedom of action. One of the surest ways of spoiling a child, however, which, though I believe it is less frequently met with today than one or two decades ago, is still far too prevalent, is the mistaken notion that because he is sick and nervous and is inclined to have tantrums, he must not be crossed. I know of no single influence more sure of spoiling a child, ruining its happiness, interfering with the systematic development of his mind and producing a neurotic, disagreeable adult than the dictum: "Your child is very nervous. If he is made angry he will have a convulsion; he must not be crossed."

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

When a child is sick, especially if it is in pain and the prospect is that the illness will last through weeks or months, the first thought of the fond parents is to make the little one as happy as possible during the days of suffering, and as it would seem that the way to accomplish this were to gratify its wishes, they vie with each other to supply every expressed desire and to satisfy every whim. The result is disastrous, for the young autocrat, naturally the greatest egotist in the world, learning that whatever he wants he will be given, immediately becomes dissatisfied with what he has, and turns his active mind to the discovery of new wants to be gratified. The next step is to learn that if there is any delay in fulfilling his mandates, a good lusty yell is an effective stimulant to worn-out parents, and finally, in the words of the popular song, "he wants what he wants when he wants it," and if he does not get it not only does he make life unbearable for those about him, but he develops a degree of self-pity which makes him truly miserable. Often in the course of a few days' illness a naturally sweet-tempered child will change into the typical spoiled, discontented, snarling, yelling, kicking brat which is the *bête noire* of every physician, the child of which the parents say "they cannot do a thing with it." As such children convalesce the chief change is too often that the gain in strength adds ingenuity by means of which he can make himself the more obnoxious, and, blamed and punished for being so disagreeable, the resulting scoldings simply add to his self-pity, sense of injustice and unreasonableness. Such blame to the child is usually utterly unjust, for in nine cases out of ten the characteristics with which we with good reason find fault are the direct outcome of errors in training on the part of the parent, and are too often due to sins of commission or omission on the part of the family doctor. If every child during health were impressed with the fixed idea that the parents' word was law, that the parents were always honest and just, and would listen to the childish wishes and then once and finally state whether they could be gratified, and would never go back on their word, much of the naughtiness during illness would be prevented.

If at the beginning of an illness, especially if it promises to be protracted, there could be explained to the parents the necessity of strict, almost military, discipline and obedience, and if the parents could be persuaded to carry out this idea, the life of the family would be easier, the work of the doctor would be lighter, and, most important of all, the days of suffering of the little patient would be happier.

Some years ago I had occasion to observe a striking comparison between two cases in which the right and the wrong way of treating invalid children were exemplified. Two laddies, friends and neighbors, of the same age were at about

the same time afflicted with chronic tuberculous arthritis, one of the spine, the other of the hip. Both were confined to bed for months at a time, and both suffered severe paroxysms of pain. In one case the physician impressed upon the mother the necessity of absolute strictness in her dealings with her boy. She was told that she must be more strict than ever before, and she was. The child soon learned that what he was told he must do, he must, and that what he was told he could not have, no amount of teasing would procure. He was allowed to cry from pain, but even this was discouraged, while crying for anger was promptly suppressed. The boy through years of illness was a ray of sunshine in the house. He accepted his hardship, was happy and contented himself, and a joy to the family.

The other child at the onset of the illness had fits of temper and the physician told the parents that his wishes must not be crossed. The results were appalling, and the poor little sufferer to the physical distress had added discontent, unhappiness and an uncontrollable temper which made him a pitiable object himself and kept a large household in a constant turmoil.

Those of us who have spent much time in children's hospitals or on the children's wards of general hospitals are familiar with the remarkable change which often takes place in a child's disposition during the first few days of ward life. We can look back at the snarling, resisting little fury who, on admission, refused to be undressed and screamed and fought at every attempt to handle it; we remember vividly the utter astonishment and rage in the face when the child was first confronted with the idea that he must do what he was told, not as he wished; and we recall with pleasure, as he gradually learned that the way to get affection and petting was to earn it by being good, the steady disappearance of the frowns and scowls, and the ever increasing frequency of the smiles and laughs, and finally the incredibly short time required for the discontented little pessimist to merge into the crowd of laughing, happy youngsters who make the chronic wards of the children's hospitals perhaps the sunniest, happiest spots in the world.

The reason for this change is not hard to find. In the few days in the ward the child, naturally pliant and adaptable, has learned the meaning of authority and has gracefully submitted to it. He has discovered that naughtiness has availed him nothing. He has adopted a new scheme of existence, and has found it productive of a generous supply of happiness.

The production of such changes of character in the wards of hospitals are daily incidents, and are taken for granted. In the private house, however, to keep an ill child happy or to make an unhappy one cheerful is by no means an easy matter. In the hospital, except during the visiting hours, we have but the one small rebel to

train, while in the house we have the father, the mother, usually at least one grandmother, and if our luck is very bad there may be a group of maiden aunts. In such cases the entire family must be taken into our confidence, and their confidence in us must be established. When this has been done, and not until then, the training may be extended to the child himself. He must be taught by one means or another that the word of the parents, the doctor and the nurse is even as the laws of the Medes and the Persians, that teasing and yelling are useless wastes of time, and that a burst of temper will avail nothing beyond some experience highly incompatible with bodily comfort.

I hope none of my hearers have gathered that I approve of being rough or cruel to a child. Such behavior on the part of a physician destroys its own ends. In a rather wide experience in the training of the spoiled child, in which I cannot recall an instance in which, having been given a free hand, I have failed to produce in the course of a few days a docile, obedient child, I do not think that in more than one or two cases have I caused the little one actual pain, even of the mild type produced by a spanking. The restraining hand, while of a confidence-breeding firmness, must be absolutely gentle. Far more effectual than physical pain is the appreciation that you are stronger than he, that you have an indomitable will, that what you say must be done you will see carried out, if it takes hours to accomplish, and that you never recede from an established position. The lesson may require ten minutes, it may take two hours, or it may be a matter of several seances lasting two or three days. The chief point is that you must never give up until you have established your supremacy. There is no greater economy of time when dealing with chronic illness in a spoiled child than to devote even several hours to teaching the little patient that your will is unfaltering and that you are and always will be the master.

That lack of discipline may be directly responsible for actual illness was well demonstrated in a case I saw some months ago, when asked by a physician of Utica to take charge of a small and very puzzling patient who he feared was coming down with tuberculous meningitis. For six weeks this two year old had been causing an incredible amount of trouble and anxiety. The history was of a progressive weakness, apparently partial paralysis of the legs, and violent attacks of almost maniacal excitement, especially between ten and eleven o'clock at night, when he would climb out of bed, run about the house, scream and raise trouble generally. As he had been a well behaved baby earlier, the suspicion of approaching meningitis seemed justified, except for the protracted period of the prodromals. On examination, I found no signs of meningeal disease and few evidences of illness of any kind except anemia, and a slight intestinal irregular-

ity. The examination was conducted under difficulties, as the young man absolutely refused to be handled. The most important factors, to my mind, were that the patient was a first child, was the center of a world consisting of parents, a grandmother, and at least four maiden aunts, all living under one roof, and had a decidedly calculating and appraising look in his eye. After explaining to the mother that I could see no signs of meningitis, I told her that except for the intestinal indigestion I could find nothing definitely wrong, but that before a diagnosis was possible the child must be taught to behave, as I could not tell how much was mental disease and how much spunk. With the mother's consent, after getting rid of the grandmother and the aunts, I proceeded to take steps to let the young man know who was the master. I started to examine him, but at every yell I stopped and firmly placed my hand over his nose and mouth, smothering the cry, the hand being loosened during inspiration, but firmly replaced during expiration at the first evidence of a cry. With the other hand I gently but firmly prevented kicking. For a few minutes the fight was fast and furious, but as I had considerable advantage in weight and from my position on top, in ten minutes the child gave me one long comprehending look, relaxed, and submitted peaceably to whatever I wanted to do. A second insurrection a few minutes later was subdued in less than a minute. Instructing the mother to repeat the treatment whenever required, and insisting on bed and sleep at the proper times, I left, and two days later was pleased to learn that the boy, to use the mother's own words, "had been as good as gold." The intestinal irregularity was soon corrected, the attacks of mania were promptly aborted by an exhibition of the palm of the hand steadily approaching the mouth, and a little simple treatment and a lot of fresh air brought back the power to the legs, and as disagreeable, snarling and troublesome a child as I ever saw became in a few weeks a healthy, happy youngster. Incidentally, he seems not unfond of his doctor, and on several occasions since has allowed me to waken him from a sound sleep, put him on the kitchen table, undress him completely and give him a thorough overhauling without so much as whimpering.

I have given the account of this case in some detail, as it was one of the most extreme cases of illness produced by naughtiness due to pampering that I have ever seen, as the conditions of the family, and the fact that I was a total stranger, made it seem a particularly unfavorable case for disciplinary measures, as what appeared to be symptoms of grave cerebral disease disappeared as soon as the child was firmly impressed with his true relation to the rest of the universe. I want to emphasize the fact, however, that before beginning to train the patient I was thoroughly convinced that there were no signs of meningitis, a possibility always to be

borne in mind when a naturally good child suddenly becomes naughty.

Not only is discipline of value to the well child in preventing illness and in its immediate cure, but it is a factor of paramount importance in determining the character and health of the future man or woman. There is no more fruitful seed of adult neurasthenia, hysteria and uncontrollable temper than that which is implanted in the child's mind by lack of discipline during the illnesses of childhood. One is often tempted when dealing with a sick, spoiled child, especially if the illness is a matter of a few days only, to save present trouble by pampering it. This may save worry for the time being, but is probably starting the child on the downward path to a neurotic temperament, which will continue more precipitately after the illness is passed and the restraining influence of the physician is lost.

As to how to enforce discipline with the young child, there are many opinions. Occasionally bodily chastisement, calmly ignoring fits of temper, or the deprivation of pet privileges are effective. The method with which I have had the most success is the one referred to earlier, that of suppression of the scream with the palm of the hand. In any trial of strength the adult has all the advantage on his side until the child begins to scream. In the ultimate analysis, the child's one thoroughly effective weapon is his voice. It is the one great resource when he wishes to accomplish his ends, and if used with enough of a will it usually obtains its way. Take a child's scream away from him and he is powerless to resist. It is for this reason that the suppression of the scream with the hand is so effectual. By holding the legs between the knees, placing one hand firmly but not too tightly about his body and arms, and the other over his nose and mouth, his struggles are rendered useless. If the mouth is held loosely during inspiration and just tightly enough during expiration to allow the air simply to splutter through between the fingers, the child's satisfaction in the scream is lost, and the only result of his efforts is a sensation which, though in no way painful, is far from pleasurable. The child is convinced that he has met his master, a master of his body, of his voice, and if sufficient patience is exerted, of his obstinacy as well. If persisted in, this method is practically sure of success, provided that it is continued until the child is thoroughly convinced that there is no limit to your patience. After two or three such seances, it is usually necessary only to raise the hand towards the child's mouth to cause an immediate cessation of the scream.

The objection that the method is cruel or dangerous is unfounded. There is no pain associated with its application, except the soul elevating one of anger suppressed, and as it only interferes with the expiratory sound and not with expiration itself, it is without danger. I

should not apply it or any other treatment liable to excite and anger the patient in cases of heart disease or pneumonia. Given a normal heart and lungs, however, no injury can be caused to any organ, unless it be that which is the seat of the infant spunk.

Do not imagine that I am advising, immediately on entering a household where there is a spoiled child, to resort to suppressing the crying without careful consideration of all the surrounding conditions. Judgment is required in all things, and in nothing more than in dealing with the spoiled child of doting parents. A self-willed child, when being restrained in any way, becomes so angry that the parents usually think he is being murdered. Before any method of disciplining a child, and especially such a drastic one as that outlined above appears to the onlooker, is adopted, it is imperative that you first win the confidence of the mother and convince her thoroughly that what you propose to do can neither hurt nor injure the child.

However, whatever method of disciplining be indulged in, and to whatever extent circumstances make it possible in the individual families to carry out any measures, remember always these three facts: a healthy child needs discipline, an ill child needs it more, and a nervous, spoiled one needs it most of all. By being strict with a child you increase his chance of recovery from an acute illness, you make the household more habitable, you make the child himself happier, you make his school life more profitable, and, most important of all, you destroy the cocoons which, if allowed to develop, will in later years hatch out into the devastating blights of neurasthenia, hysteria, and even insanity. Above all things, let us do away once for all with that pernicious admonition to the parents: "Your child is nervous; he must not be crossed."

Discussion.

MR. HERBERT S. WEET, of Rochester, N. Y., stated that it would be presumptuous in him to attempt before this body any technical discussion of this paper. The value of discipline in the care of the sick child involved for its discussion an experience and a training which he did not possess. Dr. Clarke on the other hand, had spoken out of a long experience and his words must have brought to every practicing physician within the range of his voice the memory of similar experiences. On the other hand, there were certain principles suggested by Dr. Clarke's paper that were both valuable and interesting.

Dr. Clarke made a plea for self-control, and established this plea upon the only tenable basis, namely, the welfare of the child. The convenience or inconvenience of the physician was of incidental concern. He had made it clear that a lack of control that may reasonably be expected of the growing child endangers the physical welfare of the child.

There would be no difference of opinion here on the proposition that among all the elements which enter into efficient training no element surpasses in importance this same self-control. If the development of this power is of concern to the physician in safeguarding the physical welfare of the child it is of equal concern to the teacher and to the parent in safeguarding both the mental and the moral welfare of the child. More and more, modern elementary education is coming to recognize the fact that training in self-control and in other similar virtues and characteristics is the real objective in education. Mr. Weet was interested in reading the newspaper account of the very worthy protest entered by one of the Society's own members yesterday against instruction as opposed to training in this process of education. It is a protest which has been increasingly made by students of education for the past dozen years. It is becoming more and more effective. It will not be wholly effective, however, so long as communities insist upon judging the efficiency of a school solely by the ability of its pupils to pass examinations. The present knowledge of pupils is of value. It is only one of the elements, however, that enter into the real education of the child.

The development of this spirit of self-control in the growing child represents a type problem which modern elementary education is facing. Mr. Weet desired, therefore, in the brief time allotted to him to outline some phases of the problem.

The young child is prompted in its actions very largely by its instincts. In fact, it may truly be said that its early activities are mere expressions of instinctive tendencies. It is upon the expression of these instinctive tendencies that its very growth and development depend. Among the four most important of such instinctive tendencies are play, curiosity, imitation, and what has been called the repetitive instinct. By the exercise of these the child gradually adapts itself to the environment in which it is placed. Through play, which is as natural as eating to the normal child, the child gains muscular control and that co-ordination of mind and body which is so essential to its future welfare. Through the exercise of curiosity and imitation the child gains a knowledge of his environment and an actual performance of the activities of those around him which enable him to make the experiences of his environment the experiences of his very self. In this way he is building up his own little world out of all the materials that are brought to bear upon him. Through this instinctive tendency to repeat processes he is gradually reducing to the automatic those representative acts of life. In this way his conscious powers are left free for life's larger problems which include reason, discrimination, judgment and other similar powers. Only as all these and other instinctive tendencies

are allowed to express themselves can the child grow and develop. Inhibit them, suppress them, and the very development of the child is sacrificed. On the other hand, there are among these instinctive tendencies those which make neither for the future welfare of the child nor the future welfare of the society in which he may be placed. Such expressions must be suppressed and not allowed to grow through exercise. Here, then, comes the first real problem which the intelligent teacher and parent must face. It concerns the ability to discriminate, through an actual knowledge of the child, between those tendencies which should be strengthened and encouraged because of their wholesome nature; and those tendencies which if allowed to grow and develop, would be unfortunate both for the child and society. Here, again, the only approach is the welfare of the child. This is by no means an easy approach to make. There is no doubt that Thomas Edison through his inventive genius, which must have revealed itself through a strong instinctive tendency in his early years, was a source of serious inconvenience to his teachers and his parents. Had the expression of that instinctive tendency during the years when it was clamoring for expression been effectively suppressed and held in check, however, we would never have known the Edison of today. Not the convenience of the parent or the teacher but the welfare of the child is the only approach to discipline.

It is apparent, then, that true discipline at its core involves the suppression or repression of the child when it is exercising those tendencies and those characteristics which are bound to operate against its own best welfare and the welfare of the society in which it may be placed. There is no more difficult nor fundamental problem which our elementary education of today is facing than the problem outlined in this brief statement. Dr. Clark has pointed out that a discipline which fails to suppress those unfortunate elements that appear in the growth of a child is not only an inconvenience to the physician but a grave menace to the very physical well-being of the child. While the relation between these elements and the mental and moral development of the child is more subtle than is the relation between them and the physical, it is none the less real. When, therefore, Dr. Clark is making a plea for the development of self-control in the growing child, he is making a plea for that which enhances not only the physical life of the child but the mental and moral as well. It is through the processes of instruction that the real goal of education must be reached. That real goal, however, is the training of the child in self-control and a host of other similar virtues and characteristics. More and more we must lift into the consciousness of our teachers the importance of this goal and the opportunity which every act of the schoolroom offers for that training which constitutes the very essence

of education. The members of this body can share in this work in each community. You can also share with real enthusiasm, for there can be no education for manhood or womanhood that does not rest upon such training.

NERVES AND THE NURSING MOTHER.*

By CONWAY A. FROST, M.D.,
UTICA, N. Y.

SOMEONE has wisely said that "He who pays attention to trifles for trifle's sake is a trifle, but he who pays attention to trifles for the sake of obtaining knowledge of important things is a philosopher." The subject of my paper deals not only with a trifle, but with a subject already dealt with. Though I may be "fetching coals to Newcastle," it seems to me that this trifle is often overlooked, with far-reaching consequences. The influence of the nervous system on the milk of nursing mothers has a farther reach than is at first realized. The fact that mother's milk is the only perfect food for the infant is often forgotten, though convincing data is at hand in proof of the assertion. Dr. Herman Schwartz, in 1911, gave a most exhaustive report of statistics derived from the observation of 1,500 nursing children, in which he refers to a report of Langsteine, of Berlin, on infant mortality in 1906, showing conclusively, did we not already know by personal experience, the vital importance of maternal nursing. I will only quote the figures for January, in which month Langsteine found the highest percentage of deaths among infants nursing from their mothers. With a total of 662 deaths, those fed on mother's milk number 85, on animal 317, on other foods 97, food not given 161.

So much stress has been laid on the proper formula and the best artificial food that without so intending, we have lost sight of the best food and have utterly ignored the infinite number of changes that may be wrought in the mother's milk. Were the same time and energy expended upon finding what element was the cause of the mother's upset, and what may be done to remedy it, that is put upon the cow's milk adaptation, something of importance might be forthcoming. The average physician, upon being called upon to attend some infant with digestive trouble, if he does not immediately straighten things out, turns to his favorite textbook and skips the part that is devoted to rectifying any existing trouble with mother's milk, and reads up so and so's formula, and the long struggle begins.

Even in as short a paper as this it is hard to hold the attention of those present from escaping to the cow and the favorite modification of cow's milk. It seems to me that we are missing an opportunity that might be used to bring to

light something that would be of help in keeping the infant at the mother's breast. For some unknown reason, if the mother's milk has disagreed with the child, we not only inquire *first* what the mother has eaten to upset the infant, but we fail to look further if this line of inquiry brings nothing to light. I thoroughly believe that we are many times "barking up the wrong tree," and the trouble is more often due to a break in the mother's nervous equilibrium than to some pernicious food taken. The mother nursing her child is generally fairly careful of her diet regulation, but she will allow herself to be exposed to all sorts of major and minor shocks to her nervous system with perfect impunity.

Have any of you ever watched a shepherd with the young lambs? In a recent novel I read of the care taken by the shepherd that the ewes be protected from any excitement. The old shepherd who had occasion to visit the lambing pen at night carefully covered the light with his plaid so as not to startle the mothers. For, he said, were he to startle them ever so slightly, the milk was sure to disturb the young lambs. How often is the farmer's boy told to be careful in driving home the cows, not to irritate them for fear of spoiling the milk. Yet how little care is taken of the nursing mother in this respect. No particular caution is taken that the mother be not startled or irritated. The physician on his arrival asks whether any irritating food has been taken the day before, but he forgets to ask if the cook was irritating or if the older children were allowed to worry their mother, or if the husband brought home his worries or appeared on the scene in a manner calculated to disturb the nervous equilibrium of the mother. I thoroughly believe that a life devoid of minor nervous shocks is of far greater importance for the well-being of both mother and child than a diet devoid of minor indiscretions. Just how these nerve strains interfere with the proper secretion of proper food we do not know. Metabolism, we know, is often inhibited, the whole digestive process upset and the sweat glands inhibited or stimulated by emotion, and yet we utterly ignore the emotional effect on the sensitive milk glands of the breast.

Some study and reports have been made as to the result of nerve strain in general and nerve strain in particular, especially the upset of equilibrium and its results at menstruation, as productive of indigestion in the infant. Just what occurs I do not believe we know. It has been my experience that proteids have been increased during such nerve upsets, and so, not because I consider this the only change, but the most palpable one, at my present state of knowledge, it has been my custom, when this could be proven, to increase the number of bottle feedings temporarily (if the child has been fed on mixed feedings) and also try to obtain higher fat and lower proteids in milk from the mother.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

This, of course, deals with only one phase of the trouble. The difficulty may, and probably does, originate from an increase of fat at times, for some authorities, Bendix among them, as quoted by Koplik, say they find greater variation in the fats. If these changes are found, after a nervous upset, in these elements, why not in others, the salts, for instance, the numerous enzymes and alexins which are derivatives of the cells, the specific properties that are known to exist, but of which little is known.

Let us use what little knowledge we have at our command if it clears up some of the cloud-land. Let us use our knowledge more frequently to avoid the cow in these temporary upsets and obtain further light, that this and all other makeshifts may be postponed until the time in the baby's life when the cow is no longer a bugbear but a blessing. Human milk is such a complex fluid and so little is known of its changes in character during such nervous upsets that this paper is written rather as an appeal for light than as a report of an investigation.

I wish to emphasize the fact that in my experience I have observed that this upset occurs after irritation of the nervous system much more frequently than after errors in diet, and urge those whose facilities are greater to look into the cause, that a remedy other than discontinuance of breast nursing may be found. Do not misunderstand me in my attempt to emphasize the effects of nervous shocks on the milk of the mother. I do not wish to say that diet has no effect, but that it is of less importance than ease of mind. We were given a digestive apparatus that is capable of taking care of the ordinary, and at times the extraordinary, diet, but no digestive apparatus can stand the strain of worry, which, I believe, has been known to kill cats.

Discussion.

DR. CORNELIA WHITE THOMAS, of Rochester, N. Y., said that the problem of the nursing mother with nerves is not essentially different from the problem of any mother with nerves. It is the same old problem of the patient with an unbalanced, unstable nervous system, a mental irritability with a cause. The problem is to find the cause. The condition began before lactation, and will not disappear when that function ceases, and the baby is influenced by its mother's nervous state as much before birth as after. Among the causes are anemia, pelvic lacerations, pelvic infections, sub-involution of the uterus, cholecystitis, nephrocoloptosis. We can do something for all of these if given the opportunity.

There are other causes not so easily helped. Care, anxiety, the everlasting question of how to make the income meet the demands upon it; to keep the older children in condition for school; to pay for the graphophone to make a happy home. Shall we talk mental hygiene to

her? Take the woman with her tenth baby; with a drunken husband; with the two previous babies needing her constant care; with all the work of the house and responsibility for the family resting on her shoulders; what shall we do when she slaps the children for putting ashes in the tubful of clothes, or kicks the kitten when it cries because they tried to put it through the wringer? She is beyond me. I leave her to the social worker.

DR. IRA S. WILE, of New York City, said: "In connection with this topic I desire to call attention to the importance of attempting to recall the milk to breasts that have not been properly used and from which in consequence the milk has disappeared. In milk station work I have seen many children of poor weight and dangerous condition restored to normal simply by restoring milk to the breasts of the mother. The milk is best called forth by the act of suckling. Milk has been recalled to the breasts even after an interval of three months of disuse. The milk stations must be careful in giving artificial feedings to children whose mothers' breasts are still capable of being utilized in a normal manner."

DR. FLORENCE I. STAUNTON, of Utica, N. Y., said: "Dr. Frost has chosen a very interesting subject for his paper. Between two schools, the obstetrician and the pediatrician, there is often an interval in a child's life when he is very much on the ground.

"I am afraid I can add nothing in explanation of the nervous influences of which he speaks. They certainly play a large part in lactation, but they are little understood. We hear of instances of poisoning in a child after a brain-storm in the nursing mother, but, on the other hand, we all have had typically neurasthenic patients whose milk was abundant and of an exceptional quality, while their neighbors of even, phlegmatic temperament could not nurse their children.

"I would like, however, to suggest three ways in which we can help to improve human milk supply:

"*First.*—By the early education and building up of all expectant mothers. The mind should be prepared for the right fulfilling of milk production, and the general condition of the pregnant woman should be given more attention. To this end would not a change in the system of fees help greatly? A definite sum charged for the delivery and all care before and after delivery would put the patient much more in our hands. Of course, intercurrent sickness would not be included. This idea is not original.

"*Second.*—Infinite patience and persistence should be shown in restoring a lost milk supply. We give up too easily and allow the mother to see we are discouraged. I had one patient who was so nervous that after nursing her child for a few days she fancied one breast was smaller

than the other. She became very much agitated over this and the breast did become absolutely empty and relaxed, the other remaining normal and perhaps a little over-full. I expressed a confidence that I was very far from feeling that it was a matter of small moment, and I had the child put to the empty breast for a few minutes at every other feeding, and then transferred to the other side. After a few days a little milk on the empty side was secreted and in about two weeks there was no difference in the breasts. The persistent stimulus of milking the breasts regularly even for some weeks I am sure would save us many months of bottles.

Third.—With the poorer classes, where the milk is abundant, but poor in quality, as can be seen instantly by a glance at the child, we should, if possible, show the mothers that lactation should not be prolonged over more than 10 or 12 months. The habit of nursing a child two years, or even eighteen months, while at the same time giving it 'table food,' gives the mammary glands no rest and exhausts the mother, making her unfit to care for subsequent children. This education, I realize, will be difficult, for each woman believes she will be less likely to conceive if she has a child at the breast."

DR. T. WOOD CLARKE, of Utica, N. Y., stated that though there are many differences of opinion as to infant feeding, all agree that breast nursing should be encouraged in every case. Nervousness should be prevented before the appearance of the milk by assuring the mother that she will be able to nurse the child. The chief cause of loss of milk is the worry over the fear that she will not have enough milk for her baby. In a recent case, the mother of a pair of four-pound twins had had great cause of worry and anxiety during her pregnancy. At the time of the birth of the twins the mother was assured that she would have plenty of milk. The fact that there were two babies instead of one was not allowed to discourage her, and both were put to the breast. For seven months neither child received a drop of food or water except mother's milk. At nine months of age each weighs eighteen pounds and neither has had a day's illness. The mother gained fifteen pounds during the period of lactation and has been entirely well. The objection that eight hours a day were being wasted by the mother in nursing the children was overcome by constructing a platform like a large serving board. This was put over the arms of a chair and the infants were put on this under the mother's arms, feet to the rear. One head was held in each hand and thus both infants were nursed at the same time, saving the mother three to four hours a day for housework.

DR. ELIZA M. MOSHER, of Brooklyn, said: *"Nervous Sham.*—Its effect on the mother of imperfectly developed nipples. Great suffering during early lactation, reacts on mother's ner-

vous system in a way to produce cessation of secretion of milk. To prevent this condition we need to begin the care of the nipples in girlhood. It is possible in examining the chest to observe the condition of development of the nipples. It is not commonly known that the nipples of girls and young women are often deformed by the pressure of a corset steel, which produces friction with every movement of the body. The physician should see that such friction does not occur. Congenitally inverted nipples are much more common than is commonly known. The earlier such nipples are placed under training, the more hopeful will be their ultimate development. Tact may be necessary and the care of a trained nurse or a medical woman should be secured. Such care is of the greatest importance to the nursing child later in life.

CARE OF THE NEWBORN.*

By CARL G. LEO-WOLF, M.D.,
NIAGARA FALLS, N. Y.

THOUGH I have nothing new to present in this paper, judging, however, from the cases I see almost daily, and further, from the careful perusal of recent American pediatric literature, it seems to me that there are a number of points in the management of the care of the newborn which will bear repetition and which have to be still further emphasized before they become the property of our profession.

The first point I desire to bring out is concerning the feeding of the newborn. This is unfortunately still in the hands of the obstetricians and the general practitioners, with the result that the pediatricist is called in sooner or later, usually later and many a time too late, to repair the damage done by injudicious over-feeding, both at the breast and with the bottle.

How long are men and authors of the reputation of Holt, Fischer, Kerley, Rachford and others going to teach their students and general practitioners that babies should be nursed every two hours from the very first up to the second month, later every two and one-half hours, and, what I consider still worse, advise this in their books destined for the guidance of young mothers, as do Holt and Kilmer? I used to advise this myself, and my little patients had to suffer for it. Since I have reformed and use a little more common sense in the care of the newborn entrusted to me, I have had a larger percentage of mothers who are able to nurse their babies, and the little ones are better behaved, show a better gain and are more resistant to infections and to climatic changes. The first ones to observe the improvement and to appreciate the marked lessening required in the care

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., May 1, 1913.

of the newborn were the nurses, who almost daily expressed to me their appreciation.

Immediately after birth, both the mother and the newborn are exhausted, the one by his passive and the other by her active labors, and what they require is a good long twenty-four hours' rest. The baby does not need any food at this time, nor could it get any at the breast, beyond a very few drops of colostrum, which will give him the gripes at that; he comes into the world well nourished and he has enough to do to adapt himself to his new surroundings, to the change in his circulation and the unaccustomed act of respiration, without our subjecting him to further loss of energy from repeated and purposeless nursing, which tires him and the poor mother, and besides, gets him so disgusted with his fruitless efforts that he will soon show more sense than the physician and refuse the breast altogether, and this, let me tell you, was a frequent cause why we have had so much trouble in making the babies take the breast or why we were unable in many a case to make them nurse at all, even after the milk supply got to be plentiful.

On the second day, after both mother and infant have had a good rest, we let the baby take the breast once or, at most, twice, so that he can get some colostrum, which by this time will be present in larger quantities in the breasts, so as to clean out his bowels of meconium. If he cries much we give him water, as much as he wants.

On the third day we have him nurse three times, four on the fourth day, and from the fifth day on we feed him every four hours in daytime, but never at night, thus giving him five feedings daily, usually at 6 and 10 A. M., and at 2, 6, and 10 P. M. If he sleeps I never allow him to be awakened, but you will be surprised to see how soon the little ones get accustomed to this regime and how well they know when it is time for nursing.

Try this regime once yourselves; observe the rested condition of the mothers after they have had a full night's rest every night from the time the baby is born; note how they have a plentiful supply of good milk without resorting to any specially disagreeable and nauseating diet consisting of over-large amounts of liquids which are supposed to produce milk, whilst as a matter of fact, they do not, but rather prevent it (and let me here add that I allow my puerperæ to eat anything they want after they have had their first refreshing sleep and that I do no longer place any restrictions upon their diet, as long as they are getting sufficient nourishment and keep in good health); observe also the good condition of the babies, how quietly they sleep and the look of contentment upon their faces; try it only once and I am sure you will become as enthusiastic adherents of this method as I am myself.

In the cases in which we do not succeed in

getting a sufficient milk supply and in which we have to resort finally to unnatural feeding, though the number of these cases should never exceed 10 per cent. in the practice of any man, I also have adopted the four-hour regime with the best of results.

It is not my purpose to-day to speak about what to give the newborn in the bottle, but if you will only take the trouble to find out what awful mixtures our friends the obstetricians and the general practitioners are in the habit of prescribing, then you will agree with me that in hospital cases the infants should be placed under the pediatric service right from birth, as soon as regular and efficient breathing is established, and that in private practice it would be better to call in a pediatrician in the beginning to put the infants on the right track from the very first rather than wait until their health is impaired from improper feeding and improper food, and to have to repair the damage done as best we can.

By placing the newborn under the pediatric service from the very first we will have another advantage which to me seems to be of the greatest importance, namely, that we have the nurses of the pediatric service take care of the infants. The lochia of the mothers always contain pathogenic bacteria in large numbers which may easily be transferred by the nurse's hands to the navel or the skin of the newborn, there to cause infections which we cannot explain in any other way. Or, as I have seen it done, to my great surprise and chagrin, the bathtub, which is for the use of the infants only, may at times serve as a receptacle for soiled linen from the mother's bed.

In private practice, whenever the people can afford this, I insist on having two nurses, one who takes care of the mother only, the other to be in charge of the infant. Where this is impossible, I insist on the nurse giving the baby its bath with disinfected hands in the morning before she changes the puerpera, and on her using rubber gloves for this latter duty. Quite naturally I insist that the baby's bathtub is used for nothing else, and in the hospital we should do away with the common bathtub altogether and have individual basins for each little patient.

Another point in the care of the newborn in which some of the authors mentioned before are still adhering to old and deleterious teaching, especially Holt and Kilmer in their books intended for the use of mothers and nurses, is the routine wiping of the mouths. This is without any doubt a frequent cause of injuries to the tender mucosa, with consequent ulcerations and tumefaction of the submaxillary glands. Since I have given up this unnecessary torture of the little ones, which would correspond to the toilet of our own mouths with a stiff wire brush, I have seen hardly any cases of stomatitis or thrush or Bednar's aphthen.

I desire to add a few words about the books that are intended for the use of the young mother, such as those written by Holt, Kilmer

and others. These little books are of a decided value and are a great help to us in our work, but why they should contain any formulæ, no matter how good, for the so-called artificial feeding of infants (and I must confess that most of these formulæ seem to me harmful in the light of our recent knowledge on this subject), is beyond my understanding. I need not tell you here about the difficulties of getting the right food for each individual newborn, and to leave this to mothers or nurses and to make these believe that it is easy and that all you have to have are a few utensils and a few printed formulæ for the different ages is, I am sure, very bad advice.

One more point. By what right do registrars of vital statistics furnish the manufacturers of patent and proprietary foods with the names and addresses of the young mothers? So that they can send their booklets with the pictures of the "beautiful," fat, flabby, pale, rickety babies who have survived feeding with their respective products, in which they tell that their foods are just like mother's milk and just as good and much less trouble to give. How much longer are we going to sit idly by and permit this indirect slaughter of the innocents?

In closing, I would like to ask you if the members of this pediatric section could not get together and compile a booklet on the care of infants which can with safety be put into the hands of young mothers and nurses, which would be based on our latest knowledge on this subject and which should not contain any formulæ or any other obsolete advice?

Discussion.

DR. DEWITT H. SHERMAN, of Buffalo, in discussion, advised early administration of a weak solution of bicarbonate of soda to obviate the "gripes" mentioned by Dr. Leo-Wolf; *first*, because it is one of the best mucous solvents and hence cleanses mouth and stomach and allows easier gastric secretion; *second*, as an alkaline diuretic it relieves renal colic due to early passage of uric acid crystals and their salts, and thereby, *third*, prevents the abuse of the child by locating the colic in the proper place rather than considering it as intestinal and resting satisfied with the castor oil treatment often given in heroic and painful doses.

He advised putting the babe to the breast every six to eight hours during the first twenty-four hours, a little oftener during the rest of the time until the milk supply commences. After that the interval should be regulated by the amount the child gets and its comfort. The interval should be increased in direct proportion to the amount taken, and scales are absolutely essential to guide as to this interval.

He did not agree that a regular four-hour interval should be attempted in all cases. It might be striven for, but the amount gotten and the babe's happiness should be the deciding factors. He did agree that the longer the interval the

better, other things being equal, that both the mother and breasts may have proper rest. He advised, after cleansing the stomach with soda water, early feeding at long intervals of a low fat, low casein and fair milk sugar percentage to avoid the early undue loss in weight occurring before the milk secretion is established. He also advised an early accessory feeding once a day, first, to give the mother more liberty, and second, to learn the child's digestive ability, and hence be forearmed for accidents to the maternal supply.

Dr. Sherman advised great emphasis being laid upon the *aseptic* handling of the newborn. To spare it infections, a soft, sterile cloth should be placed inside the blanket it is to be wrapped in. To remove the vermix caseosa the oil or vaseline should be sterile. To bathe the baby, the water should be at least as sterile as that coming from a heater and cooled to the proper temperature. That the hands of the attendant should be sterile for the customary so-called massage. That the hands of the accoucheur after handling the perineum should never approach the child's mouth, and should touch the skin as little as possible. That the cleansing, gentle cleansing, of the mouth should be attended to by the nurse only, with soft, sterile gauze wrapped on a sterile finger. He advised the same regularity of taking the baby's rectal temperature as is common with the mother's, feeling that the child's temperature is an important indicator of its condition.

DR. T. WOOD CLARKE, of Utica, N. Y., desired to ask Dr. Leo-Wolf whether in his four-hour breast feeding he nursed from one or both breasts. He would not expect that an eight-hour stimulation would produce enough milk. He considered the chief objection to not putting the newborn babe to the breast was that the child lost the peristaltic stimulation of the colostrum. This naturally would lead to the need for castor oil, the most common of all causes of constipation in infancy. It often took weeks or months to overcome the damage produced by this initial dose of castor oil given by the nurse on the fourth day of life.

DR. THOMAS S. SOUTHWORTH, of New York City, stated that while agreeing that infants are often nursed too frequently on the first day, we have long believed that an occasional application of the infant to the breast had a physiological purpose in its stimulation of uterine contraction. We owe something to the mother. The four-hour interval should not be used indiscriminately. It is admirable where the breast milk is abundant, but is irrational where frequent stimulation is required to increase a relatively inadequate flow.

He would state the proposition that a newborn infant should not be weaned without a consultation. The weaning of a young infant is a very serious matter, affecting its future development and possibly its expectation of life.

THE USE AND ABUSE OF SUGAR.*

By E. H. BARTLEY, M.D.,
BROOKLYN, N. Y.

THE sugars are among the most valuable articles of human diet. They yield their heat and energy in the body with the expenditure of the least effort on the part of the organs of digestion and assimilation. This is especially true of the hexoses, as met with in glucose and invert sugar. But this very characteristic may make them harmful when used in large quantities. It is the abuse of the sugars and not their proper use to which I wish again to call attention in this paper.

About twenty years ago the author called attention to the abuse of sugar in a paper read before the Medical Society of the County of Kings (*Brooklyn Med. Jour.*, 1889, p. 14). I was then convinced by clinical evidence of the harmful and far-reaching effects of the excessive use of sugar upon the digestive organs, the mucous membranes, and upon the general health of growing children.

The many years of observation since that time have only served to confirm the ideas then expressed. I am disappointed, however, that I have not been able more satisfactorily to explain the clinical results of the excessive use of sugars, as observed in a considerable number of children. It should be stated at the outset that I do not pretend to say that all children are similarly affected by even what we may believe to be an excessive amount of sugar. I am convinced, however, that a large number of children are seriously injured by it, and it is of these cases that I am speaking. The injurious effects to which I refer are irritation of the gastric mucosa, gastric catarrh, interference with the digestion and absorption of fats and proteins, the production of excessive fermentations with the formation of irritating organic acids, attacks of so-called "bilious" vomiting, acid intoxication, anemia and general malnutrition. In the article to which I refer I attributed these results chiefly to the fermentative changes, especially of the hexoses as invert sugar, and of glucose taken as such.

I now believe that sugars, when taken into the empty stomach, act as direct local irritants of themselves and that they rapidly generate irritating organic acids. The obtunding of the appetite, the production of acids and gastric catarrh are the most common immediate results. Sugar incapacity soon develops in certain older children, as well as in infants, and as truly as fat incapacity develops from excessive fat feeding.

We can often feed an infant a food of high fat content if we keep the sugar down, or we

can feed a high sugar content with a low fat content, but when a baby is taking a fairly full amount of fat and doing well, we can cause fatty acid curds to appear in the stools by increasing the sugar. The sugar in some way interferes with the absorption of the fatty acids. Finkelstein believes this to be a metabolic disturbance, rather than a local disturbance in the gastro-intestinal canal, which, it seems to me, is not proven. The fever, irritability, sugar in the urine and leucocytoses can be explained without any such assumption. The symptoms, pain after feeding, etc., come on before the sugar has had time for absorption, in most cases, and are most likely due to direct irritation and exaggerated peristalsis.

But it is the effects in older children to which I wish to call attention. Here we have undoubtedly to deal with mixed sugars and mixed symptoms. Sugar injury to the gastric and intestinal membrane is certain, which results in catarrhal changes, but only after repeated applications of sugar, and most readily produced by sugars taken into an empty stomach. Invert sugar and glucose are more injurious than cane, malt or milk sugar. Of this I have satisfied myself by repeated clinical trials. Cane sugar is partially inverted, or converted into glucose and levulose, by heating it with organic acids. Therefore, in apple sauce, fruit jellies, jams, preserves, rhubarb, etc., the sugar is partially inverted.

Determinations have shown that from one-tenth to one-third of the sugar in these articles is in the form of a reducible and fermentable sugar. Modern confectionery contains from 10 to 25 per cent. of glucose or corn sugar, made from starch by boiling with sulphuric acid. In lemonade and the various fruit syrups, the sugar is inverted to a variable degree. I have examined some cakes and have found the sugar but slightly inverted in them. Sugar is not absorbed from the stomach, except when in a concentrated form. Glucose is absorbed when the concentration reaches 5 per cent. Probably in an ordinary mixed meal little, if any, is absorbed, but when candy is eaten between meals there may be some absorption of glucose from the stomach. Cane sugar is inverted and made ready for absorption slightly in the stomach, but completely in the small intestine. The symptoms of distress from sugar eating may begin within a half-hour after eating it. These early symptoms are malaise, drowsiness and epigastric heaviness. These cannot be assigned to metabolic disturbance, but seem to me to be due to the local effect of the sugar, either by direct irritation of the membrane, by its retarding effect on peptic digestion, or by the rapid formation of acids. It seems unlikely that lactic or butyric acids could be formed so soon in sufficient quantity to cause much local irritation. However, when the contents of such a stomach

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

are emptied within an hour after taking a large amount of sugars, we find the contents very acid and irritating to the mucous membranes. Vomiting as a symptom, except in infants, is apt to occur from one to three hours after the meal. A mother consulted me with her daughter, who, by the mother's statement, "had vomited two hours after every meal for a year." Inquiry brought out the fact that the girl had been living almost entirely on cake, because her appetite did not crave anything else. The vomiting promptly ceased on withdrawing the cake. After three weeks it promptly returned after eating cake again. Sometimes the vomiting is delayed twelve or twenty-four hours, when the vomitus is apt to be green in color. In the latter cases fermentation certainly plays an important part. The irritation of the organic acids, or some other attending irritant, plays an important rôle in producing the vomiting. In some cases I believe the fermentation is not the cause of the vomiting. It must be admitted, however, that in a catarrhal stomach sugar is converted into acids with astonishing rapidity. It has been shown that the catarrhal mucous of the bladder can convert urea into ammonium carbonate more rapidly than when the ferment of ordinary stale urine is used. Sugar placed in a catarrhal stomach will generate sufficient organic acids in two to three hours to irritate the membrane sufficiently to produce vomiting.

How else can we explain the production of catarrh of the stomach due to repeated and frequent addition of cane sugar, or more especially invert sugar or glucose?

How shall we explain the languor and drowsiness which are felt within a half-hour after taking a considerable amount of sweets? I know adults who feel this drowsiness within this short time, and invariably a headache in three hours, after eating freely of bread and butter with fruit jelly, fruit jams or apple sauce. An equal amount of cane sugar will produce no such result. Glucose syrup will produce the same or similar disturbance. Can these effects be due entirely to the invert sugar and organic acids present? It is easier to ask these questions than to answer them.

I believe that cane sugar, as well as invert sugar and glucose, when taken into the empty stomach in considerable doses acts upon the membrane as an irritant. Some years ago it was my privilege to observe autopsies upon two children who had died from the effects of excessive eating of candy. At the autopsy both showed acute inflammation of the gastric mucosa, which was, in one case, intense. The candy in this case was that known as white molasses taffy. The child ate about six ounces rapidly. The candy was not all dissolved, but a considerable part of it was found at the autopsy mixed with abundant mucous in the stomach. Some of it was

ejected during the vomiting which preceded death and which began within a couple of hours after eating it. It was decided by the coroner's physician that the cause of death was acute inflammation of the stomach due to the candy. A chemical analysis failed to reveal any foreign substance in the candy. There could be no doubt that the candy acted as an irritant; whether as a mechanical or chemical irritant may possibly be in doubt. In the second case a longer time elapsed after eating the candy before the symptoms appeared. At the autopsy not only the stomach but the duodenum was found acutely inflamed. The candy was practically all dissolved or disintegrated. It was mixed candy and a chemical analysis did not reveal any poisonous adulterant. The quantity eaten was excessive. The evidence of the candy being the only cause of death in this case was less conclusive than in the first case. It seems certain, however, that it was the cause of the gastro-duodenitis. I think we have all seen cases of acute gastritis set up by an over-indulgence in candy. We can only conclude that sugar is an irritant, when taken in large quantities. Sailer and Farr, quoted by Euler in his book on *The Enzymes*, state that maltose retards peptic digestion. Cane sugar in large quantities is said to inhibit the secretion of HC.

In the natural state the most of our carbohydrates are eaten in the form of the polysaccharid, starch. A small part only is in the form of disaccharids—cane and milk sugars—except in infant's food. In certain acid fruits some is in the form of invert sugar. Man has greatly increased the proportion of glucose and cane sugar in the modern diet. Statistics show that the per capita consumption of sugar in the United States is about 80 pounds per year (3.6 ounces per day).

Starch is partly changed to dextrine and maltose in the stomach, but the most of it is still left in the unfermentable form until acted upon by the amylase of the pancreatic juice in the intestine, and then it is gradually changed into glucose by the maltase well down in the intestine. This very gradual production and absorption of the hexoses derived from starch, or from cane sugar, is very different from the ingestion of invert sugar, or glucose of candy, when these hexoses are poured upon the intestinal mucous membrane suddenly and in quantity. It is akin to the difference between the action of a dose of morphine by the mouth and the same dose hypodermically. When glucose is eaten, owing to its ready solubility, it passes rapidly into the intestine, whence it is absorbed into the capillary blood vessels, which pour it into the portal vein. There is thus sent to the liver a sudden abnormal flood of glucose. One cannot be surprised if, under these circumstances, some of it slips through the liver unchanged to glycogen and appears in the urine. It seems to me that this

abnormal absorption of a large amount of glucose, rather than a more gradual absorption, must disturb the usual metabolism of this food element, as a remote effect of the ingestion of glucose in large quantities. Another point in our argument is the fact that infants are provided by nature with a peculiar non-fermentable sugar, lactose. This sugar is gradually changed in the intestine into glucose and galactose. A half of it is then ready for absorption and immediate use. The other half is to be further changed after absorption to glucose, which delays its availability. So far as we know, galactose must be changed to glucose before it can be utilized for the production of glycogen. Cane sugar by inversion is converted into glucose and levulose, both of which are absorbable and can be used directly for the formation of glycogen. Maltose, on the other hand, is formed so gradually from starch that no further delay is necessary to prevent sudden absorption of abnormal quantities. It is, therefore, converted by inversion into glucose alone, ready for absorption and utilization. It is for this reason that maltose entails less labor on the part of the digestive and absorptive processes than the other disaccharids, and this explains, in part at least, why we often find that enfeebled digestive organs can utilize maltose more easily than milk or cane sugar. To be successful, however, it should be retarded by a mixture of dextrin and maltose. When we come to the discussion of the remote effects of excessive sugar we must enter largely into the domain of speculation.

We do undoubtedly observe nervous disorders. These may be attributed to the chronic gastrointestinal fermentations, acid intoxication, anemia and malnutrition. Another almost constant remote effect is catarrh of the mucous membranes, affecting the nose, throat, stomach, bladder and vagina. In a considerable number of cases of sugar injury which I have been able to follow up to womanhood, I have observed very generally disturbed menstruation, acid vaginal secretion and leucorrhœa. Naso-pharyngeal catarrh is almost always complained of, and those who are best able to speak upon this subject recognize the causal relation of gastric catarrh to nasal catarrh. There, then, are six ways in which excessive sugar ingestion can be harmful: 1st, by direct local irritation of the gastric mucous membrane; 2nd, by the production of excess of acids; 3rd, by interfering with the digestion and absorption of fats, because of the excess of acids in the bowel, and consequent malnutrition and anemia; 4th, the disturbance of carbohydrate metabolism; 5th, the production of a condition of a form of acid intoxication, differing, however, from the better known acidosis of diabetes, cyclic vomiting, etc.; 6th, by the remote effects on the nervous system and on the mucous membranes. If the results of the ex-

cessive indulgence in sweets are as injurious to a considerable number of children as I have claimed in this brief outline of my observations, we should call the attention of the public to it in such a way as to check it.

Discussion.

DR. GEORGE N. JACK, of Buffalo, N. Y., said: "The feeding of infants is a very important subject. In infants of an asthmatic tendency who have an unstable and hyper-susceptible blood sensitized to numerous foods, the importance of this subject is very manifest. I have often seen asthmatics of the lymphocytic variety that were on a diet have a severe attack of asthma after partaking largely of candy or pastry, although the blood was normal for them before the imprudence in diet. Soon this blood would show a high lymphocytosis. The leucocytes showing an amyloid reaction, the red cells clumping, the blood showing a high viscosity, a rapid coagulation, and in a short time the victim would begin to wheeze, *i. e.*, reached the dyspneic crisis. The blood, as a result of the error in diet, had disintegrated and after it had disintegrated it had to dump or rid itself of the waste products. This the blood did by dumping along the line of least resistance, which in the asthmatic is the mucous membrane of the air tubes. The blood dumping process begun in the ventricular pouches of the larynx, thus producing an obstruction to respiration in the larynx which resulted in a laryngeal wheeze that could be heard ten feet away, showing that the obstruction was in the larynx. As the blood dumping process continued, the glands of the trachea and bronchi became enlarged and there was a general obstruction. I could not practice medicine without prescribing diets along these principles."

DR. G. H. VAN GAASBEEK, of Kingston, N. Y., narrated a case where the mother's milk showed about nine per cent. sugar fats, and proteids each about two per cent. The baby thrived very well. This mother also furnished milk about 16 ounces a day to another baby, which also thrived well. Later a third baby was fed on this milk with satisfactory results.

DR. PHILIP S. POTTER, of Syracuse, N. Y., said: "A few years ago I was much amused to read in a popular weekly an article by a well known physician author in which he advised letting children have all the candy they wished, on the plea that it was the cry of nature. If I have not misinterpreted the article, I think such a statement is pernicious and may do a great deal of harm. We who see a great many children are struck by the damage that too much sugar can do. I do not refer so much to those whose symptoms point to the stomach, but rather to those children with recurrent ailments, such

as rheumatism, urticaria, eczema, and catarrhal affections of the upper respiratory tract.

"The thing that has impressed me in a great many of these sugar susceptibles is the resemblance of their symptoms to tuberculosis. These children seem to have all the symptoms but not the physical signs, nor do they react to the von Pirquet. In fact, the mother is worried at the loss of flesh and strength, the constant hacking cough, slight fever and anorexia. In one child, two years of age, sent me from the country, the family physician made a tentative diagnosis of pulmonary tuberculosis but could find no physical signs. The mother was very much worried because there was a history of tuberculosis in the family, though remote. The symptoms of this child were those of pulmonary tuberculosis, but there were no physical signs. von Pirquet was negative; hæmoglobin was 65 per cent. Her sugar was cut down to the minimum and the mother reported a month later that she had an entirely different child. She had gained in weight two pounds and her hæmoglobin was 90 per cent.

"Again, in our open air school in Syracuse there is a boy of a well-to-do family who has plenty of spending money. He was admitted to the school because of his extreme nervousness. So far he has not made the gain he should. While his nervousness has bettered, his weight and hæmoglobin have advanced very slowly. His mother called me on the telephone the other night and asked if I could be a little more careful as to his diet and not try to stuff him. She said that he had come home several times lately complaining of headache and was listless. He was out of school two days with a bilious attack. On investigation it was found that he ate very little of the school dinner, and then had to be urged to eat. What he had been doing was buying a good deal of candy, both going and coming from school.

"Because a great majority of children can take sugar and get away with it, it does not follow that all can do so. Some can take four to eight ounces a day without inconvenience, while in others only a few grains will produce marked disturbance."

DR. CHARLES HERRMAN, of New York City, stated that we were indebted to Dr. Bartley for calling attention to this important subject, especially important in this country where so much sugar is consumed. Dr. Herrman wished to emphasize the fact that some children were especially susceptible to the ingestion of sugar. These children frequently had recurring attacks of catarrh of the mucous membranes. They were children affected with the so-called "exudative diathesis."

FORESTS AND THEIR RELATIONSHIP TO EUGENICS.*

By GEORGE N. JACK, M.D.,

BUFFALO, N. Y.

THE relationship between forests and humanity bears such an immediate and important ratio that the evolution, health, well-being and happiness of a nation, country or community depend largely upon the same. The proper forest acreage of a country tends to guard against sickness, decline, degeneracy, congestion or over-population, misery, suffering, famine, poverty, the pollution of drinking water, the poisoning or destruction of the health-giving properties or gases of the atmosphere, extreme unseasonable climatic conditions, inefficient or excessive rainfall, floods, the noise nuisance, the dust nuisance and the destruction of the beauty, scenery, peace and tranquility of the land. In other words, the proper forest acreage of a country tends to guard its people from a rapid degeneracy or decline through a destruction of the life and health-giving forces, minerals, chemicals and gases of a country.

Forests, in order to benefit, secure, improve or maintain the health, peace, quiet, well-being and sustenance, as pure water and air for the inhabitants of a country, must be scattered or systematically placed at short distances apart throughout said country.

It is as useless to ask an individual to maintain a forest at his own expense to benefit the people of a country as it would be to ask an individual to put sewers in a city at his own expense to benefit its citizens.

Forests that are necessary for the well-being of the inhabitants of a country must be owned, maintained, guarded and controlled by the government of that country. Forests, in order to benefit all of the citizens of a country, should be systemically located at certain distances apart throughout the country so that their beneficial influences would be extended to all and in easy access to all.

A single large forest reserve would benefit but a few people, while the same acreage of forest systematically placed throughout the country, would benefit all the people of that country. A single large forest reserve would contribute but little to all of that which makes life worth living, while the same acreage of forest reserve systematically placed throughout a country would contribute largely to the same, as pure drinking water, pure air, more even climatic conditions, more seasonable weather, an equalization of humidity, as rainfall, snowfall, dews, etc., and the regulation of the winds and cyclones.

These forests would also assist in lessening the noise nuisance, the dust nuisance, the destruction of property and life by floods, and the destruc-

* Read before the Medical Society of the County of Erie, June 16, 1913.

tion of both animal and vegetable life by the injurious manufacturing gases. They would also assist in the restoration of the birds of song and plumage that benefit mankind by destroying various insects and would also aid in the prevention of diseases that are largely due to over-population and congestion, as tuberculosis, the plague, smallpox, Asiatic cholera, typhoid fever, etc.

In order that forests might benefit mankind by assisting in bringing about these happy results, every township of thirty-six square miles should reserve two square miles for forests.

The systematic placing of the forest reserves throughout the country in this manner would bring all the inhabitants under their beneficial influences and would also render them, with their grandeur, quiet, song, flower and perfume readily accessible to each and every citizen.

Owing to the dollar mania, the scarcity and high price of lumber, the last tree now standing in our remaining forests that are almost entirely owned by a few corporations and speculators, will soon be cut, even if by this act the country would be reduced to a worthless desert. It therefore behooves the country to immediately begin the restoration of the forests in a scientific and practical manner, and at the same time to construct around them a safeguard that will protect them from the money maniacs.

That we are now in urgent need for the rapid restoration of the forest to aid in securing pure drinking water, is evidenced by the great difficulty encountered in obtaining suitable drinking water for a municipality; in fact, many cities are now compelled to drink water that is contaminated by sewage.

One of the chief agents in the destruction of life is the end products of life. This law can be easily demonstrated by taking an acre lot in a warm, even climate and supplying it with pure spring water and planting it with good food. On this lot place a pair of healthy, normal rabbits.

If allowed to reproduce at their normal rate, the rabbits would thrive until their number had reached the hygienic sustaining limit of the acre. Then their food, drink and air would begin to be contaminated with the poisonous end products of their own lives and they would begin to decline. Different diseases would attack them until they would all become exterminated.

The same thing from the same cause has happened to the people of the earth through all time and would or will exterminate the people of the earth were it not for certain hygienic or sanitary measures that have been adopted and for certain hygienic and sanitary measures that will and must be adopted.

Among some of those measures that must be adopted to prevent the people of the earth from exterminating themselves by over-population are (1) Measures that will prevent the pollution of the lakes, rivers and streams. (2) Measures that will guard against city, street, house or family

congestion. (3) Educational immigration restrictions, and (4) Measures that will restore the forests.

If the population and the destruction of the natural resources of the United States should continue to increase as rapidly as they have since the discovery of this country, we in a comparatively short time would be living in such unsanitary and congested surroundings and drinking water so contaminated with sewage that the higher classes would have become exterminated and the degenerate classes that are trained to live in a hog-like environment would survive. But thanks to the awakening of a money-mad people by Pinchot and Roosevelt to the dangerous influences of the special interests and the importance of the conservation of the natural resources and the restoration of the forests, this will never happen. Conservation and restoration thus become the vital issues of today.

Patrick Henry said: "Give me liberty or give me death." We of today must say: "Give us an intelligent, reasoning class of people, with the grandeur of nature and the pure air and the pure drinking water of the forests or give us death." We might as well practice and preach this doctrine for if we do not, nature, through degenerative influences and their sequela, as poverty, congestion, sewage water, impure air and sickness, will give us death.

Science has demonstrated that typhoid fever and Asiatic cholera are caused by drinking contaminated water. If the drinking of contaminated water does not cause typhoid fever or Asiatic cholera, it is no proof that such water is not injurious to the health. The drinking of contaminated water, if it does not cause typhoid fever or Asiatic cholera, will pave the way for other sickness.

The relationship between life or health and weather, atmospheric or climatic conditions, is so urgent and immediate that any or all agents that tend to make the weather environment more congenial to life or health should be utilized.

When science recognizes the very important part that weather conditions take in the production of sickness and endeavors to guard against and modify the same, the prevention of sickness will become a more reasonable and effective procedure.

Forests tend to prevent sickness and degeneration in more ways than can here be enumerated or even hinted at. One of the numerous ways in which forests tend to prevent sickness is through the soothing, healing, fragrant chemical changes that they produce in the air, the beneficial influence of which is manifested on inhaling the same.

The therapeutic chemical influences on the breathing air of the pine, eucalyptus and hemlock trees in the prevention of respiratory diseases are well known and have often been demonstrated. Then again there are many shrubs and herbs that abound in forests that exert a favorable influence

on the chemistry of the air, as wintergreen, sassafras, krinkle root, etc.

The environment of the forest affords an important aid in the prevention of the functionally mental or psychological debilities and insanities.

The United States has witnessed more extreme and unseasonable weather conditions since the destruction of her forests than before. When people living miles apart are simultaneously afflicted with similar epidemics, as summer complaint, autumnal coryza, winter influenza and the epidemic of laryngitis, trachitis and bronchitis through which we have just passed, while receiving or being influenced by nothing in common but the weather, it is a self-evident fact that the weather is the exciting cause.

The blood is the biochemical medium between the weather on the lung-skin side and the food on the gastro-intestinal side, and it is directly and immediately influenced for good or bad by changes in either the food or the weather. This is most convincingly demonstrated by the unstable and hyper-susceptible blood of the asthmatic that is sensitized to certain numerous weather and food conditions. The dyspnoic crisis of the asthmatic's unstable blood is often precipitated by sudden weather changes and extreme weather conditions.

Since 1895 I have studied and had under my observation 529 cases of asthma that have originated and resided in various parts of the country. My constant observation of these asthmatics as to the relationship of their affliction to food and weather conditions has constituted a sort of weather bureau.

When an unfavorable weather wave or current sweeps the country, unfavorable reports come in, and reversely, when a favorable weather wave sweeps the country, favorable reports come in.

The observation of these 529 asthmatics as to their relationship to weather waves or currents has most forcibly impressed upon me the interlocking relationship between weather and sickness. An even, equitable climate, such as a proper forestry would assist in producing, is of so much importance in the prevention of sickness that every possible method of producing the same should be utilized.

Forests benefit animal life by their equalizing influence on climatic conditions and by the life-giving gases or chemicals that are formed by their foliage, as oxygen, ozone, aromatics, etc.

Forests cool the scorching, blighting rays of the sunshine, lessen the sting from the frost bite, add moisture to the drought, check the blizzards and cyclones, stay the floods, extract the irritating, death-producing gases from the breathing air, add to the breathing air a healing, life-giving balm, and hold in reserve a goodly supply of uncontaminated, cool drinking water.

A forest or a clump or a row of trees is much more effective in checking winds than a solid impenetrable wall of the same height would be.

A forest by sifting the wind checks its speed and breaks up its currents, whereas a solid wall simply turns the wind to one side, allowing it to continue its destructive course.

Forests assist in affording uncontaminated drinking water by their tendency to equalize rainfall, by rendering the soil an efficient filtration plant, and by affording an unpopulated area, thus keeping away residential contaminations.

The ancient physician had a better knowledge of the relationship between weather conditions and sickness than the physicians of today possess. The relationship between sickness and variations in barometric pressure, temperature, humidity, winds, clouds and sunshine, is often of so much importance that many when sick are truly "under the weather."

The sturdy backwoodsman has, under the destruction of the forest, degenerated into the delicate or tubercular individual of today.

That we have been of late experiencing more extreme and unseasonable weather conditions than ever before is the common knowledge of all. Had Ohio and Indiana been systematically forested, it is quite probable that their recent destructive floods would have been avoided. Forests permit the rainfall to soak in the ground, thus preventing its rapid formation in destructive floods.

The north of China has been reduced to a desert by the destruction of her forests and their restoration rendered a physical impossibility.

If a country cannot grant two square miles for a forest reserve to every thirty-six square miles of territory, it has exceeded its sustaining capacity.

Animal life was preceded by vegetable life, and the existence of animal life depends directly, continuously and immediately upon vegetable life. Forests and other vegetable life produced the environment, food and material from which animal life sprung. Animal life is a by-product, an offspring or offshoot of vegetable life. Forests and other vegetable life produced the environment, nutriment and substance from which animal life grew into existence, provides the substance upon which animal life exists today, and accordingly with the dangerous destruction of forests and other vegetable life, animal life degenerates and declines. With the complete destruction of forests and other vegetable life, animal life will be exterminated.

When the government of a country permits the destruction of her forests with nothing to show for it but a crop of millionaires the government of that country is not working for the interest of her country or humanity. The way the United States has permitted the destruction of her forests to produce millionaires reminds one of King Midas, of mythological fame, by the touch of whose hand everything was turned into gold. When nearly famished for the want of food and drink, he was about to take a drink of

pure, sparkling water, lo, it turned into gold. Thus, unless the insane destruction of the forests is checked and the same rapidly restored, we money-mad people, in attempting to take a drink of water, will find it vile sewage.

Those who do not like sewage water, foul air, unlivable atmospheric conditions, filth, vermin and sickness, but prefer pure, wholesome air, unpolluted water, health, bird song, beauty, grandeur and seasonable, even weather conditions, must work for the restoration of the forests.

Forests or vegetable life take on carbon dioxide (CO₂) and give off oxygen. Animal life takes on oxygen and gives off carbon dioxide. Forests or vegetable life thrive on the end-products of animal life. Animal life thrives on the end-products of forest or vegetable life. Forest or vegetable life was the creator and is the protector of animal life. In destroying the forests we destroy our creator and protector. Forest or vegetable life cannot destroy animal life, but it has the advantage over animal life in that it can live without animal life, whereas animal life cannot exist without vegetable life.

In the north of China, after the animals had destroyed all the forest life, plague or disease, drouth and famine destroyed all the animal life, and the same will remain void of animal life until nature has had time to recreate the forests, thus removing or destroying the end-products of animal life, or their deadly putrefactive alkaloids.

Where there abounds an abundance of forests and vegetable life, we find the best of animal life, as the Indian, sturdy backwoodsman, the deer, the lion, the tiger, the elephant, the wild horse, the buffalo, the fox, the birds of song, the birds of plumage, etc.; in fact, the best, most vigorous and beautiful, the largest, strongest and longest lived animals abound where the equilibrium between animal and vegetable life is proportionately greater on the forest and vegetable side.

The hazards of eugenics proportionately increase with the destruction of the forests. The preservation and restoration of the forests will benefit everybody and will not injure anybody.

There is no sane argument against the preservation and restoration of the forests. If we cannot restore the forests at this age, we certainly cannot one hundred years from now, when if the population should increase one-half as fast as it has during the past one hundred years, every inch of tillable space would be occupied by the starved multitudes.

The question is: "Shall we restore the forests and secure what they have to offer for eugenics or humanity, or shall we go on destroying the forests, crowding the people together to be degenerated and slaughtered by sickness, famine and drouth until they are exterminated?"

With a proper forest reserve and with efficient or educational immigration restriction, the people of our country would be given the best possible evolutionary advantages.

Two of the cities of our state, Syracuse and Hornell have begun the development of municipal forestry and in mentioning the same, the Buffalo *Enquirer* stated that "Many of the larger cities of Germany own valuable forests and the income received from these forests goes far towards meeting the expenses of the cities owning them. There are villages and small cities in the Black Forest which own forests enough to give an income which makes payment of taxes unnecessary; in fact, in some instances, instead of paying taxes, each member of the community receives a small income. It may never be possible to develop city forests as extensively in this country, and yet this work is just being begun and the cities acquiring forest lands or planting today will have no reason for regret."

REFLECTIONS CONCERNING THE ART OF HEALING.*

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COULD one's mental vision range over the dim perspectives of the past and recognize the master intellects which have guided the healing art from its earliest beginnings; could he picture with fitting brevity and accuracy the conditions under which each labored—their physical, moral and mental environments—of what surpassing interest would be the narrative!

Remember that ever since the appearance of man upon the earth in his present form, ever since those pre-historic days, the incredible remoteness of which is so positively established by fossil evidence, the grim fight against disease, injury and death has been waged.

Throughout the unnumbered centuries, including the period of ancient history and terminating in the epochal irruption of barbaric hordes which compassed the fall of the Western Roman Empire in the fifth century of our Christian era; throughout the succeeding middle, or dark, ages, when progress was stayed and ignorance resumed her rampant sway; throughout the long final stretch of years initiated by the revival of learning which characterized the Renaissance of the thirteenth century, distinguished by the mental, moral and physical emancipation of man and crowned by the brilliant achievements of our own day and generation—through all this time the good work has gone on.

Keeping pace with the growth of population, the healers have ever multiplied, though their distribution has generally been determined, particularly in later years, by influences seemingly quite apart from those of local demands. Despite the best efforts of these healers, however, who have so labored in behalf of humanity through the untold years of the past, how ter-

* Read before the Buffalo Academy of Medicine, June, 1912.

rible has been the toll exacted for the privilege of living! How stupendous has been the waste of life from an economic standpoint, how pitiful the unnecessary suffering, how tragical the terrors inspired by the mysterious and omnipresent agencies of death! Is it not passing strange that man should have been thus forced to work out his own physical salvation? Is it to be wondered at that the lamp of faith burns but dimly in him, however orthodox he be, who strives to reconcile such seeming indifference and all its cruel consequences with the beneficent attitude ascribed to Providence? Could the lessons acquired only by the bitter experiences of man's past have been inculcated when first he inhabited the earth, to what mental heights would we of the present have climbed! An attempt to compare the actual with the potential quite staggers the mind.

The practise of the healing art as now in vogue among the native Africans, the Esquimaux and the more primitive of our native Indians probably best represents the methods of the ancients. A healthy environment, rather than the ministrations of the medicine-man, was largely responsible for favorable results. With the civilization of Egypt, Greece and Rome, however, the art made long forward strides. Medicine and surgery were more ably represented in general, while great pathfinders, such as Hippocrates of Cos, occasionally appeared,—that brilliant Greek who so well deserved the title "Father of Medicine" bestowed upon him by an admiring world.

Following the inaction of the dark ages, the western movement of civilization was attended with marked general progress, in which medicine bore a prominent share. Interest in the study of ancient classical art and in the pursuit of learning was revived, and the Renaissance was inaugurated.

The invention of the mariner's compass led to the finding of America and enabled the frail barks of those days to undertake distant voyages of discovery. Paper was manufactured more abundantly and comparatively cheaply, and printing, "the art preservative of all other arts," was thereby rendered practicable. Manners, philosophy, art and politics were gradually transformed. The domination of scholasticism, feudalism and of the church was displaced by nationalism. Science flourished and books multiplied. Knowledge was rendered more and more available to the many, and thus were gradually evolved the conditions of today.

From the remotest antiquity even down to the recent past, and despite the teachings of experience and the gradual accumulation of scientific knowledge, the medical man has ever been hindered in his therapeutic efforts by the fact that he was forced to contend in a large degree against unknown foes. Mystery has dogged his efforts. The damage wrought by visible, tangible agents was repaired more and more surely and effectively as genius and persistent, purposeful study pointed out the way; but, alas! disaster,

inexplicable and varying in degree alone, was the rule rather than the exception.

In their fear and distress the afflicted and the sound alike sought relief and protection from whatever quarter promise was extended. The aid of heaven was invoked in the polyglot prayers and observances deemed most effective, each according to the suppliant's belief. The dealer in mystery, the subtle pretender, the blatant quack, the ignorant grafter and the commercial healer all hastened, then as now, to share unworthily in the feast provided at the expense of their afflicted fellows. The terrors of the plague, cholera, smallpox, black-death and the other infectious scourges were abroad in the lands and were voiced in the appeal for deliverance which still graces the litany. Surgery was beset with hazards, its sphere of usefulness sharply delimited. And while the bright minds of many shrewd observers, of various times and countries, proclaimed with singular keenness their suspicions regarding the nature of their unseen foes, the latter ever escaped detection.

Man's unaided visual powers were inadequate. It is possible that in the course of time pure inductive reasoning would have solved the enigma, but, fortunately for the human race, the persistent efforts of the opticians through many generations were finally crowned with success and the eyes of men were effectively opened. The great optical barriers, spherical and chromatic aberration, were gradually surmounted, and about 1830 the compound refracting microscope, in practical form, was first placed in the hands of many zealous students, all eager to explore the unknown world of minute forms. Armed with this new instrument of scientific research, knowledge advanced by leaps and bounds. The mysteries of the preceding ages were rapidly resolved under the close scrutiny of its powerful eye, and today its accomplishments have already advanced the cause of the healing art more, perhaps, than had the labors of all the centuries past.

The true form and structure of the blood corpuscles were ascertained, as well as the cellular origin and nature of both animal and vegetable tissues, and gradually was built up the mass of facts, wonderful in their novelty and import, which comprises the voluminous cytology of the present day. Gale, or the itch, was reduced from its high rank as a fashionable disease, from which royalty itself was not exempt, to its present ignominious standing largely by the microscope's revelations. It was affirmed by Hahnemann with all seriousness that seventy-five per centum of human ills were merely the various manifestations of itch "struck in," and the history of medicine affords many examples of like attempts to conceal profound diagnostic ignorance under the cloak of sounding appellations.

That an almost invisible parasitic insect should be disclosed as the simple cause of a disease so important and wide-spread was a distinct shock

to the medical men of the time and stimulated them to the fresh endeavor which soon bore fruit in the discovery of the *trichina spiralis* and the *achorion* of Schœlein.

It was to the labors of a later generation of workers in the swarming fields of microscopic organic life, however, that were reserved discoveries which revealed the true nature of the long sought, invisible agents of evil to the human race. To this end the study of alcoholic fermentation paved the way and first threw a flood of light upon the manifold effects of microbial activities which illumined the paths to be followed by future investigators.

Schwann, in particular, was led by his investigations to assert that yeast was made up of living vegetable organisms, the growth of which was responsible for fermentation; and, with other observers, he even hazarded the surmise that the swarming particles seen in putrefying animal and vegetable matters were micro-organisms alike causal in their actions. This "vitalistic" conception of fermentation was most vigorously opposed by Liebig and his school, and the view that the presence of these minute forms was accidental and insignificant obtained for nearly twenty years.

Then the French chemist, Louis Pasteur, humanity's greatest benefactor, began in 1857 to publish the convincing results of elaborate researches and rigid experimental tests. He proved beyond cavil that fermentation is caused universally by living micro-organisms, that without their instrumentality fermentation and putrefaction could not occur. Organic decay and fermentation were shown to be similar processes. Meat and other organic tissues in a germless environment would keep indefinitely, regardless of temperature or other conditions.

Though not directly bearing upon the etiology of disease, these discoveries regarding the true nature of fermentation fixed the attention of Lister. His keen, practical mind doubtless reasoned that if putrefaction was a form of fermentation and due to bacterial influence, this would be true of living as well as of dead tissues, and that the exclusion of all germs would largely do away with inflammation, suppuration, gangrene and the horrors of blood poisoning, which the world had always regarded as the natural sequelæ of wounds and surgical operations.

Though first published as early as 1867, the views of the late Lord Lister were not generally accepted till 1880,—the natal year, approximately, of modern surgery.

The necessity of attacking those germs which gained access to the animal organism by other avenues than those afforded by wounds led Pasteur, guided doubtless by Jenner, to inoculation experiments. The "attenuation of the virus" by cultivation of the various germs in artificial media, and the efficacy of inoculation with these less virulent forms were first demonstrated in

the infectious diseases chicken cholera and anthrax.

Of the later discovery and marvelous adaptations of serum-therapy by Pasteur, Koch and their followers; of the many refinements and modifications which have attended its evolution and the gradually widened scope of its successful application, most of us are living witnesses. The darkness of doubt and ignorance is being rapidly dispelled by the light of knowledge and confidence. To foretell the precise bounds and limits of accomplishment which the labor of future generations may bring about for the physical betterment of humanity is clearly impossible; but are we not warranted in dreaming hopeful dreams after this brief retrospective indulgence?

Consider for a moment the justifiable amazement of an incredulous world when it was first demonstrated beyond peradventure that the morbid and lethal tragedies of all the past ages had been so largely the work of bacteria,—insignificant in size, guiltless of evil intent, simply blind little parasites, finding shelter and sustenance in the human habitation to which chance had consigned them. That the tears and lamentations of the past, the fervid appeals for succor directed to invisible powers, the heart-breaking separations from loved ones, the abandonment of home and kindred under the inspiration of blind, inconsequent dread of lurking personal peril,—that all these cruel experiences of the past should be traced home to such seemingly vincible agents could not fail to produce a glad reaction of hope and thanksgiving. To secure relief it would only be necessary to work out by patient study and experimental investigations the life histories, the biochemical problems associated with the metabolism of these cellular pests and to compass their destruction *in loco* or nullify their toxicogenic activities. That such an assumption was justifiable has already been demonstrated, as we have seen, and progress along prophylactic and therapeutic lines thus inspired has been so satisfactory and rapid that complete success is apparently to be looked for in the not distant future. Once accomplished, this achievement will mark another gigantic stride upward toward the heights of exact science, and medicine may discard the vague terms "miasm," "humor," "malaria" and "virus" which formerly cloaked but partially her ignorance.

But the ultimate goal is yet to be reached; the wisest are still confounded by the problems in diagnosis and therapy which disease submits for solution. It is this fact, freely acknowledged, which works evil in our midst. Designing self-seekers have ever availed themselves of opportunities for the advancement of their personal fortunes which the gnostic limitations of medical leaders and, sequentially, of the public in general have afforded. Medicine, of all the professions, has always offered and still holds out the largest rewards to ignorance and graft, and she will continue so to do until permanent

reform is effected by the complete disclosure of her secrets and the enlightenment of the laity.

From the remotest past to the present day the leaders of the healing art, with few exceptions, have been observant, studious and learned—each after the measure of his own day and generation. Close in the wake of these successive pathfinders the rank and file of their disciples have pressed on to ever loftier planes of efficiency. Is it not a rational deduction that the ultimate goal of professional attainment will be approached with increasing speed as these leaders are multiplied? What, then, are the most obvious steps necessary to the effectual realization of an outcome of such paramount significance to the human race?

In the first place, the *Quality* of our graduates should be greatly improved, and the importance of this change is amply attested by the ever-growing insistence of the professional demand for it.

Increased preliminary educational requirements, greater duration and thoroughness of instruction, both didactic and practical, more efficient laboratory training and prolonged hospital service should be insisted upon. Examinations should be conducted by state or national boards and should be rigid, impartial and as *nearly uniform as possible*. Post-graduate study and progressive efficiency should be encouraged by the granting of *distinctive degrees*, each of which should positively proclaim and establish the relative merit and trustworthiness of its possessor, and furnish a reliable guide to the sufferer in his quest of relief and cure. How grotesquely absurd is the prevailing practice of conferring the doctorate indiscriminately upon the output of our schools, be they good or bad, adequate or the reverse, proprietary and commercial or broad and efficient in their aims!

Consider for a moment the significance of the appellation of "doctor." It stamps its possessor as one "learned" in the vast and abstruse science of medicine and surgery. Look about and reflect upon the horrible, the criminal injustice of this universal nominal parity. The callow graduate who has not yet mastered even the rudiments of his chosen art, whose educational shallowness is exposed in every professional opinion which he utters, whose crass ignorance is but too frequently even betrayed by his habitual abuse of his own mother-tongue,—such a man is dubbed the nominal peer of the most profound scholars in our professional ranks.

The student of theology, law or philosophy earns the title of "doctor" only by dint of hard and prolonged post-graduate work, or is properly granted the degree in recognition of his eminent merit along special lines of endeavor. Why should medicine, the greatest of the professions, be debased by lower standards?

Were the suggested reforms carried into effect, professional overcrowding, even if it continued—an improbable assumption—would be

free from most of the baneful consequences which at present excite protests of growing indignation and the apprehensions of gloomy forebodings.

Clearly, the signs of the times proclaim the rapidly approaching doom of the illy-equipped, proprietary medical school in all the centers of advanced civilization. Useful during the early stages of national development, if suffered to exist at all, it should now be relegated to the interior of China, to the wilds of Africa or to the semi-barbarous areas of Asia till the general enlightenment of the world demands its final extinction.

In conclusion, and in corroboration of our own views, let us consider a few pertinent excerpts from the recent writings of Dr. J. M. L. Finney, of Baltimore, Md., an authority whose weight and influence will be readily conceded:*

"If," says he, "all of the individuals who in recent years have become possessed of the degree of Doctor of Medicine had been properly trained, there still would have been an over-production of practitioners. As it is, we have not only this plethora of doctors, but a still greater evil in that a large proportion of American physicians and so-called surgeons of today are insufficiently trained in modern methods and are perforce unfit properly to practise their profession. . . ."

". . . Insufficient education and training have made possible the tremendous over-production of poorly equipped individuals, technically M. D.'s, potentially charlatans. The public is rapidly awakening to conditions, and will presently deal drastically with us if we do not clean house ourselves. The cure is to come by enforcing the highest standards in medical ethics, in medical education, advanced requirements for admission to medical schools, rigid adherence to equally high standards for graduation, and, it is to be fervently hoped, an added hospital year as a pre-requisite to practice. Possibly the most malign influence exerted on medical students at the present time is the ubiquitous commercialism manifested, however unwittingly, by their professors, who neglect their moral obligations to their students and to investigation in order to make money or political capital out of their patients or of opportunities that come to them because of the very positions which they are holding, and by this very fact, perhaps, keeping out of the same positions probably more capable men, who would stand up to, sane and honest idealism."

In view of the tremendous future interests involved it behooves every worthy member of our profession to exert himself, each in his own way, to bring about these much needed changes and betterments. Let the good work of progress and improvement go steadily on, with added zeal and growing impetus, till the uttermost pos-

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sible has been accomplished by our successors, to the end that man shall be enabled to live out the full number of his days free from every avoidable mental and physical discomfort.

With the wonders of the comparatively recent past to encourage us, the outcome of future conscientious effort in behalf of our fellows seems full of promise.

The way may be hard and the trials great ere final success crowns our labors, but the purpose is in every way a laudable one and the guerdon well justifies every endeavor. In the meanwhile let us bear in mind the admonition of Pope:

"Know then thyself, presume not God to scan;
The proper study of mankind is man."

THE CONSERVATION TREATMENT OF INJURIES OF THE HAND.*

By VACIL D. BOZOVSKY, M.D.,
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THE reason for presenting this subject is the industrial growth manifest on all sides, which calls for numerous and complex machines, with the avowed object of saving labor and time. The more perfect the machine, the less skillful and experienced the operator is becoming, therefore the more frequent the accidents.

Twenty-five years ago a large proportion of hand injuries were furnished by railroad employees; the air-brake and other improvements have reduced these injuries to the minimum. Today the shops and factories furnish the bulk of the material.

For some reason statistics in regard to hand injuries are very meager and incomplete. Nevertheless, the number of people whose livelihood is affected by crippled hands is large enough to make the subject worthy of the attention of this body.

It is not necessary to go into the anatomy of the hand; to speak of the difference in attachments of the flexor and extensor tendons; of the rich nerve supply; of the wonderful arterial arrangements with its multiple anastomoses; except to remind one that the latter is the reason for so many apparently hopeless injuries that are attended with sufficiently gratifying recoveries.

In my records is a case where a sausage-grinding machine chewed up three of the fingers in the phalangeo-metacarpal joints and amputation seemed inevitable, but the patient wished to take the time for experimenting to try the saving of the hand. The character of the infection in this case made it appear for a long time as though the attempt would be a regrettable failure. But frequent changes of dressing, trimming of sloughs, and early opening of new foci of infection, finally crowned the efforts with a pretty

useful hand, though somewhat deformed in appearance.

Nor is it necessary to consider at this time the typical operations that for several decades have been considered as standard procedures in hand operations. For instance, the recognized rule of anteroposterior flaps of the fingers and hand, and the lateral flaps of the phalangeo-metacarpal joints that are only applicable in choice amputations. In injuries, any kind of a flap is satisfactory when you can save as much of the injured limb as possible. In fact, I have several times desisted from cutting off a portion of the bone in order to procure flaps, particularly when the soft parts are cut off on the same plane with the bone, by suturing anteroposteriorly and laterally the ends of the skin, inserting silk-worm gut strands under the suture over the end of the bone to relieve the tension of the sutures over the soft parts and the bone itself, in this way stopping hemorrhage quickly and causing much faster healing of the stump. Another point of consideration of a stump of this character is that infection rarely sets in. On the same principle a scant flap is not to be despised, anywhere from the fingers to the wrist, in necessity, that procedure has proven a good practice.

In a tear or injury where a large portion of the skin is loosened from the fascia and deflected back towards the distal side, its blood supply is not altogether cut off by any means; what is left from the sides and the plasma between the skin and underlying parts will be sufficient to furnish life. Hence, it should be treated as though the skin were simply divided by incision. In one instance of this kind as much as two inches of skin from the wound and four inches wide was reflected from the hand towards the fingers and yet healing took place without a slough.

In reference to compound comminuted fractures, with the soft parts so extensively damaged as to leave possibly only a part of a tendon of a finger and apparently a very scant blood supply, remarkable results can be obtained without complete approximation, if only a temporary covering of the bone can be maintained. Not frequently such a scant covering will slough off but granulation tissues will supply the loss and the result would be a comparatively useful finger. This is particularly true of the index finger and the thumb, because, even with considerable stiffness in these two members, the hand is far more useful than without them. Even the loss of fragments of bone appears to be replaced in time. But loose fragments must be removed, otherwise healing is delayed.

I have dealt with several instances where the blood vessels and the soft parts were so damaged that amputation seemed advisable, yet after an explanation to the patients that a trial of saving the parts might result in failure and that amputation would be necessary later, the conservation plan was attempted with good results.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

There is a limit, however, to this mode of treatment, particularly in the case of the middle and ring fingers; it is better to have a part or the whole of the finger lost than to have it stiff and in the way.

The time-honored formula of trying to prevent infection by moist and aseptic dressings is not a satisfactory manner of treating infected or supposedly infected wounds. The moist dressing is only applicable for a very short time and where drainage is well established. If that should be deemed advisable, alcohol added to bichloride solution to make 10 to 50 per cent. alcohol solution in 1 to 2,000 bichloride seems to work very satisfactory for a few applications. For irrigation of wounds, iodine, 1 to 2 per cent. in water, is very good.

In all cases of small foci of infection, a fairly large incision should be made to insure drainage. This cannot be emphasized too much, that the old practice of the use of poultices and external applications "to draw things to a head" must be relegated as an antiquated method. The only method that will stop the spread of infection, if that can be done, is the free and early incision. Incise when the diagnosis is only that of suspicion, for there is no harm done. But there is harm in waiting for developments. With local anesthesia at hand we should not dread this simple but sound practice.

Incisions in the palm of the hand need only one consideration; and that is to avoid the superficial and deep palmar arches. If one bears in mind that these arches approximately correspond to a curved line (concavity towards the fingers) drawn from the web of the index finger and thumb to the pisiform bone, the accident of cutting the artery in opening an abscess could be avoided. As a rule, after the incision through the skin, an ordinary grooved director could be used with safety to feel for any pockets that are containing pus. But it is surprising to see how many foci of infection in the hand are distal to the superficial and deep arches in this region.

In opening foci of infection in the thumb, bear in mind that the ulnar side of the thumb has larger vessels than the radial side.

In reference to suturing of tendons, if parts are bandaged in splints and the tension in the suture properly relieved, it makes little difference whether a simple or Lembert suture is used. Chromic gut is preferable, but in two instances I have used silk-worm gut in the absence of chromic gut on the extensor tendons, and while I would not advocate that as a choice material, in an emergency it could be used as well as silk. Suturing of the skin is satisfactory both with silk-worm gut and silk, but wounds of the fingers are more satisfactory for after treatment if sutured with silk.

Disinfection of the wound and the skin could be practiced in several ways. I have found the following satisfactory: Plenty of soap and water,

followed by an application of iodine, this followed by alcohol, then iodine as the last application. Always apply iodine to the wound.

Where there is a considerable amount of grease on the skin, 1 to 1,000 iodine crystals in benzine is quite satisfactory to remove the grease and disinfect the skin, especially where ether is not applicable. I must say that scrubbing of the wound itself is an unnecessary cruelty, and often infecting unless the brush is changed, but the removal of sand and grit and foreign particles of all kinds should be carefully done.

In reference to splints about the fingers and hands, especially when small splints are necessary, thin aluminum or zinc plates, padded with adhesive strips, are very satisfactory.

In conclusion, no injury about the hands or fingers should be considered hopeless until a conservation trial of three or four days is instituted. Of course, it goes without saying that if you have extensive bone area exposed, without covering the latter, it is useless to try. Also the element of time is to be considered, whether a man can afford to wait weeks for obtaining a deformed hand and stiff fingers, or sacrificing the fingers and returning to work in a few days.

Discussion.

DR. WM. L. WALLACE, of Syracuse, N. Y., said: Many injuries of the hand are at the time so trivial that they do not come to the immediate attention of the surgeon. The most dangerous and destructive results follow the immediate or subsequent infection of such wounds. Many a man loses his hand or life on account of the careless treatment or neglect of trivial injuries. The unsterilized needle or knife cares for the sliver or hang-nail. The neglect of the use of tincture of iodine to cleanse and close the little wound leaves an open bed for infection. The slight wound results in a swollen, infected hand, which is finally brought to the surgeon perhaps two weeks after the forgotten injury.

The treatment of this stage or result of the injury is free incision and drainage. A point to remember is that even if the pus is deep in the palm, the swelling and edema will all be in the loose cellular tissue at the back of the hand. The palm will be tender and painful *because it cannot swell*, and here will be the pus. Conservation surgery avoids all incisions through the anterior surface of the hand or wrist. The palm of the hand should never be cut. Contractures, tender scars, and keloids will be avoided, if the incisions are made through the lateral border, or, if necessary to reach the pus, even through the dorsal surface of the hand into the palm.

DR. FREDERICK W. LESTER, of Seneca Falls, N. Y., continuing the discussion, said that Dr. Bozovsky's methods were distinctly progressive; also his suggestions regarding the disinfection of the wound and skin by means of iodine and alcohol; and also the use of iodine and benzine

to remove grease and disinfect the skin where ether is not applicable.

Going back a step to the time of the receiving of the injury and realizing that absence of germ infection is the fundamental principle underlying conservative treatment, Dr. Lester would like to call attention to some general consideration preceding and following hand injuries.

First Aid. In large machine shops employing hundreds of men, as well as in smaller ones, we can be of great assistance to the injured man if we urge and advise the managers of the business to establish first aid stations in one or more locations in their plant. These stations are to be provided with sterile dressing packages and bandages. Amateur aid by means of these useful stations will be of value in applying a first aid dressing, or binding a temporary tourniquet about a wrist. The amateur will not attempt the cleansing the wound, simply applying a sterile dressing until the surgeon arrives. An inspection is then undertaken, if needed, urgent hemorrhage checked, and a clean covering over the entire hand applied. Too frequently chance rags, horse blankets, etc., are used with very disastrous results.

Transportation should then be made to the physician's office or to a hospital operating room where an examination may be made. No way-side operations are to be undertaken. Shock, physical or psychical, should be combatted. The hand should be thoroughly cleansed; soap and water, with a brush, will remove all sand and dirt. Turpentine will remove oily soot, or ether may be used for the same purpose. The hand may then be left soaking in a 1-1,000 solution of mercury bichloride for five minutes, during which time the surgeon may sterilize his own hands and put on his sterile gloves.

The question of operation is now decided and such conservative operation as may be necessary should be done at once. This work will be facilitated in most cases by general anesthesia, and the use of an elastic bandage at the wrist to secure a bloodless field. Drainage is best accomplished by means of strips of sterile sheet rubber, such as pieces from a torn glove. The cardinal principles for success are cleanliness, bloodless field, and good drainage. Many an infection would be avoided and the hand or part conserved, were we able to secure, by the first aid station, a prompt protection at once of hand injuries.

CORRESPONDENCE.

Jamestown, N. Y., July 18, 1913.

The Editor of the New York State Journal of Medicine:

Dear Sir: Will you kindly favor me by publishing the following:

That due credit may be given Dr. Irving S. Haynes, I wish to state that the basis of my

paper entitled, "Early Diagnosis of Intestinal Cancer," which appeared in the April, 1913, number of the above JOURNAL, was partially derived, not only from my familiarity with a paper written by Dr. Haynes on the same subject, but from my notes which were taken when Dr. Haynes read his paper in 1909.

FREDERICK H. NICHOLS.

Medical Society, State of New York

SEVENTH AND EIGHTH DISTRICT BRANCHES
OF THE MEDICAL SOCIETY OF THE
STATE OF NEW YORK.

JOINT ANNUAL MEETING, AT SONYEA, SEPTEMBER 24
AND 25, 1913.

PRELIMINARY PROGRAM.

Wednesday, September 24th.

Business session of the Eighth District Branch, 8.00
P. M.

Thursday, September 25th.

Morning, 10 A. M.

President's Address. The Eighth District Branch.
A. G. Bennett, M.D., Buffalo.

President's Address. The Seventh District Branch.
Wm. T. Shanahan, M.D., Sonyea.

"The Burden of Mental Defect," Herman Matzinger,
M.D., Buffalo.

"Field Work in the Study of Epilepsy," David F. Weeks, M.D., Supt. New Jersey State Village for Epileptics.

Discussion opened by Dr. Gertrude E. Hall, Bureau of Analysis, New York State Board of Charities.

"Recent Advances in Neurology and Psychiatry,"
Edward L. Hanes, M.D., Rochester.

Discussion opened by E. P. Ballantine, M.D., Rochester.

"Landry's Paralysis and Its Relation to Acute Poliomyelitis," E. A. Sharp, M.D., Buffalo.

Discussion opened by N. G. Russell, M.D., Buffalo.

Recess for luncheon.

Afternoon, 2 P. M.

BUSINESS SESSION OF THE SEVENTH DISTRICT BRANCH.

Scientific Session.

"The History of Surgical Intervention in Epilepsy,"
Roswell Park, M.D., Buffalo.

"The Association of Skin Lesions with Diabetes,"
John R. Williams, M.D., Rochester.

"Suggestions for a New Classification of the Syphilides," illustrated by stereopticon, Grover W. Wende, M.D., Buffalo.

"Sugar Tolerance is Epilepsy," illustrated by stereopticon, J. F. Munson, M.D., Sonyea.

Discussion opened by A. L. Shaw, M.D., Sonyea.

"A Further Report Upon Some Hematological Cases," John M. Swan, M.D., Rochester.

"Intravenous Use of Paraldehyde," G. Kirby Collier, M.D., Sonyea.

Arrangements have been made so that those who wish to remain over the night of September 24th, can be cared for at the Institution as guests of the Medical Staff. Upon receipt of this program all members are requested to kindly advise W. T. Shanahan, M.D., Sonyea, N. Y., if they expect to remain over night so that the number to be cared for can be ascertained.

The program has been so arranged as to permit those who so desire to visit the various parts of the Institution, the afternoon of September 24th being especially for members of the Eighth District Branch.

The Pennsylvania and Erie Railroads have stations on the Colony premises. The Pennsylvania branch extends from Rochester to Olean and the Erie from Rochester to Dansville. Trains leave Rochester for Sonyea via Pennsylvania Railroad at 7 A. M., 5.10 P. M. and 8 P. M. Returning leave Sonyea for Rochester via Pennsylvania Railroad at 6.42 A. M., 9.39 A. M., and 6.12 P. M. Trains for Sonyea leave Olean via the Pennsylvania Railroad at 7.15 A. M. and 3.35 P. M. Returning leave Sonyea at 8.29 A. M. and 9.15 P. M.

Erie trains arrive at Sonyea from Rochester at 11.30 A. M., 5.50 P. M. and 6.40 P. M. Leave Sonyea for Rochester at 8.15 A. M., 9.20 A. M. and 4.01 P. M. Last trolley leaves Mt. Morris at 9.40 P. M. for Rochester.

Trains leave Buffalo via Lackawanna Railroad at 9.30 A. M., 4 P. M. (Local) and 6.30 P. M. Returning leave Mt. Morris at 12.08 A. M., 6.31 A. M., 11.36 A. M., 3.52 P. M. and 6.32 P. M. Mt. Morris is the nearest station for the Colony.

Sonyea is readily accessible by auto from any part of the state.

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

REGULAR MEETING, BUFFALO, JUNE 16TH, 1913.

BUSINESS SESSION.

President Whitwell presided.

Minutes of the meeting of April 21st and of the Council meetings of June 2d, were read and approved.

An address was made by Mr. Saunders of the Buffalo Chamber of Commerce in regard to inviting the American Medical Association to Buffalo in 1914.

On motion, the communication was received and referred to the Council.

On motion, a letter received from the Academy of Medicine was referred to the Committee on Legislation for action.

On motion of Dr. Rochester, duly seconded, the Council was requested to consider the advisability of dropping Section 2 of Chapter XII of the By-Laws. (Reading of names in arrears).

Dr. Hopkins, Chairman of the Committee on Public Health, offered a resolution asking the Gratwick Laboratory to comment on a paper on Cancer in the *Boston Surgical Journal*, as follows:

"Resolved, That the Medical Society of the County of Erie hereby respectfully requests of those in authority at the Gratwick Laboratory, information or critical appreciation of the subject matter of the paper in the *Boston Medical and Surgical Journal* of June 5th, 1913, entitled 'An Etiological Factor in Carcinoma and Its Possible Influence on Treatment,' by Howard W. Nornell, M.D., Boston.

Dr. Rochester then raised a point of order and the President ruling in favor of Dr. Hopkins the latter asked for a vote of the society.

The ruling was lost by vote of 19 noes, 12 ayes.

Dr. Hopkins reported progress as Chairman of the Committee on Public Health.

Dr. George J. Eckel reported progress from Committee on Membership, and presented the name of Dr. Gustave A. Hitzel for membership, who was duly elected.

Dr. Bonnar, Chairman Board of Censors, presented his report, which was received and ordered filed.

A letter from Dr. Harry R. Trick, President Buffalo Academy of Medicine, in regard to obtaining autopsy permits, was referred to the Committee on Legislation.

Dr. Bennett, as President of the Eighth District Branch, made his official visit and in a glowing appeal of a few words requested the securing of new members; he also called attention to the joint meeting of

the Seventh and Eighth District Branches, to be held September 24th and 25th at Craig Colony, Sonyea.

The following scientific program was then presented: "Treatment of Breech Presentation," by P. W. van Peyma, M.D.

"Forests and Their Relationship to Eugenics," by George N. Jack, M.D.

MEDICAL SOCIETY OF THE COUNTY OF DUTCHESS.

REGULAR MEETING, JULY 9TH, 1913.

SCIENTIFIC PROGRAM.

"Blood Pressure Examinations," W. A. Kreiger, M.D., Poughkeepsie.

"Blood Pressure Causes," W. H. Conger, M.D., Madalin.

"Blood Pressure Effects," A. S. Dederick, M.D., Rhinebeck.

"Vascular Changes After Middle Life," F. H. Greene, M.D., Poughkeepsie.

"Presenile Changes at Autopsy Table," H. P. Carpenter, M.D., Poughkeepsie.

ERRATA.

On page 403 of volume 13, No. 7, July 1913 issue, the report of the semi-annual meeting of the Queens-Nassau Medical Society should read:

The following amendment to the By-Laws was proposed instead of "was adopted." By common consent, the further consideration of this amendment was laid over until the next meeting.

BOOKS RECEIVED.

THE MODERN TREATMENT OF NERVOUS AND MENTAL DISEASES. By eminent American and British authors. Edited by WILLIAM A. WHITE, M.D., Government Hospital for Insane, Washington, D. C.; Professor Nervous and Mental Diseases Georgetown University and George Washington University; Lecturer on Mental Diseases U. S. Army and U. S. Navy Medical School, and JAMES ELY JELLIFFE, A. M., M.D., Ph.D., Adj. Prof. Diseases Mind and Nervous System Post Graduate Medical School and Hospital; Visit. Neurologist City Hospital; Consult. Neurologist Manhattan State Hospital. Two octavo volumes, about 900 pages each, illustrated. Per volume, cloth, \$6.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

DIET IN HEALTH AND DISEASE. By JULIUS FRIEDENWALD, M.D., Professor Gastro-Enterology College Physicians and Surgeons, Baltimore; and JOHN RUHRAH, M.D., Professor Diseases Children, College Physicians and Surgeons, Baltimore. Fourth edition, thoroughly revised and enlarged. Octavo of 857 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$4.00; half morocco, \$5.50 net.

DEATHS.

SAMUEL BLUME, M.D., Riverhead, died July 18, 1913.

F. A. CRANE, M.D., Lowville, died June 2, 1913.

H. FURNESS, M.D., Malone, died July 5, 1913.

LOUIS PEISER, M.D., New York City, died August, 1913.

JAMES L. WATT, M.D., Sherman, died June 24, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

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The Medical Society of the State of New York is not responsible for views or statements, outside of its own authoritative actions, Published in the Journal.

Vol. XIII.

SEPTEMBER, 1913

No. 9

EDITORIAL DEPARTMENT

THE IDIOT AND EUTHANASIA.

IS there one amongst us who is not fond of the domesticated animals? Without remorse, when necessary to relieve them from suffering, for experimental purposes and for food, we condemn them to a painless death. The human species alone of the animal creation is endowed with that reasoning faculty called intellect; take it away and the brute remains. Our spiritual sense is so imbued with reverence for the form created after the image of the Creator, that through the grossness of the material body we see the soul within, which makes us hesitate to destroy life in an attempt to restore mentality,—the idiot's true heritage. The mother sees in the lineaments of her idiotic child the features of husband or maybe grandparent; she knows it is of her own flesh; its very helplessness awakens in her a maternal love so divine and so strong, so unselfish, that she would sacrifice her life in its protection. The dictates of reason tell her that it were better her child had not been born; that it would be better for the Angel of Death to bear it away into the twilight of the unknown, but no—with a devotion sublime in its intensity she will succor and cherish its existence to be-

come an object of compassion, a menace to her and to society, rather than submit it to the knife of the skilled surgeon in an effort to grant it restoration to mental health.

Should we suggest that the state take possession of the idiotic child contrary to the wishes of the parents, we would be accused of heartless cruelty. When, though, through death of its natural guardians or voluntary release, the state becomes its protector, treatment in accordance with our modern development in brain surgery should be permitted without considering the mortality. The idiot of all living creatures, has no place in this sentient world of thought and activity. He looks upon the beauties of the universe with a dull and uncontemplative eye. Harmony and discord fall alike upon his indiscriminating ear. Hunger and thirst he feels as an instinctive craving, which assuaged, he falls into a sottish content, yet every sympathetic cord in our nature vibrates with pity when we look upon this abortion which blights the face of nature, though—even as his mother, would we protect him from harm.

In the June issue of this JOURNAL appeared an article by Roswell Park, M.D., on Brain Surgery. Particularly interesting were his re-

marks upon that division of his subject entitled Imbecility and Psychic Disturbances.

Dr. Park says: "It is going far too wide, to intimate that surgery might be effective in even a large proportion of these cases, but there certainly is a period in their early history when some operative attack might be brought to bear upon a sufficiently encouraging percentage to justify anything and everything in this direction. Still I believe in operating upon a good many of these children, performing operations whose essential feature is a decompression, believing that we err usually in making it insufficiently complete. When it can be established that paths of conduction are completely interrupted, or that the brain structure itself is defective, then little or nothing can be expected, and yet the greatest good to the greatest number justifies an euthanasia for these children. On the other hand, if a reasonable integrity of brain structure can be fairly assumed there is no reason why craniectomy or decompression should not be given an opportunity to relieve pressure and permit more normal development. I believe, then, in operating upon these cases at the most favorable time, being well aware of the discredit which is likely to be reflected upon our efforts, in case of failure. If but one case out of twenty of this character can be benefited, is it not better than to let it go with the rest?"

Is it not then humane to advocate the intervention of surgery in every case except where heredity, deficiency or recognized maldevelopment of the brain structure preclude the possibility of a cure? We doubt the correctness of Dr. Park's application of the word "euthanasia" unless used in the same sense that death following any operation to effect a cure could be so designated. The primary object of surgical interference in these cases is restoration to mentality. If the surgery is so radical that death follows it is a happy deliverance to the idiot from the ills and sufferings of life. If, on the contrary, mentality is restored, the idiot is transformed into a working unit of the community, a valuable asset to the state. In either case the state is the gainer, both from an economic and humanitarian standpoint. A cure of 4 per cent. of these cases, which we believe to be a conservative estimate, basing our assumption upon the fact that many of these cases of idiocy are due to a traumatism just previous to, during, or following birth, are susceptible of such a result

by an early operation. We feel, though, that the courageous surgeon who would put into practice his convictions in this regard would be sustained by the thoughtful few but assailed with a storm of abuse by the populace as a slaughterer of the innocents.

THE LAW IN ITS RELATION TO PUBLIC HEALTH.

THE state owes to the taxpayer and his dependants not only protection to life and property but a conservation of their health and morals, which are so inseparably interwoven. The enforcement of the laws regulating health ordinances requires marked discretionary judgment, influenced by a knowledge of the most recent discoveries in sanitary science combined with executive ability, energy and force of character in the man holding the important position of State Commissioner of Health. The recently promulgated laws are comprehensive and exacting. With their proper execution a lessened mortality should result. The present incumbent of the office reappointed by the governor has now the power and opportunity to demonstrate his possession of the above mentioned qualifications. His salary is adequate and the character and scope of his duty is such as to stimulate latent talent, which lies dormant in most men until called forth by some extraordinary occasion, and such an occasion is now presented to State Health Commissioner Dr. Eugene H. Porter. We wish him success and trust that the results of his administration will prove that the confidence reposed in him will be amply justified. It is not expected that a citizen called to the high office of a State Executive possesses more than a superficial knowledge of the intricate details of the different state departments. If gifted with sagacity he will recognize his limitations and summon to his aid men of probity and experience versed in the proper administration of the different branches of state government. Notwithstanding the unenviable plight of Mr. Sulzer at the present time we cannot but concede to him an exhibition of philanthropic executorship by indorsing the adoption of the new sanitary revisions, though undoubtedly suggested by the special committee appointed by him to investigate the health regulations and their administration in every town, village and city throughout the

state. A laxity in the past enforcement of even the inadequate existing laws was known to have unfortunate results. Benefits resulting from a rigid observance of the new regulations will compel recognition and appreciation by the public, which as you know is more or less apathetic, may more, antagonistic to sanitary regulations when they in any manner interfere with personal comfort or convenience. Thanks are due to the committee whose illuminating report of its investigation and wise suggestions accompanying it show how well qualified it was to perform its allotted task. The mentioning of the names of the personnel of this committee is but a just tribute to their individual endeavors. The following constituted the committee: Hermann M. Biggs, M.D., chairman; Homer Folks, Secretary; E. R. Baldwin, M.D., W. E. Milbank, M.D., Mary Adalaid Nutting and John C. Otis, M.D. We would like to review in detail the revisions of the new regulations of health, but space will not permit.*

"PHYLACOGEN."

THE injection of biological products for therapeutic purposes is the trend of modern medicine, perhaps the fad of the hour. How much of what we are now doing will stand the test of time is a question. We seem to be on the right track, but our present knowledge is so incomplete that the exercise of caution is necessary.

Organotherapy has found its place in modern medicine, and many products from the laboratory obtained by extracting substances from animal organs are widely and wisely used. Immune sera have established themselves in our armamentarium. Active immunization by means of bacterial products is practiced. The Wright bacterial vaccine has been put to wide use. Its value can be judged by a consensus of opinion, but it is here that our knowledge is incomplete; many things are yet unexplained. We do not know why bacterial vaccines act well in some cases and have no apparent effect in others. We know, as yet, very little of immunology. It is certain that many cases treated by vaccines have shown improvement which should rightly be attributed to other causes, and a number of cases

have proved failures in which vaccines have been administered with great hopes of success.

It is in the desire to determine a bacteriological product which will produce active immunity to be used therapeutically and prophylactically that modifications of the Wright vaccine are being put out. Some are trying "sensitized vaccines," some filtered vaccines, some filtered products of disease without cultures. Along with these comes a widely advertised product, made by one of our leading chemical houses, under the name of "Phylacogen," of varying composition to suit the case upon which it is intended to be used, and prepared according to a secret formula, but which we are given to understand contains the products of metabolism of several strains of several species of bacteria, grown in a broth medium in the composition of which lies the secret. The "Phylacogen" is a filtration of this after death of the bacteria is insured. It is marketed with instructions as to use.

There are a lot of men using it. Intelligent men say good things of it. Other men equally competent speak ill of it. There is doubtless virtue in it, but its administration must be guided by the intelligence of the man using it, and not entirely by the directions of the company exploiting it if they are not in accord with the physician's knowledge of existing conditions.

We have known "Phylacogen" to do good in cases where other therapeutic measures failed. We have likewise known harm to result where its administration led to severe reactions. Our present knowledge of immunology does not permit us to differentiate this subject beforehand, and the secret composition of the broth—the base of the mixture—might hinder us even if we were better acquainted with this subject and with anaphylaxis.

If you are using on your patients Wright's vaccine, Schäfer's vaccine, sera, "Phylacogen," or any other of these products, of which our knowledge is immature, go slow. Take into account his constitution; consider how much his resistance has been lowered by the disease; and figure how much more poison he can stand to effect immunity without causing disastrous results. We hope that in the near future we may know about this subject from a really scientific standpoint, and be able to pick out the proper kind of a bacterial agent to combat a given bacterial infection.

F. A. H.

* An Act to Amend the Public Health Law generally will be found on page 498.

Original Articles

SOME ASPECTS IN RELATION TO THE CHRONIC GONORRHEIC, FROM THE STANDPOINT OF SURGERY AND EUGENICS.*

By JAMES N. VANDER VEER, M.D.,

ALBANY, N. Y.

IT has been my good fortune in the years in which I have made a study of these conditions to have sufficient time and the accompanying technique at my command to study lesions of this nature to a greater extent than perhaps falls to the lot of the average surgeon. And the question has naturally arisen in my mind (owing to the fact that the majority of cases which I see are referred ones) how much actual attention the practicing physician pays to these lesions.

Why is it that one man suffers from a chronic infection of his urethra for six months, while another is enabled to throw off the same nature of trouble in four to eight weeks? How comes it that we have a multitude of cases sent us from certain physicians, while others who seemingly conduct their practice in the same manner send us but few? How technically does the average physician or surgeon examine his case and lay out a strict line of treatment with advice as to the conduct, care and diet of his patients?

These questions have been constantly uppermost in my thoughts and have become more prominent in the last few years as the study of the practice has become diversified.

The one disease in which the surgeon is constantly called upon to pass an opinion is that of the chronic gonorrhoeic, and the questions usually put to him by the patient are, the nature of the infection, its severity, and the extent of time which must elapse before a cure can be effected.

In carefully going over the office statistics of the last five hundred cases, which have sought consultation and treatment, it has been impressed upon me that practically all of the patients have passed through the hands of many and varied consultants, without even a history or a treatment being recorded; without an absolute diagnosis of the infecting organisms being made, and without an examination usually of other parts of the body.

There has also been forced upon me the fact that he who suffers from a chronic infection of this nature is a wanderer in the field of medicine, and gets well rather through nature's efforts than at the hands of the doctors, and that the so-called incurable case, if he persists in the treatment laid down after the establishment of an accurate diagnosis, is usually the easiest one in which to bring about relief. How long will the profession at large allow itself to look upon a mild but chronic infection of the urethra as of little importance, and blind itself to the ultimate and sad damage resulting from an uncured case?

How long will our physicians delude themselves into thinking when a patient presents himself in the office with a lesion of this tract, that it requires but some simple or favorite prescription to cure the disease, and neglect the necessity of a carefully stained smear of the urethral secretion, of a urinary culture, and an examination with the microscope of the various constituents of the urine when voided in separate parts; of the invaluable use of the endoscope and cystoscope; of a blood culture now and then; to say nothing of the use by laboratory means of our best friend—the guinea pig—to determine as to a diagnosis and cure? How much longer must we endure the constant traveler who infects his companion, and in turn is reinfected from a new source when all such cases are allowed to pursue their separate paths without legal restraint?

Questions such as these carefully considered at the present time, while the hue and cry of the white slave traffic, sexual hygiene and tuberculosis are being forced upon the public, seem to demand a firmer stand on the part of the medical profession and to require that steps be taken to face problems now brought so squarely before us.

The average patient who comes to his physician suffering from a lesion of the genito-urinary tract, certainly requires and deserves a most careful examination on the part of that practitioner; not alone regarding the anatomy involved, but concerning his general health as well and the various localized points from which a reinfection can easily retard his return to perfect health. The work of Hunner has proven the connection between infections of the tonsils and the urethra in women. He has eradicated certain infections of the urethra after carefully examining the tonsils and submitting them to treatment, having found there organisms similar to those in the urethra. This should open the eyes of our practitioners to the viewpoint that not alone are lesions of this nature to be considered as originating in the parts in question, but that possibly other sources may give rise to the constant irritation which we find in such cases.

The writer has at his hand an excellent laboratory, the Bender Laboratory, with an equipment and force sufficient to render mooted bacteriological questions easy of solving, and in a number of cases cultures taken of the blood, from the teeth, from the nose, and occasionally even from the eyes and ears, have shown the same organisms present in these organs as were found in the parts of the genito-urinary tract suspected as giving rise to the points of reinfection, and when adequate consideration and technical treatment have been given to these sources of reinfection by competent consultants, it has been a matter of great pleasure to find the local manifestations rapidly disappearing and eventually eradicated.

One hitherto undescribed source of reinfection has been ascertained in the lack of care in which the penis is allowed to rest with the meatus

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., May 1, 1913.

unprotected and rubbing over parts of the under-clothing which are constantly in contact with the anus; and many of the colonic infections of the urethral tract which have seemingly been cured, and have given negative results on repeated bacteriological tests, only to reappear later, have ceased in their recurrence when the patient has worn a protective apron, or a bit of cotton constantly at the end of the penis. This measure has obviated the dreaded recurrence of the colon organism after weeks and months of absence.

Too little attention, we believe but unfortunately do not urge, is given to the after-care of the patient, and his duty toward the state and his fellowmen, following a supposed cure; and too often, undoubtedly, do we allow the chronically infected to marry and to transmit the infection to the innocent, and too often do we find the innocent one coming to us having been infected by one who has taken no care of himself or herself or who has been pronounced cured through an irrational measure of diagnosis by some careless physician.

While the physician, through state laws, compels himself and his colleagues to register certain contagious diseases with the local health officer, it seems a curiosity of fate that those who can transmit through contact the vilest diseases, and those most sorrowful in result, should go unwatched, and that there has always been raised a cry against the publishing of results of these diseases, until the last few years have seemed to presage a sweeping away of these curtains of false modesty, and a desire has been aroused to let the truth be known.

Burr, of Chicago, in his article before the Section on Hygiene and Sanitary Science of the A. M. A., in 1906, says:

"The day must come when the suppression of the gonococcus shall rank in sanitary importance with the destruction of the mosquito; when the culture beds of the 'red light district' shall be looked after as carefully as the drainage of stagnant and polluted waters."

Not alone should we work in our societies but as individuals to bring to pass a reasonable law for the inspection of venerites, if at no other time than just previous to marriage.

Such being the case it would now seem to be the place and the time for an organization of physicians, as powerful as is ours, to compel through proper laws so carefully drawn as to make them absolutely sure, a registration with the local health authority or with the State Board of Health, of all cases of this nature, so that when a father wishes to ascertain the health of his young man his daughter is to marry, proper means for obtaining this information may be attained. The efforts of those who have made such attempts in New York City should be encouraged to the limit, notwithstanding the arguments presented against the undertaking. It is a reflection upon us, if we allow the Church to hasten the enactment of such laws while we sit idly by and

see their efforts crowned with success, or fail to do our duty by not holding out a helping hand and thereby see them go down to defeat.

By this means if the punishment were severe enough, each case would eventually be registered, at first by locality, and eventually throughout the whole state, and then later through all the states.

When a law of this sort is to be drafted, consideration and care must also be given to the itinerant drug store practice by prohibiting under heavy penalty the sale of drugs and articles in the treatment of these diseases, save on the prescription of a duly licensed physician.

Some will undoubtedly say that this tends to hasten the millenium in the practice of medicine along certain lines, and in answer to these can we but say that we are trying to limit these diseases in the same manner as attempts are now being made by the labor bureau to limit the so-called occupational disease, by the health bureau to limit tuberculosis, smallpox, bubonic plague and the like.

That we may compel ourselves and all other supposedly enlightened physicians to be more painstaking and accurate in our diagnosis and treatment of these diseases, and to begin a legal as well as a scientific protection of the manhood and womanhood of our state, is the object of this paper, and it has been put forth in the hope that our Society will initiate the means of eventually curtailing such diseases or keeping the infected ones apart from those who are clean.

In conjunction with the paper I wish to present the results of a communication sent to the Attorney General of each state or territory in the Union, whereby I had hoped to gain statistics which might be of value to the Society in any work which was undertaken along this line, and it has been a source of wonderment to me how little attention has been paid on the part of officials of certain states to the questions I have asked.

First, I have sought to ascertain those states which had a marriage law requiring the issuing of a license to one or both parties and on reference to the statistics it will be ascertained that there are some states in the Union which issue a license to one party alone; some only to the bride; and some only to the groom; while a few issue one joint license.

While the more recent laws which have been passed in various states require licenses to be issued incorporating statistics concerning both parties—among these is our own New York state law passed in 1910—few contain questions of practical value to the subject at issue.

A second question which has been asked directly of the legal authorities is as to whether a health certificate was demanded of one or the other party or of both and if so by whom was it furnished?

Iowa, through a recently enacted law passed this last Fall, requires a Health Certificate to be issued to both parties. In this law it states that

a certificate shall be issued by a legally qualified practitioner of human medicine of the State of Iowa, who must certify that either or both parties entering into a marriage contract had been examined by him, or her, within the next preceding 30 days and was found free from mental or physical defect, etc. Section 5 states that no person who has any contagious venereal disease, as syphilis or gonorrhoea, shall be licensed to marry. Section 6 prescribes that a violation of the provisions of this act shall be considered a misdemeanor—punishable by a fine of not more than \$500 nor less than \$100; or imprisonment in the County Jail not to exceed 200 days; or both. Section 7 provides that any physician making examinations under this act, who wilfully aids, and abets the violation of it by knowingly making a false certificate, shall be guilty of a misdemeanor punishable by the revocation of his certificate to practice.

The State of Maine in an act introduced March 20th, 1913, and reported by a majority of the Committee on Medical Affairs and ordered printed in joint rules, contains practically the same provision wherein the health certificate of each party is filed with the clerk, or other official issuing marriage licenses; and that any party who, upon examination is aggrieved by the finding of the physician duly registered and residing in the state, may appeal to the County Medical Examiner of the county in which such party resides commorant. If the decision of the State Medical Examiner is against the party, an appeal may be taken to the Supreme Court by petition stating the facts, which shall be served upon said Medical Examiner 14 days before the same can be entered in court and a hearing demanded. If the judge who hears the case deems that the questions presented are of sufficient importance, he may report the same or any part thereof to the law court to be heard and determined as by law now provided. This act also states that the county attorney of the county having jurisdiction shall appear in behalf of the Medical Examiner, and further that the petition may be entered in court either in term or vacation. A further section requires that the one who issues a marriage license shall return these certificates to the Register of Vital Statistics, and these shall be filed and recorded in his office. While the last section provides the violation of this act knowingly, shall be punishable in practically the same way as in the Iowa requirements.

A third question asked was: Does the health law, defining contagious diseases include gonorrhoea and syphilis? Here again, the State of Iowa has recently passed a bill declaring these two diseases as contagious and infectious diseases and that they shall be reported to the local Board of Health. The means whereby this is done as stated in Section 2, is that after the 1st of January, 1914, every physician and surgeon practicing within the state shall report every case of such a nature coming to his knowledge during

the infectious stage thereof within 24 hours, and that he shall make and keep a record of every such case, numbering each consecutively. The person so reported must state whether or not he has been previously reported to a local board of health in the state, and if so, when, where, by whom, and under what number. The report shall give certain other statistics, including the probable source of the infection, but shall not disclose the name of the infected person. Section 3 defines that any physician or surgeon called upon to treat professionally any one infected with these diseases in the infectious stage, who fails to report the same within the prescribed time, shall be guilty of a misdemeanor, punishable by fine or imprisonment, and the State Board of Health may revoke his license. While Section 4 prescribes that any person afflicted with either of these diseases who shall knowingly transmit, or assume the risk of transmitting the same by intercourse with another person, shall be guilty of a misdemeanor, punishable by fine and imprisonment, and in addition shall be liable to the party injured in damages to be recovered in any court of competent jurisdiction.

The State of Vermont, by its Act No. 217, provides that the local health officer may require under the rules and regulations of the State Board of Health, the isolation of persons and things infected with contagious or infectious diseases, and may, with the approval of the local board of health, provide suitable places for the reception of same, and if necessary, furnish medical care and treatment for such sick person at their expense, if of sufficient ability to pay, otherwise at the expense of the town or city. While Act No. 218 entitled "An Act to Prevent the Spread of Certain Infectious Diseases," requires, in Section 1, that the superintendents, etc., in charge of all public institutions, which are defined, shall immediately report the name and other data concerning any charitable patient under observation, suffering from any venereal disease of any form, and if possible, the date and source of contracting the same. Section 2 provides that physicians shall furnish the same concerning private patients save that the name and address shall not be given. Section 3 provides that such data shall not be accessible by the public, nor shall such records be deemed public records. Section 4 provides that the State Board of Health shall provide at the expense of the state facilities for the free bacteriological examination of discharges for the diagnosis of gonorrhoeal infections, and shall also provide certain medicines at cost for the treatment of the same. While relative to syphilis, the State Board shall make at the expense of the state, the Wassermann test or examine smears, and shall furnish the treatment known as "Salvarsan" or other accredited specific treatment at cost, but such diagnosis and treatment shall not be furnished until the record of data is forthcoming from the physician.

This then is the accomplishment on the part

of the sound-thinking physicians in these states, to bring about an amelioration of the havoc wrought by these diseases.

And once more I ask the time honored and hackneyed question: "Is it not worth while for us to compel our legislators to recognize these facts as they should be presented?"

State of New York.
No. 1860, Int. 1663.
IN ASSEMBLY.
March 12, 1913.

Introduced by Mr. Denny, read once, and referred to the Committee on General Laws.

AN ACT to amend the domestic relations law, in relation to the issuing of marriage licenses.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

1. Section 1, Chapter 19 of the laws of 1909, entitled "An Act relating to the domestic relations law, constituting Chapter 14 of the Consolidated Laws," is

hereby amended by inserting after Section 13 two new sections, to be known as Sections 13-a and 13-b, to read as follows:

13-a. Physician's certificate. No license to marry, referred to in the preceding section, shall be issued except after each party to the contract has presented to the license clerk a certificate from a doctor of medicine duly authorized to practice medicine in the State of New York, stating that said doctor of medicine has examined such applicant for a marriage license, and that said applicant is not afflicted with any venereal disease.

13-b. Procuring or issuing license by fraud a misdemeanor. A person procuring such a license by fraud, false representation or pretense; a doctor of medicine issuing such a certificate knowing the statements therein to be untrue, or without having examined the applicant; a license clerk issuing such a certificate knowing said certificate to be false and untrue or in violation of the provisions of this article; a person solemnizing a marriage knowing that the provisions of this article have not been complied with, is guilty of a misdemeanor.

This act shall take effect immediately.

States.	Does Marriage Law Require Issuing of a License to One or Both Parties?	Is Health Certificate Demanded of One or the Other Party? If So, By Whom Is It Furnished?	Does Health Law Defining Contagious Diseases Include Gonorrhoea and Syphilis?
Alabama	.....	.....	.....
Alaska	.....	.....	.....
Arizona	.....	.....	.....
Arkansas	.....	.....	.....
California	Requires license	No	No special mention
Colorado	Yes	No	No
Connecticut	Yes	No	No
Delaware	Yes	No	No
Florida	.....	.....	.....
Georgia	.....	.....	.....
Idaho	Yes; either party	No law	No
Illinois	Yes; either party	No	No
Indiana	Yes; issued to both	No	.....
Iowa	Yes; issued to both	Yes; both parties	Yes; bill just passed
Kansas	Yes	No	No
Kentucky	.....	.....	.....
Louisiana	.....	.....	.....
Maine	Yes; both parties	Yes; both parties	No
Maryland	Yes; both parties	No	(?)
Massachusetts	Yes	No	No
Michigan	Yes; both parties	No	No
Minnesota	Yes	No	No
Mississippi	Yes; to groom	No	No
Missouri	Yes; to groom, who usually names lady	No	No
Montana	Yes; both parties	No	No
Nebraska	Yes	No	No
Nevada	Yes; either party	No	No
New Jersey	Yes	(?)	(?)
New Hampshire	Yes; both parties	No	No
New Mexico	Yes; both parties	No	No
New York	Yes; both parties	No	No
North Carolina	Yes	No	(?)
North Dakota	Yes	No	No
Ohio	Yes; both parties	No	No
Oklahoma	Yes; jointly	No	Yes
Oregon	Yes; both parties	No	No
Porto Rico	.....	.....	.....
Pennsylvania	.....	.....	.....
Rhode Island	Yes	No	No
South Carolina	.....	.....	.....
South Dakota	Yes; either party	No	No
Tennessee	Yes; naming both	No	No
Texas	Yes	No	No
Utah	Yes; both parties	No	No
Vermont	Yes; to groom	No	Yes
Virginia	Yes; to groom	No	No
Washington	Yes; both parties	No	No
West Virginia	Yes; either party, naming both	No	No
Wisconsin	Yes	No	No
Hawaii	.....	.....	.....
Wyoming	Yes	No	No

Discussion.

DR. HORACE L. LEITER of Syracuse, N. Y., opening the discussion, said: "This paper by Dr. Vander Veer is opportune, coming at a time when several cities of this state are actively engaged in vice crusades. Every means which can further impress the medical profession with the serious aspect of gonorrhoea should be encouraged. Today, it is socially the worst of the venereal plagues, much more far-reaching and dangerous than syphilis.

"The underlying premise of Dr. Vander Veer's paper is essentially—Is the chronic gonorrhoeic ever cured? Many practitioners are still misled by the old Vienna doctrine that true gonorrhoea is incurable. This is both false and absurd. The urethroscope, the clinical course of cases well treated, as well as the complement-fixation test for gonorrhoea fully support my contention.

"As regards registration of cases of gonorrhoea—I disapprove of the registration of cases of gonorrhoea. I can see no good from it, except to collect statistics, and can see much harm from it in keeping patients away from the surgeon, especially those in need of early treatment. The principal source of venereal disease is prostitution and it has been found that the present laws adequately deal with this situation when enforced.

"On the question of compulsory examination of both applicants for the marriage license, I fully agree with Dr. Vander Veer. The majority of sterile and one-child marriages is the result of the union of a woman with a chronic gonorrhoeic who is usually ignorant that he is infectious. The justification of action by the state then is the lowered birth-rate, and for this reason, if for no other, examination should be compulsory before granting a marriage license.

"If we take into consideration the lowered birth-rate from gonorrhoeal sterility, then gonorrhoea is probably the greatest single cause of depopulation of most nations."

DR. E. WOOD RUGGLES, of Rochester, N. Y., said: "Dr. Vander Veer has certainly given us some ideas worthy of more serious consideration than they generally receive.

"I rather hesitate to discuss this paper sincerely since I have just read a paper on 'The Present Obligations of Physicians regarding Syphilis,' and I fear I may be suspected of 'rubbing it in.' I cannot refrain, however, from saying that it is my conviction, arrived at after years of special practice, that the average physician acts toward venereal troubles more like the irregular practitioner than he does in reference to any other class of diseases. I mean that he accepts the patients' fees with little thought as to whether or not he is giving or is able to give 'value received' therefor.

"I believe there is a wide-spread, definite feeling among physicians that these are dirty, disgraceful diseases and that those who contract them have no claim to equitable treatment. It is not an uncommon experience for genito-urin-

ary specialists to have physicians speak to them like this in describing a case: 'Doctor, I know I ought not to treat this man but to turn him over to you, but I can't afford to do it. I need the money.' One of the leading physicians in Rochester told me several years ago, that he had a case which still showed gonococci after nine months of continuous treatment and that he was going to send him to me—for suggestions as to how he could go on with the case.

"Personally I do not regard it as legitimate practice to treat and especially to discharge a cured gonorrhoeic cases without the use of a microscope or to await the development of secondaries in the presence of a suspicious genital lesion, when by the aid of a microscope with dark field attachment most of these cases can be cleared up immediately and syphilis, if present, can be eradicated in a few months in the large majority. The same stand will eventually be taken by the profession at large I believe.

"I heartily agree with Dr. Vander Veer's remarks concerning the necessity of a most careful, painstaking examination of the patient as a whole if one is to cure him of chronic gonorrhoea.

"In my experience it is the prostate which harbors the gonococcus in most cases of chronic gonorrhoea. I was able to demonstrate it in the prostate of a married man whose last infection had occurred nine years previously. Urethral follicles are the next most frequent cause of chronic and relapsing gonorrhoeas and some cases require the patience of Job before they are finally healed. Slitting up these passages, cauterizing them with lunar caustic fused on a fine wire, electrolysis and injection through a minute syringe tip are the most efficacious measures in these cases.

"In regard to the other cases mentioned, where organisms of the same kind as those in the urethra have been found in the blood, mouth, nose and even the eyes and ears, I should judge Dr. Vander Veer referred to non-gonorrhoeal cases of gleet. In any event, however, these observations are most interesting and important.

"His theory regarding re-infection with colon bacilli through the underclothing deserves careful consideration and the protective measures recommended should be employed in all relapsing cases.

"I have often wondered that more women did not get colon bacillus infection and more men acquire urethritis from the vast flora of germs occupying the glans penis. The explanation must be that the urethra is immune to these germs until its vitality is lowered by disease, generally gonorrhoea.

"In regard to Dr. Vander Veer's question why some patients recover from gonorrhoea so easily and quickly while others require months or years, while in a large proportion of cases the difference lies in the treatment, in many it is due to anatomical reasons, to the larger mouths of follicles, the greater patency of the mouths of the

prostatic and ejaculatory ducts and the greater permeability of the mucosa. Patients who have once had gonorrheal rheumatism are very liable to suffer from it at every subsequent attack.

"In regard to legislation I fear my ideas are chaotic. I believe in the examination of candidates for matrimony, if systematic, and carried on without fear or favor. I see no sense in reporting venereal diseases unless names and addresses are given. If this were done, however, it would certainly require some bookkeeping to register three-quarters of the male inhabitants of the state and many of them several times.

"As pointed out by the Harlem Medical Society these records might cause the breaking up of many happy homes, through the circulation of such spicy gossip by some busybody. And it is my experience that the infrequent offender is far the most likely to be punished by venereal disease while the old rounders go scot-free. Then the question arises if these records would be consulted by very many of those who were planning perilous adventures of this kind. The lists would be rather burdensome to carry with one. This whole matter hinges on a very difficult question, *i. e.*, as to just how far legislation should invade personal rights, duties and pleasures.

"We have recently legislated somewhat in Rochester and put the lid on Hill Street. Is there less vice? I doubt it, although there was a temporary slump in gonorrhea cases. The city is surrounded by a cordon of road houses, there is more street walking and I believe more seduction than ever before. To my mind, education is the only means which will diminish irregular sexual indulgence.

"I also believe in instructing patients in prophylaxis, the use of a fountain-pen filler filled with 15 per cent. argyrol solution introduced nearly an inch into the urethra and compressed until the solution emerges at the meatus, to avoid gonorrhea and, in cases of coitus with a prostitute the thorough anointing of the whole member at the same time with an ointment composed of one part calomel to two of vaseline to avoid syphilis. Both of these measures should be carried out within an hour or two, to be most effective."

DR. FRANK F. DOW, of Rochester, N. Y., said: "I wish to protest against the approval by the medical profession of proposed legislation requiring medical certificates of health, so-called, as a necessary prerequisite to marriage. The underlying principle of such legislation is to prevent thereby the evils of infectious and transmissible disease, and the perpetuation of imbeciles and moral perverts.

"It may be said that imbeciles and moral perverts—the product of heredity—come easily and quickly within the scope of custodial and criminal institutions and their future is better entrusted to the experts of such institutions than to the general physician.

"Concerning infectious and contagious diseases communicable by marriage. Tuberculosis transmissible in popular estimation, has been eliminated by common scientific consent. Leprosy is circumscribed geographically and need not be the subject of legislation, except in the localities affected. We have left in the final analysis the so-called venereal diseases.

"Certification against the presence of these diseases by the general physician, presents almost insuperable difficulties, difficulties so great as to make the legal procedure ineffective because impracticable.

"The proposed legislation should be opposed for the following reasons:

"*First.* The medical profession is not in position to afford a scientific basis for such certification.

"*Second.* It is contrary to public policy to enact laws which in the main are incapable of enforcement.

"*Third.* The medical profession should not put itself in a position where it may be tempted to become accessory to evasion.

"*Fourth.* Such legislation involves by implication, the matter of personal morality, and experience has shown that virtue can not be developed by statutory procedure.

"*Fifth.* Such legislation would take from society the elements of chivalry and of romance—elements which form the basis of the great majority of marriages.

"We can not afford to give up the element of heroism even if founded in the imagination. The heroic ideals become the stimuli of conduct.

"The true function of medicine in this matter is that of *education*; we must unite with parents and teachers in the enlightenment of children and of youth. We must afford the reasonable basis for a virtuous life and thus render unnecessary legislation of this character."

DR. VANDER VEER, in closing the discussion, said: "In reply to some of those who criticized the statement made in the paper concerning the present methods of examination of the vast majority of patients; we should be ashamed of our present methods of examination and the too little time given to the study of improved cases.

"Replying to Dr. Leiter's statement that there were laws in sufficiency, and that it would seem to be too much of a work to put in force new laws, our reply should be that our present laws should be enforced, and if necessary, we as a Society, ought to get back of our Legislators and Health Officers with the great power which it is ours to command.

"In reply to Dr. Ruggles' questioning the statement of the cultures of other organs, I would say that these showed, of course, various organisms other than the gonococcus, and that in nearly all cases the patients when they came to me were labeled by their previous physicians as having gonorrhea, though no pathologic evidence

had been attempted to prove this. If we do not call a halt shortly, the church will eventually call us to account for not doing our full duty, and while we may be cutting our own throats in pushing forward preventative medicine, we cannot strike too high in our ideals and should not be apathetic even though we see so many of our brothers prone to disregard the simpler rules of examination.

"In reply to Dr. Dow, that it is a reflection upon the medical profession to ask them to furnish a medical certificate, and that the certificate cannot be honest, I would say that we can, as physicians, be honest and I firmly believe we can compel our more lax brethren to be honest, and can raise the standard of practice at least in this regard to a much higher plane than it is now.

"Relative to his second question regarding a successful family life, and the fact that the Medical Society might mitigate against this, there is only the question that as a profession we freely recognize what has taken place in the life of the present day, and are only groping about seeking light where we may begin. There should be no hesitancy on the part of the true physician to obey duty's call and be registered in the forefront of all attempts to better the morals of the community. The question only lies in the present day attitude of the layman, church and doctor relative to certain practices now extant."

THE WASSERMANN REACTION IN HEREDITARY SYPHILIS, IN CONGENITAL DEFORMITIES AND IN VARIOUS OTHER CONDITIONS IN INFANTS.*

By L. EMMETT HOLT, M.D.,
NEW YORK CITY.

THERE is probably no modern means of diagnosis of greater importance than the Wassermann reaction. This not only enables one to be certain of the existence of syphilis in many doubtful conditions but also to exclude syphilis in many cases where formerly it was suspected. It is the consensus of opinion at present that latent as well as active syphilis gives a positive response to this test. It is also the general belief that children who react positively should receive the benefit of antisyphilitic treatment.

Like all laboratory reactions the Wassermann test is not infallible. Positive reactions may be obtained in certain cases of scarlet fever and in infection with trypanosomes; but neither of these conditions is very likely to be confused with syphilis. Negative reactions may be met with in syphilitic cases as a result of treatment, whether by mercury or salvarsan, and occasionally in other cases for unexplained reasons.

With proper technique the errors are chiefly upon the negative side, but they are not numerous. Errors due to faulty technique must also be taken into account. These are much more common and are almost always on the positive side, so that children tested are pronounced syphilitic when they are not so. It is absolutely essential that the reagents used should be right; that the antigen be good and well tested; and that sheep or human corpuscles be fresh, preferably less than twenty-four hours old, and properly washed. A mistake in technique is the probable explanation of the large percentage of positive reactions obtained in children by some writers. One person with such an experience has indeed recently written to me raising the question whether the Wassermann test can be relied upon in infants. It had been used upon those who were to be placed out for adoption and the number of positive reactions obtained was most disturbing. Under such circumstances doubt should be cast upon the manner in which the test was made, rather upon the value of the test itself.

It was to answer the question as to the frequency of syphilis in the ordinary run of hospital infants as well as in some special conditions, particularly congenital deformities, that a series of observations has been carried on in the Babies' Hospital during the past year and a half.

The Noguchi modification of the Wassermann test has been employed in all of our patients. This has the great advantage, in the case of infants, of requiring much less blood (only $\frac{1}{2}$ of a c.c.) than the Wassermann test. All of these tests, with the exception of the last group of 17 children examined, have been made at the Rockefeller Institute by one of Dr. Noguchi's assistants and under his supervision. I think we may therefore be certain as to the reliability of the technique and the accuracy of the observations.

During the period mentioned, 34 cases of hereditary syphilis were admitted for treatment. In 31 of these, blood tests were made and 30 gave a positive reaction. The single case not responding was in an infant five months old, in whom there was a typical history of syphilis, but the child had been treated regularly with inunctions of mercury for a period of three months before. Previous treatment with mercury does not seem to affect the reaction unless it has been continued for a considerable time and with regularity. For of the 30 patients giving positive reactions, 9 had been treated with mercury as follows: One, an infant six months old, for two weeks; two sisters of four and a half and twenty-two months, irregular treatment with inunctions since birth; one infant of six weeks, inunctions since it was four days old; one child of two and a half years, inunctions irregularly from birth; one infant of seven months, inunctions and mercury internally for one week; one infant of twenty-one months, irregular inunctions and potassium

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 29, 1913.

iodide almost from birth; one child of two and a half years, irregular inunctions from birth. If we adopt the ordinarily accepted view that a positive Wassermann reaction is an indication that the patient is not cured and still requires treatment, it will be evident from the cases just cited how incomplete and how uncertain is the cure of syphilis effected by mercury and potassium iodide.

Of children who were not regarded clinically as syphilitic, 178 were studied. While this number is not large it should be remembered that these cases were selected from about 1,800 hospital admissions and that they include, in the first place, nearly every child in whom even a slight suspicion of syphilis existed. Besides, a considerable number of infants suffering from marasmus or malnutrition without selection were examined, all cases with congenital malformations and a miscellaneous group of various acute and chronic diseases also unselected. Of the 178 tested, 167 gave negative reactions, and 11, positive reactions. The ages of the children were as follows:

	Positive	Negative	Total
Under six months	5	85	90
Six to twelve months	2	33	35
One to two years	3	33	36
Over two years	1	16	17

Positive Cases.—Of 11 children showing no definite clinical evidence of syphilis, but giving a positive reaction, 5 died and came to autopsy. Four of these showed perisphenitis and perihepatitis of sufficient degree to warrant a pathological diagnosis of syphilis. Three of these were marasmus infants. In one of them there could be discovered no family history suggesting syphilis; in one the mother had had three previous miscarriages; in a third there was one previous miscarriage but otherwise a negative family history; in a fourth, the child dying of acute gastro-intestinal intoxication, the parents gave a definite history of syphilis, and the child had general glandular enlargements. In only one case giving a positive reaction which came to autopsy, did the family history, the examination of the patient, or post mortem findings give no suggestion of syphilis.

Of the 6 positive cases which terminated in recovery, 2 were in rachitic infants with moderate enlargement of the liver and spleen; one was a child with spastic diplegia, whose mother gave a positive reaction; one was a case of sclerema, with moderate enlargement of liver and spleen, but with a negative family history; one was a cretin with a negative family history, and one, a child admitted for convulsions of unknown origin. The positive reaction in the infant last mentioned led to tests of both parents but neither responded. There was nothing in this patient's symptoms to suggest syphilis.

We have, therefore, in this group of 11 cases, only 3 in which no evidence of syphilis could be found, either in the family history, the clinical

symptoms or the pathological findings. In the remaining 8 positive cases, the evidence of syphilis was practically conclusive in 5; in the other 3 cases, rickets and enlarged liver and spleen were present.

Negative Cases.—One hundred sixty-seven children gave a negative reaction. In this group, 12 came to autopsy and in none of them were any lesions present suggestive of syphilis. The largest single group were 56 infants with malformations or congenital deformities. Inasmuch as syphilis has been thought to be an etiological factor in certain of these conditions they were made a subject of special study. These cases were as follows:

Spina-bifida	10
Mongolian idiocy	8
Spastic diplegia	6
Congenital cardiac disease	6
Harelip and cleft palate	5
Hydrocephalus	5
Extrophy of the bladder	1
Clubfeet and hands	1
Microcephalus	4
Defective cerebral development	6
Cystic kidney	1
Hygroma of the neck	1
Congenital obliteration of the bile ducts	1
Amaurotic family idiocy	1
Total number of cases	56

The remaining cases were divided as follows:

Marasmus and malnutrition	57
Acute pneumonia	15
Empyema	5
Tuberculosis	7
Rachitis	3
Tumor of the brain	2
Chorea	2
Duodenal ulcer	3
and one each of the following conditions: Pemphigus neonatorum, meningeal hemorrhage, scurvy, leukæmia, diabetes, encephalitis, poliomyelitis, papilloma of the larynx, chronic nephritis, eczema, basilar meningitis, acute arthritis, hernia, convulsions, ulcerative stomatitis, hydrocephalus.—Total, 111 cases.	

From these observations it would appear that syphilis does not play an important part in the production of the common congenital deformities, since in not a single one of 56 consecutive cases studied was a positive reaction found. Again, it has been assumed that syphilis was exceedingly common in the marasmus type of infant admitted to a hospital. I remember many years ago while visiting the marasmus wards of the Blockley Hospital, in Philadelphia, asking of the attending physician who was showing me through the institution, what he did for this class of patients. "We give them all mercury and the iodides, they are all syphilitic," was his reply.

The presence in marasmus patients of enlargement of the liver and spleen and superficial lymph nodes is not sufficient to warrant the diagnosis of probable syphilis. This is so often assumed, that we have made the size of the spleen and liver a subject of special study in all the patients examined. In the 167 negative cases the liver was much enlarged in 12

and palpable in 39 others. In the patients showing much enlargement of the spleen, the liver was almost invariably enlarged also; 7 of the cases showing much hepatic enlargement, and 8 of those showing splenic enlargements were rachitic.

There was general enlargement of the superficial lymph nodes, sufficient to be noted, in 52 cases, or thirty-three per cent., and in 20 of these the swelling was considerable. It is evident, then, that mere swelling of the liver and spleen even when associated is not to be regarded as a very important sign suggestive of syphilis in infants suffering from malnutrition. Both are much more likely to be seen with rickets than with syphilis. Moreover, general swelling of the superficial lymph nodes, whether occurring alone or with swelling of the liver and spleen, has no special significance. The only glandular swellings that do suggest syphilis are those of the epitrochlears when they occur without any peripheral lesion to explain it.

Conclusions.—Cases of hereditary syphilis almost invariably respond positively to the Wassermann test even when previously treated by mercury, unless the treatment has been very thorough and protracted.

After the use of salvarsan it has been our experience that it disappears much more regularly and earlier, but even then in most cases only after repeated injections.

Of 178 tests made in hospital patients showing no definite signs of syphilis, positive reactions were obtained in but 11 and 5 of these were shown upon fuller investigation or subsequent findings to be pretty clearly syphilitic. Three of the remaining 6 were doubtfully so.

The great proportion of congenital deformities have no relation to syphilis since not a single positive reaction was obtained in 56 consecutive cases.

Of 62 patients suffering from malnutrition or marasmus only 5 gave a positive reaction, and are included in the group above mentioned. Of the remaining 57, nearly one-third had very considerable enlargement of the liver or spleen or both. Since the cases examined were selected from a much larger number as those most likely to be syphilitic, we cannot regard syphilis as a common cause of marasmus, certainly in the patients admitted to the Babies' Hospital. Since the error, when one exists, is almost invariably on the positive side, the technique of those who find a very large proportion of positive reactions among marasmus patients in institutions is open to suspicion.

MENORRHAGIA AND METRORRHAGIA —SUGGESTIONS AS TO TREATMENT AND REMARKS ON RECENT CLAIMS FOR RADIO-THERAPY.*

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AS preliminary to this discussion, it is assumed that every woman has a menstrual habit, peculiar to herself, both as to the quantity of blood lost and the time intervening between its re-occurrence. This phenomenon is usually rythmical, but within certain limitations, some variation may occur without passing from the physiologic to the pathologic. By these standards she must be judged.

It is not within scope of this paper to enter upon a differentiation between menstrual and normal blood, nor to discuss the technical or clinical differences between metrorrhagia or menorrhagia. It is also assumed for purposes of diagnosis and treatment that these subjects have received due consideration, and that accidental or co-existing causes for debility and anemia have been given due consideration. In particular, differentiation must be made from the direct anemia due to uterine bleeding, and that arising from other co-existing causes. Again it must be clearly recognized that varying degrees of resistance from loss of blood, either acute or chronic, explain the reason why the health of one woman suffers more quickly than another, and why convalescence is more rapid in one than another. In other words, no woman is to be judged by comparison with any other woman, but by her own individual standard. With such clearly defined notions, the individual case should be studied whereby tenable and safe deductions can be formulated.

Where the 28 day type of menstruation is constitutionally established, variation from such a standard, save for pregnancy, requires careful study. When distinctively due to shock or emotional causes it is not often a matter of moment and recovery is usually spontaneous. The same rule cannot be employed with most other variations from the individual type. It may be stated as a general principal that progressive shortening of the normal menstrual type from 28 days to a shorter period, is of sufficient importance to require investigation, and in particular when the menstrual loss increases in amount. Again those irregularities in which the inter-menstrual period is lengthened, or in which one extreme of fluctuation follows each other, both as to time and quantity, are entitled to thorough differentiation.

No effort will be made to discuss all forms and features of uterine hemorrhage, as it would be outside the scope of this paper. For this rea-

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son the hemorrhages due to miscarriage and at term have not been considered but incidentally.

I shall not encroach upon your time to depict in detail the symptoms dependent upon uterine bleeding, which produce varying degrees of temporary impairment or that leading to confirmed invalidism. The usual pallor, muscular weakness, lack of easy mental application, nervousness often associated with irregular cardiac manifestations, sleeplessness and final exhaustion, complete the picture which is too frequently witnessed and too indelibly stamped on our minds to require repetition. Its approach may be slow or rapid, its history fluctuating, its outcome dependent on wise management and the individual resistance of the patient.

Among the etiologic factors having an anatomic pathologic basis are uterine myoma, degenerative chronic endometritis, peri-uterine inflammations of septic origin, and those incident to miscarriage and subinvolution after term, uterine displacements and varying pelvic adhesions. Those classified under the head of systemic origin, include purpura, malaria, nephritis, those dependent on absence of normal plasticity of the blood, general arterio-sclerosis and high blood pressure from varying causes, and from the exhausting influence of acute and chronic illness. Yet another class, of reflex origin, is seen at puberty, local shock, and those bleedings incident to powerful emotion. The proper management of these cases, both acute and chronic, is hygienic, medical and surgical. The hygienic comes first in importance and is imperative during the entire period of treatment. First efforts should be directed to the removal of all known predisposing or exciting causes, a regular wholesome habit of life, including proper food, exercise, diversion and rest, with as much exercise in the open air as is admissible, and living and sleeping, when indoors, in well ventilated apartments. The diet should be carefully guarded and a properly balanced ration enter into daily menu, avoidance of much tea and coffee, which may be excluded all together, and the use of pure water must be insisted upon. Caution must be continuously exercised against excessive fatigue incidental to physical exercise. The magic of change so often seen by removal from the lowland and seashore to the interior at a greater altitude, and *vice versa* must not be forgotten or neglected. Such want of appreciation deprives many patients of a remedy of great usefulness.

Medical treatment of these cases resolves itself into the employment of those measures which limit uterine bleeding, and restoration from the debility incident to its loss. Absolute bodily rest in the horizontal position with the foot of the bed elevated must be enforced in the presence of serious hemorrhage. Everything which contributes to healthy nutrition, secretion and excretion, must be under careful scrutiny, so that balance of normal function is maintained. In chronic cases, alternate rest and gentle exer-

cise will be dictated by the varying exigencies of the situation.

The drugs are not numerous which exercise a controlling influence on these conditions. Constipation must be overcome by diet as far as practicable, aloe and all vegetable cathartics are hurtful—mild salines, phenolphthalein and olive oil are preferable. Phthalate of cotarnin, opium, hydrastinin and ergot stands out as most useful remedies. Those articles of the materia medica which exercise a controlling influence increasing or diminishing blood pressure have a well-defined, but limited field of usefulness. Cotarnin, known as stypticin, has demonstrated its adaptability in varying forms of hemorrhages both organic and symptomatic. The claim for its efficacy made by different observers, appears in all kinds of hemorrhage, irrespective of fixed anatomic and pathologic lesions, those due to inflammations and resulting degenerations of the uterine mucous membrane, those attending abortion, in myoma, in bleeding from cancer of the uterus, and from disease of the uterine appendages. Apparently its efficacy is not dependent on its power of varying to any perceptible degree the blood pressure, hence its wide adaptability. The dose is from $\frac{1}{2}$ to one grain or more once in four or six hours. Ergot in selected cases has valuable hemostatic properties, but it must be used with discrimination in myoma, and its influence upon the vasomotor system remembered. An old but almost forgotten remedy which has peculiar though limited sphere of usefulness is opium; to be administered with best results an assayed product must be employed or morphin used hypodermically. When other remedies fail it may become the sheet anchor of the patient. When these hemorrhages are associated with nervous perturbation and prostration, its temporary use will often tide the patient over a troublesome crisis, but for a continuous use it is not admissible, save in hopeless cases, or those which are inoperable, or if operable, when surgical interference is refused.

Medical treatment for restoring the blood dyscrasias, and stimulating the vital powers are of great importance. Organic iron in certain cases is very useful, in others inert, and in others injurious. It must be tested in the individual case to determine its adaptability. Diminished coagulability of the blood following its profuse loss is often a matter of grave import. The administration of calcium salts is indicated, if the coagulation time is diminished or it may be corrected by normal human or horse serum used by intravenous injection. Drugs which act as vasomotor constrictions, if used at all, must be administered with great caution. Any introduction of normal salt solution should not be ventured upon in the presence of uterine hemorrhage intravenously during active bleeding; the only exception being of an overwhelming loss of the circulating media.

The claim of remarkable efficiency of pul-

verized aluminum in arresting the hemorrhage dependent on gastric ulcer, might on theoretical grounds be applied to uterine hemorrhages dependent on detached placenta, or other local intra-uterine bleeding from open blood vessels.

Arsenic, if tolerated, is often effective. In cases where there is high nervous tension and reflex excitability, the bromides—particularly strontium—is of great value, and may be advantageously combined with valerian or asafœtida—remedies too often neglected.

Surgical treatment is of the greatest importance in many cases, and too often resorted to too late when it should have been the first remedy employed. The whole group of myomas come under this head. It is not so much their size as their location which demands interference; though in no case should they be allowed to attain any considerable proportions. The variety most productive of hemorrhages is the submucous. To temporize with this class is worse than folly, and delay may be fatal. Early hysterectomy should be resorted to before the state of exhaustion supervenes, save in cases where enucleation is indicated. Wisely done the mortality is small. Myomectomy in circumscribed subperitoneal myomas has a limited field of usefulness. The degenerative changes of the endometrium from varying causes requires early curettage, sometimes repeated. Hemorrhages persistent in appearance—following labor or miscarriage associated with subinvolution, require careful management. Uterine displacements, particularly retrodisplacements, require correction, and the mischievous influences of adhesive lesions of the uterus and adnexa must not be neglected; while salpingitis is a fruitful cause of troublesome hemorrhages. Uterine polypi, undiscovered usually because unlooked for, have played an important role in the factors which make for invalidism. Recently I operated upon a case of fibroid polypus, the size of a hen's egg, which had been extruded through the cervix, in which the exhaustion of the patient nearly proved fatal. Convalescence quickly followed. Tamponade in uterine hemorrhages has its uses. In sudden emergencies, intra-uterine injections of hot sterilized vinegar, found in almost every home, proves of signal value. When the uterus is not greatly enlarged, with normal mobility, the pushing it up as far as possible and retaining it there by tamponade of the vagina, produces a flexion of blood vessels supplying this organ and acts as a powerful hemostatic. Experience demonstrates that many of the intractable hemorrhages are amenable to surgical interference only, and from this cause springs most of the avoidable cases of chronic invalidism which should never had appeared. In the ulceration attending malignant disease of the cervix, the thermocautery repeated as often as indicated, is a palliative remedy of conspicuous and unequalled value. As local styptics, dilute acetic acid and acetone, are among the best.

Followed by persistent use of radium this treatment combined or alternated, accomplishes results unapproached by any other medical or surgical treatment, with which I am familiar. Failure to rightfully apply radium I am persuaded is responsible for many of these failures. To secure the best results, it should be used on alternate days from fifteen minutes to six or twelve hours, according to its degree of radioactivity. Disappearance of hemorrhage, healing more or less complete, subsidence of cachexia, and return to more normal conditions of health have attended their combined or alternate use. I have not employed radium in non-malignant hemorrhages, but information is not wanting to its efficacy.

No time is so opportune for treatment as in the incipency of uterine hemorrhage. Appearing at or near the climacteric it is often ignored with the assurance of the medical advisor that it is only the change of life, and that nature is competent to a safe termination, or the case is declared inoperable and with this assurance, further remedial measures are abandoned. The role which uterine cancer plays in cases of metrorrhagia is worthy of notice, as related to its great frequency. A known fact disclosed by the last census shows that one woman in every fourteen dies of cancer, and above the age of 45 the ratio is one to nine. It therefore follows that the possibilities are large that in a given case over 35 years the disease is malignant.

An infrequent and puzzling form of uterine hemorrhage is found in deciduoma-maligna. When its presence is established by laboratory diagnosis prompt hysterectomy is indicated. One other cause of menorrhagia is arterio-sclerosis of the uterus. At the best its diagnosis is difficult and that by exclusion. During the present year Dr. Victor A. Robertson reported to the Brooklyn Gynecological Society its presence in an unmarried woman near the menopause. The laboratory findings were full and conclusive. The patient recovered.

Radical change in the treatment of hemorrhages dependent on myomata is seeking to replace present method. In Germany and at other continental clinics the treatment of these persistent hemorrhages due to myomata and those in which pathologic conditions are lacking or are not pronounced, remarkable curative results are claimed to attend the use of the X-ray.

A work by Gauss and Lembecke: "Roentgen-tiefentherapie" (Deep X-ray-therapy). Its theoretical principles and its clinical results. Berlin & Vienna, 1912.

The book gives an account of the work with the X-ray on myomata, large and small, myomatous slightly enlarged hard uteri, and metropathia hemorrhagica, in which no pathological findings were discoverable with the curette, and two or three suspicious carcinoma like conditions during the period of several years, with account of 205 cases treated. The increase of

deep radiotherapy, by separating the soft from the hard rays leads to greater efficacy and safety. With proper filtration the decrease in the injury to the skin goes hand in hand with its therapeutic influence on deeper structures. The Roentgen therapy, formerly primitive, now built up in detail, is placed in competition with the operative treatment in cases of myoma and metropathia. Patients whose strength has been much reduced by repeated and continued hemorrhages are especially adapted to this treatment, and by it the mortality of the myoma operation is greatly reduced. Operation requires 6 to 7 weeks to restore to sufficient health and strength to go back to work. Roentgen therapy requires 8 weeks lapse of time while being treated, but does not keep patient from work on days between treatments—when strongest operatives and filters are used the reactions before previously noticed are not seen. Emphasis is given to the fact that diagnosis requires complex rays—therapy homogeneous rays. The end results with intensive therapy—appeared oftener and more quietly, and were more lasting, *i. e.*, among the 102 patients treated in the last year and a half by this method there were no failures. The time consumed by the old method without filter averaged five treatments in eleven weeks (with aluminium filter 3 sittings in six weeks). Shrinkage of the myoma, much doubted by many, was so obvious that not only the physician but the patient observed it. Out of 36 myomas examined 99 months after treatment, 20 had disappeared.

The general feelings of the patient suffered little during the intensive therapy. One can hardly speak of an inordinate demand on her strength; many patients read, others often go to sleep during the treatment. (I have repeatedly witnessed this sedative influence from which the patient irresistibly went to sleep and awoke refreshed.) Reaction from this treatment (Katzertjammer) consists when present of headache, backache or nausea; and is most apparent in large doses. At the worst it is not comparable with the painful symptoms accompanying operation. Symptoms of the menopause which indicate approach of the cure are less persistent than after operation. The crowning superiority of intensive therapy is an alleged smooth convalescence, obvious to the patient and the attendant. It will be noticed that in hysterectomy for myomas the cure is dependent on the removal of diseased structure—by the Roentgen therapy the pathologic bleeding is overcome, sometimes attended with diminution of the myomatous growth, but not necessarily dependent on its disappearance.

Werner regards the action of the X-ray as an influence on the chemistry of the body cell. He expresses the belief that its chief attack will probably be the ovaries though their exact location may not be known.

There can be no question of the intensive in-

fluence of the X-ray on the function of the ovary, and if carried beyond a certain point results in sterility. My associate, Dr. Shoop, reports treating a case of metrorrhagia near the menopause in which 19 sittings of an average of 22 minutes each, menstruation disappeared. Analogous to this is the well recognized influence on the male whereby raying the testes induces sterility.

The potency of Roentgen therapy as seen by its usefulness when wisely applied seems to promise valuable therapeutic results. Those methods whereby the X-ray has been robbed of its deleterious influences arises from separation of its hard and soft qualities, with accurate knowledge of their useful and hurtful qualities, have been accomplished by improved tubes and careful filtration of which aluminum and leather are of conspicuous value. How much influence this will have on American practice remains to be seen.

There is another feature of the Frieberg clinic to which I decree to allude briefly, viz, the cross fire principle. The tube is placed on the right and left side of the abdomen at an appropriate oblique angle, also through the vagina and ischiotic foramen before which the ovary often lies. The skin of the abdomen is divided into fields so that the direction of the ray will reach both the ovary and the tumor itself; and the secondary rays as shown may act on the ovaries.

I desire to express my obligation and to express my appreciation to the monographic review from *Surgery, Gynecology and Obstetrics*, from which I have quoted freely, and to the translation of the text from Gauss and Lembecke by Dr. Fred J. Shoop, and to his painstaking observation which seem confirmatory of the teachings of "Roentgentiefentherapie."

In conclusion I beg to say that in this brief review I have endeavored to give the views of some German authorities a fair and unprejudiced consideration and while I never was an enthusiast on electrical-therapy, I am convinced by these statements and some personal experience and observations it is worthy of trial, but whether it will supercede hysterectomy, the mortality of which is small, time and experience alone can determine.

VINCENT'S ANGINA.*

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IN spite of several excellent articles on Vincent's angina which have recently appeared in medical literature, the majority of practitioners and many laryngologists fail to recognize this disease. The reason lies in the well-

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night universal practice of making the bacteriological diagnosis from the examination of a culture without the aid of a smear. The bacilli and spirilla of Vincent do not grow on the ordinary culture media, hence Vincent's angina cannot be diagnosed unless a smear is made.

These organisms, the fusiform bacillus and spirillum, now generally known by the name of Vincent, were first described by Rauchaufus¹ in 1893, in cases of ulcero-membranous angina. In the same year Babes² described the occurrence of these same organisms in the gums in scurvy. Plaut³ in 1894 described five cases of ulcerative angina. In 1896, Vincent⁴ described cases of hospital gangrene associated with the spirillum and fusiform bacillus, and stated that these organisms were also found in ulcerous angina. In 1898, Vincent reported fourteen more cases. In 1897, Bernheim⁵ reported a series of thirty cases of stomatitis and angina characterized by the occurrence of the same organisms. In this country, Emil Mayer,⁶ Berkeley,⁷ Arrowsmith,⁸ Halsted,⁹ Holm,¹⁰ Oertel,¹¹ and others, have contributed excellent papers on this subject.

Vincent's spirilla and bacilli, in addition to being present in angina and cases of stomatitis, have been found in mastoiditis (Yates¹²), in chronic suppurative otitis media and meningitis (Held¹³), and in abscesses of the lung, liver, and spleen by Schmorl¹⁴. They have also been identified in a tonsillar abscess by Plaut. Arrowsmith found them in the larynx. They are present about the pulp of carious teeth and are often found in the crypts of diseased tonsils.

Bacteriology.—According to Holm,¹⁰ "the spirilla and fusiform bacilli have been regarded by most writers as two distinct organisms." "Recently Ruth Tunnicliffe's studies have apparently proved that the two are different forms of the same organism." "The organism is extremely polymorphous and presents many intermediate forms between the typical spirillum and the fusiform bacillus." "It stains fairly well with the common stains, and is usually said to stain best with carbol fuchsin." "The spirilla are very easily decolorized by Gram's method; the bacilli give up their color less easily." "The fusiform bacilli may be readily differentiated from diphtheria bacilli by Gram's method of staining."

According to Berkeley,⁷ the spirillum and bacillus of Vincent, like the diphtheria bacillus, micrococcus lanceolatus, and other organisms, occur as saprophytes in the mouth in health.

The number of cases of Vincent's angina encountered in the course of a year depends to a great extent on whether the physician is on the look-out for this particular disease. In one of the large institutions of New York City, the last annual report mentions over 7,000 cases of diseases of the pharynx and naso-pharynx treated in 1912, with but three cases of Vincent's

angina. This looks like carelessness on the part of the examining physicians. Holm,¹⁰ the bacteriologist of the Michigan State Board of Health, reports the examination by culture and smear of 265 cases of suspected diphtheria, which I shall report in detail:

The diphtheria bacillus was found 118 times.

The bacillus fusiformis was found 73 times.

Thirty-three patients were males; forty, females. The lowest age was two years; the greatest age, 55 years; the average age was 18 years. All but four cases had a membrane which involved both tonsils in 38 cases and one tonsil in 31 cases. In 15 cases the membrane extended to adjacent structures. The color of the membrane was described as gray or grayish in the majority of instances.

Of Holm's entire series of 265 cases, the diagnosis of diphtheria was made on clinical grounds in 99 cases. The bacteriological report of these 99 cases showed *B. diphtheria* present in 64 cases, absent in 35 cases. These 35 cases of pseudo diphtheria showed *B. fusiformis* 27 times. Of the 73 cases showing *B. fusiformis*, diphtheria was diagnosed clinically 28 times. As a matter of fact, in only one of these 28 cases was the diphtheria bacillus present. In the other 27 cases the diphtheria bacillus was absent. These figures emphasize the similarity, clinically, of Vincent's angina and diphtheria.

Etiology.—Lowered bodily resistance, diseased tonsils, teeth, and gums act as predisposing factors in the production of Vincent's angina. The exciting cause is the fusiform bacillus and spirillum of Vincent, which are found in almost pure culture at the height of the disease.

Vincent's angina is usually regarded as mildly contagious. Mulholland¹⁵ reported 24 cases occurring in one ward of the New York Foundling Hospital, in children under five years of age. He concluded that the disease is fairly contagious in young children, and that its communicability is favored by institutional life. Curiously enough, none of the nurses who attended the children contracted the disease.

Pathology.—The membrane of Vincent's angina is a pseudo membrane, due to necrosis of the superficial layers of the epithelium (Ballengier¹⁶). This membrane is usually gray or grayish white. If the membrane is removed, an ulcerated spot is seen, which bleeds easily when touched with the cotton applicator.

Vincent's angina may be associated with diphtheria and syphilis, and is often accompanied by stomatitis. In February, 1913, Dr. F. E. Sondern¹⁷ read a preliminary report before the Section on Medicine of the New York Academy of Medicine, entitled "Blood Changes in Vincent's Angina." Dr. Sondern kindly sent me a copy of this paper, dealing with the blood changes observed in seven cases of Vincent's

angina. In five of these cases the characteristics noted were: "A pronounced relative lymphocytosis on differential count, resembling that of a chronic lymphatic leukemia without the leucocytosis usual in that disease." In the first case, he has records of previous blood examinations which showed normal findings up to seventeen days before the onset of the Vincent's angina. On the third day of the disease the blood count in this first case was as follows: Red blood cells, 4,800,000; white blood cells, 12,800; hemoglobin, 66 per cent.; small lymphocytes, 69.9 per cent.; large lymphocytes, 23.2 per cent.; polynuclears, 6.9 per cent.

Two of Sondern's cases started as cases of Vincent's angina, showing the usual throat lesion and the same relative lymphocytosis without leucocytosis. The condition of these two patients gradually became worse, and the blood picture gradually became that of acute leukemia, from which both patients died. In neither patient, however, did the leucocyte count become very high (32,000 and 49,000). Sondern concludes from these cases that there must be at least a suspicion of a possible relationship between Vincent's angina and lymphatic leukemia.

Unfortunately, my own cases were observed before Sondern's report, so I have not yet had an opportunity of verifying these blood findings personally.

Symptoms.—There are two types of cases: First, the mild, or tonsillar type, and second, the severe cases where the membrane extends to extratonsillar structures.

In the mild cases, the patient, usually a young adult, complains of chilly sensations—rarely, a chill—at the onset, pain in the tonsillar region on swallowing, perhaps general malaise, and slight fever, 99 or 99.5 degrees F. The sub-maxillary or cervical glands on the affected side are usually enlarged. These mild cases react readily to local treatment and usually disappear in from one to two weeks.

The picture here shown (Fig. 1) shows the throat lesion in a patient with a characteristic history.

Joseph D., single, 21 years of age. Twenty-one days ago began to suffer from pain in the left side of his throat on swallowing. He also noticed swelling of the neck on the affected side, and has been slightly feverish. On examination, the upper two-thirds of the left tonsil was found to be the site of a grayish-white membrane, which upon removal showed an eroded area. A smear demonstrated typical fusiform bacilli and spirilla of Vincent in immense numbers. The lesion yielded to local applications of 10 per cent. silver nitrate in about ten days. About six weeks later the same patient returned to Dr. Chappell's clinic at the Manhattan Eye, Ear and Throat Hospital with a small patch on the

right tonsil (Fig. 2). Bacteriological examination again showed Vincent's organisms. The left tonsil, the one first attacked, was normal.



FIGURE 1.



FIGURE 2.

As I wished to try the effect of salvarsan in this disease, the patient was given a full dose of this drug, intravenously, and local treatment was withheld. The lesion promptly healed.

The severe cases of Vincent's angina are accompanied by extensive lesions, often involving

one or both tonsils, the pharynx, uvula, and soft palate. The breath is very fetid, the pain and prostration extreme. The temperature, though generally said to remain fairly low, sometimes reaches 105 degrees F. (case observed by Rolleston²²). Reiche,²¹ in a study of 27 cases of Vincent's angina, found the spleen easily palpable in two cases. In six instances it was greatly enlarged. In three patients, traces of albumin were found in the urine. In five cases examined for acetonuria, it was found twice.

A number of fatal cases of Vincent's angina have been reported. Our secretary, Dr. Halsted, has recently reported two fatal cases in the *Laryngoscope*. Stocklin²³ reports a fatal case in a female twenty-two years old, who died from an acute fulminating attack. Bruce¹⁸ also reports two fatal cases. One, an eight year old boy with an ulcerous angina of the left tonsil, which spread over the entire pharynx. This patient died on the eighth day of the disease. In Bruce's second case, the necrosis extended beyond the thyroid cartilages of the larynx and the child succumbed to broncho-pneumonia. Von Ellerman¹⁹ and Eichmeyer²⁰ report severe cases with gangrenous lesions in the mouth, associated with septic complications which were the cause of death. F. Reiche²¹ reports a case occurring in a boy nine years old, with a pseudo membrane on the tonsils and tonsillar pillars, which resulted fatally on the twenty-seventh day of the disease, death being due to myocarditis.

Differential Diagnosis.—Vincent's angina must be distinguished from diphtheria, syphilitic ulcerations, and streptococcus anginas. The resemblance to these lesions is often striking. The only sure way to differentiate is to make a careful bacteriological examination by both smear and culture. If necessary, a Wassermann test should also be made.

Halsted has called attention to the fact that the deep ulcerations occurring after scarlet fever and diphtheria, due to Vincent's bacillus, are often erroneously supposed to be due to the Klebs-Loeffler bacillus or streptococcus which caused the original disease.

The *prognosis* as to speedy recovery is excellent in the tonsillar cases, which usually clear up in from ten days to two weeks. When unilateral, the disease is apt to recur on the opposite tonsil. Recurrence took place in two of the four cases the writer treated during the past year.

In the severe type, the prognosis should be very guarded, as many of these cases show but little improvement with the remedies at our command. Some, as we have noted, even result fatally.

The prophylactic treatment of Vincent's angina embraces care and attention to the condition of the teeth, gums, mouth and tonsils. In the actual treatment of the throat lesion, various antiseptics have been used, such as hydrogen peroxide, tincture of iodine, Lugol's solution, ap-

plications of silver nitrate, chromic acid, etc. Orthoform tablets are useful in alleviating the dysphagia. Recently, salvarsan has been used, both locally and intravenously, the theory being that Vincent's angina is a spirillum disease. In the one case where the writer administered salvarsan, the lesion promptly healed. However, this case was such a mild one that it is difficult to judge how much good was accomplished by Ehrlich's compound. Perhaps in the near future, some of the members of this section will have opportunities to thoroughly test the efficacy of salvarsan in this disease.

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Discussion.

DR. T. H. HALSTED, of Syracuse, said: "This disease is a comparatively common one, the speaker having seen and diagnosed about forty cases, and is confident of having seen, but failed to diagnose many other cases, in years prior to seven of eight years ago. The diagnosis is easily made if one is alert to the disease. There are two

distinct types, one resembling syphilitic lesions of the mouth and throat, the other the pseudo-membranous lesions of diphtheria or streptococcus. Positive diagnosis is made by the bacteriologist but a smear taken from under the pseudo-membrane is necessary as the bacillus does not grow on the ordinary culture media, consequently they are frequently overlooked by the bacteriologist. The speaker reported recently (*Laryngoscope*, December) two fatal cases. In the majority of cases, there are no constitutional symptoms; local symptoms, such as pain in swallowing, at times odor, are the most prominent. This is so in the cases of syphilitic type. Treatment in the ambulatory cases is generally quite satisfactory through local means, the speaker getting good results through the local application first of hydrogen peroxide to cleanse the ulcer, then a 10 per cent. solution of cocaine followed in a few minutes by trichloroacetic acid. This is repeated in two or three days. A few treatments usually suffice. In the severe cases resembling diphtheria, the speaker would use salvarsan as called attention to by Dr. Cocks and with the hope that it may be as efficacious against the spirochete of this disease as it is against that of syphilis."

DR. N. D. McDOWELL, of Rochester, said: "The discussion of this disease is important particularly because it is so liable to be mistaken for diphtheria or syphilis. I feel sure that some cases are diagnosed diphtheria which the smear would show to be Vincent's Angina. I have the impression that the disease is rare here in Rochester, since during the past ten years I have seen only two cases which I think were due to this infection."

DR. WILLIAM A. GROAT, of Syracuse: "I can add nothing to this discussion from the standpoint of the laryngologist but from clinical laboratory experience I am convinced that this condition is frequently overlooked. I do not believe, however, that it is a widely prevalent disease. I wish to endorse the remarks of Dr. Halsted regarding the obtaining of the specimen for smear examination. This organism does not grow in the presence of oxygen and therefore if the smear is made from the superficial necrotic tissue it is likely it will not be found. A curettage of the fresh ulcerating deep layer is necessary.

"I do not believe this infection is the cause of acute lymphatic leukæmia. This latter disease is a rare, universally fatal one, and one of the classical symptoms is ulceration in the mouth, usually on the buccal mucous membrane, about the teeth or lips frequently, and rarely in the nose. However, a few cases without ulceration have been observed. I have had the opportunity of studying a number of cases of acute leukæmia and it is easy to understand how the Vincent's organism might proliferate in these ulcerating necrotic areas. This is borne out by the established fact

that Vincent's organism is found not infrequently in cases of diphtheria and other oral infections and even in the mouths of healthy people, but not as the predominating over-growing micro-organism in such conditions.

"Other cases of acute leukæmia without leukocytosis have been observed and reported, one by myself, so that a low leukocyte count with the blood picture of leukæmia in the differential count adds nothing in this connection."

DR. COCKS, in closing the discussion said: "In answer to the question about the degree of prostration observed in Vincent's Angina it varied in the two types, the mild and the severe.

"Dr. Theisen has just described an example of the latter type. In the mild type, of which the speaker treated four, the local symptoms were mild, and the constitutional symptoms almost nihil, there being slight dysphagia, swelling of the glands of the neck, etc. Often the lesion is discovered accidentally."

THE PHYSIOLOGY OF THE HYPOPHYSIS CEREBRI.*

By SUTHERLAND SIMPSON, D.Sc.,
M.D. (Edin.),
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IN 1886, Marie¹ described a hitherto unrecognized disease which he named acromegaly, and which he found to be associated with pathological changes in the hypophysis cerebri. Since that time this organ has attracted the attention of many workers in all countries and much light has been thrown on both its structure and function, but in many respects the latter, particularly, is still obscure. In the short time at my disposal it will not be possible to give more than a very brief outline of some of the more important steps by which we have advanced to our present knowledge of the subject.

COMPARATIVE ANATOMY.

In an important contribution to the comparative anatomy and histology of the pituitary, Herring² recognizes, in the mammalian gland, three types. In the first type, *e. g.*, cat, the posterior lobe is hollow and its cavity communicates with the third ventricle of the brain. It is almost completely surrounded by the pars intermedia of the epithelial portion, the cells of which invade the tissue of the nervous portion to a considerable extent, rendering a separation of the two practically impossible. In the second type, *e. g.*, the dog, the body of the posterior lobe is solid, but the neck is hollow and communicates with the third ventricle; the pars nervosa is here again almost completely surrounded by epithelium. In

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

the third type, *e. g.*, man, monkey, ox, pig, and rabbit, the body and neck of the posterior lobe are solid, although traces of a cavity are occasionally found in the neck; in this type the epithelium does not invest the nervous portion so completely, but is aggregated around the neck and spreads over and into the adjacent surface of the brain.

The epithelial or glandular portion of the pituitary body is made up of two distinct parts: the anterior lobe proper, and the pars intermedia which invests the pars nervosa, the two together forming the posterior lobe. The cells of the anterior lobe are arranged in solid columns, between which run wide and thin-walled sinusoidal blood channels; they are of two varieties—chromophile and chromophobe, the former containing deeply staining granules in their protoplasm. The pars intermedia is composed of finely granular cells arranged in layers closely applied to the nervous portion of the posterior lobe which consists of neuroglia and ependyma cells.

Herring believes that the posterior lobe forms a true brain gland, the colloid material, produced by the cells of the pars intermedia, passing through the nervous portion and escaping into the third ventricle, where it mingles with the cerebro-spinal fluid. The pituitary body may therefore be regarded as a gland that furnishes an external secretion produced by the pars intermedia, and also an internal secretion formed by the cells of the pars anterior and passing directly into the blood vessels.

FUNCTIONS OF POSTERIOR LOBE.

Oliver and Schäfer,³ in 1895, found that watery or saline extracts of the whole gland, when injected intravenously, produced a rise in the general blood pressure comparable to that obtained from suprarenal extracts, although not so great. They proved that the effect is brought about by an action on the peripheral vessels, as in the case of the suprarenals.

In 1898, Howell⁴ separated the gland into its two lobes—anterior and posterior—and made extracts of each. He found that the pressor effect was obtainable only from the posterior lobe, the anterior lobe extract being physiologically inactive. There was also a slowing of the heart rate, and both this and the rise in blood pressure lasted a considerable time. In addition to this he found that if a second dose is injected within half an hour or more of the first there is no rise in blood pressure; some sort of immunity to the pressor substance seems to be established which passes off slowly.

In 1899, Schäfer and Vincent⁵ repeated the experiments of Howell and confirmed his results. They found, however, that the slowing of the heart did not always follow, but that when it did occur it was not abolished by cutting the vagi or giving atropine, thus proving that its cause

was not central but peripheral. On injecting a second dose some time after the first they not only obtained no rise in blood pressure but invariably a fall, and they were successful in separating from the posterior lobe extract the depressor substance which produced this effect.

Pituitary extract has a stimulating action on other forms of plain muscle besides that of the blood-vessels. Cramer⁶ found that extracts of the posterior lobe of the pituitary of the ox produced a distinct dilatation of the pupil of the enucleated frog's eye. The action of a solution of adrenalin, 1 in 10,000, was more rapid but it did not last so long. Dale⁷ observed that infundibular extract caused powerful contractions of the uterine muscle, and this property has led to its use in obstetrical practice, notably in cases of post-partum hæmorrhage. Bell and Hick⁸ have recorded a similar action on the muscle of the intestine; the normal peristaltic movements are markedly accentuated after its application. Dale⁹ believes that it acts directly on the muscle itself and not through the sympathetic nerve endings, in this respect differing from adrenal extract.

In 1901, Magnus and Schäfer¹⁰ observed that the extract, injected intravenously in dogs, led to increased secretion of urine, and Schäfer and Herring,¹¹ pursuing the subject further, found that the watery extract of the posterior lobe has a specific action on the renal blood-vessels and kidney cells; for while it increases the arterial tonus in the other organs of the body it leads to dilatation of the kidney vessels. They concluded that the diuresis is not due entirely to the increased blood supply of the kidney, since, under certain conditions, where there is no dilatation of the renal vessels the increased flow of urine takes place just the same.

In 1910, Ott and Scott,¹² using goats, and later Schäfer and Mackenzie,¹³ experimenting with cats and dogs, determined that the posterior lobe of the pituitary contains a substance which acts as a powerful galactagogue when the extract is injected intravenously. It would appear, however, from more recent investigations by Gavin¹⁴ on the cow, and by Schäfer¹⁵ on the human subject, that the administration of pituitary substance by the mouth, or by subcutaneous injection, or intravenously, during the period of lactation, does not increase the total quantity of milk produced in the twenty-four hours, nor does it affect its quality.

Intravenous injection of extracts of the posterior lobe would seem then to produce at least four distinct physiological effects—vaso-constriction in the systemic circulation generally with the exception of the kidney, where the usual result is vaso-dilatation; under certain conditions, general vaso-dilatation; increased secretion of urine; increased secretion of milk. Whether each of these actions is due to a distinct and separate hormone is not certainly known,

but there is a good deal of evidence in favor of such a view.

A depressor substance was separated from the extract by Schäfer, and he also believes that the diuresis is produced by one substance and the dilatation of the renal vessels by another. Cramer's observations tend to show that the substance which acts on the pupil is not identical with that which stimulates renal activity. Recent work by Herring¹⁸ would seem to show that the mammary hormone also is a distinct substance, not identical with any of the other active principles of the posterior lobe, since he finds that the pituitary extract of the skate, while it has no effect on blood pressure, kidney volume or urinary secretion, does excite the mammary gland.

With regard to the question as to where in the organ these active substances are formed there is much difference of opinion, but the views held by Herring are probably the most acceptable. He believes that the epithelial cells of the pars intermedia furnish a secretion (or secretions) which passes into the pars nervosa, and after modification or elaboration, possibly, is stored there. "The subsequent disposal of this material may be accounted for in two ways—it may be absorbed by the blood-vessels, and it may pass directly into the third ventricle and mingle with the cerebro-spinal fluid. The nervous lobe is comparatively poorly supplied with blood-vessels, in its interior at least, but large and numerous vessels closely invest it. The granular material is often more pronounced around the capillaries in the lobe, and it is quite probable that the blood-vessels receive some of it. As regards the likelihood of any secretion passing into the cerebro-spinal fluid, it will be seen from the figures how closely related the nervous lobe is, in all cases, to the third ventricle of the brain. The tubular character of the lobe in the avine pituitary, and the compound tubular structure of the reptilian pars nervosa are especially suggestive of such a view. In these pituitaries, too, it is usual to find much granular debris, and even actual cells lying free in the lumen. That epithelial cells do, under certain conditions, pass through the pars nervosa into the cerebro-spinal fluid is undoubtedly the case in the mammalian pituitary."

Great caution must be exercised, however, in interpreting the results obtained by the intravenous injection of any glandular extract. Although several active substances may be present in the pituitary extract it does not necessarily follow that these same substances are being continuously or intermittently produced by the gland in the living body and passed into the circulation. Before we can be certain that these substances are formed in the living organ, we must find indications of their presence in the blood or lymph as it leaves the gland, or in the cerebro-spinal fluid. Cushing and Goetsch¹⁷ claim that

the active principles are to be found in the cerebro-spinal fluid, both in man and the lower animals, for when this is slightly concentrated and injected intravenously, effects similar to those which follow injections of the extract are obtained. This, however, has been questioned by Carlson and Martin.¹⁸

FUNCTIONS OF ANTERIOR LOBE.

It is generally agreed that extracts of the anterior lobe are physiologically inactive, so that no evidence bearing on the functions of this part of the pituitary can be obtained by the method of intravenous injection.

In an extensive series of extirpation experiments Paulesco,¹⁹ and later Cushing and his co-workers,²⁰ found that complete removal of the gland resulted invariably in death, usually within from three to five days after the operation. They were also able to show that it is the anterior rather than the posterior lobe which is essential to life, since removal of the latter alone, including the pars intermedia, leads to no definite symptoms and is not fatal. Dogs were employed in these experimental extirpations.

In partial hypophysectomies (a fragment of anterior lobe was left behind) a train of symptoms followed which, according to Cushing, simulated closely some of the clinical syndromes observed in man. There was general adiposity, "nutritional changes in the skin and its appendages, disturbance of carbohydrate metabolism, of body temperature, of growth and of renal secretion. Sexual inactivity, or actual atrophy of the reproductive glands was observed; and indeed modifications in most of the other ductless glands proved to be histologically demonstrable." Mental dullness, often accompanied by irritability, was observed in a number of the animals.

According to Schäfer²¹ the addition of small quantities of pituitary substance to the food of young rats appeared to favor their growth, as compared with control animals of the same litter. Sandri²² fed young rats on anterior lobe alone (small amounts mixed with their ordinary food) with entirely negative results, whereas feeding with posterior lobe arrested their development. The results of Goetsch and Cushing²³ with young dogs were also largely negative. Schäfer found that posterior lobe feeding led to an increase in the amount of urine secreted.

Changes in metabolism, as the result of pituitary feeding, have been recorded by several observers. Malcolm,²⁴ using the dried and fresh glands of the ox on the dog, found that the glandular portion, in the dried form, caused a slight retention of nitrogen, and the dried nervous portion had a similar effect. The fresh gland, in large doses, had an opposite effect and increased the output of nitrogen.

The glandular portion caused a retention of phosphorus, while the nervous portion caused a loss followed by a retention.

Using the dried gland, both the anterior and the posterior lobes gave an increased output of calcium (on a calcium-rich diet), but while the excretion of calcium in the former case was accompanied by increased output of magnesium, the latter was not so accompanied; this points to the nervous portion as having a katabolizing influence on bony tissue. Fresh gland substance gave no increased calcium output but showed a tendency rather in the opposite direction.

In the case of nitrogen and calcium the fresh gland has an opposite effect to that of the dried, pointing to the probable existence of more than one active substance.

According to Exner the transplantation of additional pituitaries into an animal leads to an increase in weight which is due partly to increased growth of bone and partly to the accumulation of fat.

The pathological changes in the pituitary, associated with the condition of acromegaly, has thrown some light on the functions of the organ. These changes are believed to be the primary cause of the disease.

Marie, who first described the condition, held the view that the symptoms were due to a destruction of the organ, that is, to a total suppression of its functional activity. In the light of present knowledge this might be interpreted to mean that, in the normal condition, a hormone is secreted which inhibits or controls the growth of the skeleton and soft tissues, and that when this is absent (apituitarism), or produced in diminished amount (hypopituitarism), growth proceeds abnormally.

On the other hand, many believe that acromegaly and gigantism are associated with a hypersecretion of the epithelial elements of the organ rather than with a hyposecretion. In a great many cases the post-mortem findings have shown merely glandular hyperplasia, or tumors of adenomatous type, involving the anterior lobe. Those anomalous cases where the gland is found to be completely destroyed at death, may be satisfactorily explained, according to Schäfer,²⁵ by assuming that in the early stages of the disease, and throughout most of its course, the changes are of the nature of a simple glandular overgrowth; that subsequently this non-malignant hyperplasia takes on a malignant character which rapidly leads to destruction of the whole organ and so to a fatal termination. If this is a correct explanation of the cause which lies behind the symptoms and signs of acromegaly, then it may be inferred that normally a substance is produced by the glandular portion which stimulates rather than retards growth.

The opposite condition—the degeneratio-adi-
poso-genitalis of Frölich—in which there is a tumor of the hypophysis without the symptoms of acromegaly, would also fall into line with this theory, since Cushing, by removing most of the anterior lobe, has produced experimentally a similar condition in dogs.

FUNCTIONAL RELATIONSHIPS BETWEEN PITUITARY AND OTHER GLANDS OF INTERNAL SECRETION.

With regard to the relationships existing between the pituitary and the other glands producing internal secretions, our knowledge at the present time is so incomplete that perhaps the less said now the less there will be to withdraw subsequently. It seems certain, however, that functional and anatomical changes in the hypophysis lead to changes in the glands of the reproductive system, and possibly also in the thyroid and suprarenals. It is also certain that in some animals removal of the thyroid leads to hypertrophy of the pituitary, but less certain that the same result follows castration. (Degener and Livingston.)²⁶ According to Biedl,²⁷ it is probable that hyperfunction of the hypophysis is associated with hypertrophy of the cortical portions of the suprarenals together with a diminution both of function and of volume in the thyroid. The significance of these relationships and the mechanisms by which they are manifested are not understood.

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THE INTRA-NASAL APPROACH TO THE HYPOPHYSIS.*

By LEWIS A. COFFIN, M.D.,
NEW YORK CITY.

WHEN asked by our Secretary to contribute a paper on the "Surgery of the Hypophysis," I told him I had never given the subject serious thought. He answered that he knew of no one in the Society who had operated on the pituitary and asked that I consider the subject further. The compliment of the request aroused in me both pleasure and the desire to do the operation, and remembering the words of the great explorer, Stephenson, that "To travel hopefully is better than to arrive," I assented.

For many years I had in quest for other things approached the hypophysis by various routes and I felt that I should be pleased to blaze the way along what seems to me the easiest, safest path.

That I had traveled well toward the hypophysis and along the route I shall describe may be attested by the X-ray picture which I had taken immediately upon Dr. Halsted asking me to take part in the discussion. In this case, one looking into either nostril of the patient looks into both sphenoidal sinuses the anterior walls of which

have been quite thoroughly removed. The picture shows a pair of Luc's forceps grasping the sphenoidal septum. You will note the blades of the forceps are not apparently close up to the sella. They are however. The picture illustrates one variation in the structure of the sella wall which may more or less embarrass the operator who would reach the pituitary body trans-sphenoidally, viz: a thick sella wall, composed of two layers of compact bones separated by a considerable thickness of cancellous bony tissue. Gibson¹ found this condition in six of 107 skulls examined by him. I encountered it once in nine operations on the cadaver done to uncover the pituitary. Of course, this condition should be known before operation is begun, as should the size, relation, etc., of the sphenoidal sinuses, from the study of a good radiographic picture of the parts.

To return to the patient whose picture you have seen. He is a barber, having off every other Monday. During the time the picture was done which made possible this picture he did not lose one hour from his regular hours of work. To tell what has been done on this patient is to describe the route by which I would approach the sella turcica. •

The entire ethmoidal tract has been cleared out and from about one inch back of the columnar cartilage, the lower half of the nasal septum has been cut away. All that remains to be done to bring more prominently into view the sella bulge into the sphenoidal cavities is to cut away the sphenoidal septum.

In this case the ethmoidal cells were exenterated because of the condition of those cells. The septum was cut away by accident.



FIG. 1.—Luc's forceps grasping sphenoidal system.



FIG. II.—Curette impinging on wall of sella. Sphenoidal system having been removed.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.



FIG. III.—Curette entered through previously made opening in sella wall. Patient under ether anæsthesia.

On the cadaver I have uncovered the pituitary by following the above procedure, by exenterating the ethmoids of but one side and without touching the ethmoids of either side and this I am sure can be done on the living, the amount of intra-nasal surgery depending upon the intra-nasal condition.

Hirsch² has reported a decompression of the pituitary through the space afforded by the exenteration of the ethmoids of one side without touching the septum. This of course would not allow an attack in the median line.

Hirsch³ also reports an intra-nasal approach to the hypophysis between the flaps of a sub-mucous resection of the nasal septum.

In looking up Hirsch's references I find that West⁴ describes practically the same operation that I have outlined. Our technique varies at points in favor, I think, of my own as conducing to less hemorrhage.

For instance, in removing part of the septum, Dr. West recommends the use of knife and chisel. I simply cut it out with the Janson forceps. There is very little hemorrhage and if properly done there is very little hemorrhage in the exenteration of the ethmoidal cells.

The advantages of this operation are as follows: It can be done under local anesthesia, or part of it can be done under local anesthesia and the later part under general anesthesia.

It can be done at one sitting or it can be interrupted at any stage and resumed at any future time. There is comparatively very little hemorrhage. Instruments are entered through one nostril and the light is thrown through the other, giving a most satisfactory field and view.

On March 17th, through the courtesy of Dr. C. E. Quinby, there was transferred from his ser-

vice at the City Hospital to my service at the Manhattan Eye, Ear and Throat Hospital a woman whose condition had been diagnosed as that of hypopituitarism which had followed a condition of hyperpituitarism. I shall report the case more fully at a future time.

I did a decompression of her pituitary at several sittings. She is considerably improved. These pictures show the woman, her enlarged sella turcica and the stages of the operation.

I wish to express my thanks to Dr. Larkin, Pathologist to the Department of Charities, and to Dr. Cornwall, his assistant, for their courtesy in assisting me to material as well as their pains-taking examinations and criticism of the work which I did in their Department.

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Discussion.

DR. GEORGE E. DAVIS, of New York City, in discussion, said: "I wish to contribute to the discussion by reporting briefly an operative case and incidentally to call attention to the point emphasized by Cushing, in his classic treatise on 'The Pituitary Body and Its Disorders,' who contends that all-important as is the determination of the routes and technique of the different surgical procedures to reach the sella and interpeduncular region, the problem of dealing with the lesion after it has been exposed is of greater importance and even more difficult to solve. The results in the case just reported by the essayist and the one I am about to report confirm this conclusion.

"My case was that of a robust young woman, 28 years of age, who consulted my brother, Dr. A. E. Davis, first in June, 1910, on account of impairment of vision and headaches. An examination at this time showed about 20/30 vision in both eyes, bitemporal para-central scotoma, and the left pupil larger than right and sluggish to light. Though well nourished, the patient had never menstruated.

"The patient was lost sight of until January, 1912, when she returned again on account of further impairment of vision and severe bitemporal headaches, worse on left. Her vision at this time was about 20/40 right, and 20/100 left, and the field tests for form showed the characteristic bitemporal hemianopsia not infrequently observed in tumors of the hypophysis. Discs not choked but showing primary atrophy on temporal sides. Her headaches were increasing and described as 'tearing sensations' which were relieved at times by a mucous discharge in the nasopharynx. The X-ray showed enlarged hypophysis protruding into the sphenoid cells. Not-

withstanding the progress in local and general pressure symptoms, with rapidly failing vision and a definite enfeeblement of memory and mentality which later necessitated her giving up her business, she stolidly declined operative measures.

"In March, 1913, I was called to see her at her residence. For three days she had not been able to retain food; respiration labored; headache and somnolence extreme; and practically complete loss of vision, barely able to distinguish daylight from darkness. The pulse was very slow (45), feeble and thready. Under the circumstances, she consented to go to the hospital for operation. Notwithstanding her condition was *in extremis*, the operation was undertaken, with the hope of relieving in a measure both the local and general pressure symptoms, and if possible partially to restore the vision, which had been almost completely lost for some days.

"The trans-sphenoidal route, after the Hirsch technique, was followed. On account of the profound mental obtundity preventing the co-operation of the patient under local anesthesia, ether was chosen as the anesthetic. On opening the anterior sphenoidal cells we came directly on the compressed anterior pituitary lobe, as the sella floor was wanting. The rather free hemorrhage, however, blocked the field and our inspection was not as accurate as we could wish. As the tumor did not further protrude on exposure, we contented ourselves with opening the dura and aspirating. The latter procedure brought away about one dram of amber-colored liquid, resembling cerebro-spinal fluid.

"I regret to state that the sella decompression did not serve to ameliorate the *medullary symptoms*, nor to any material extent help the vision. The most marked result was the establishment of a profuse menstrual flow, the first she ever experienced. But as just stated, the medullary symptoms were not relieved, but gradually increased and resulted in a fatal termination on the fifth day after the operation, accompanied by extreme hyperpyrexia, 107 degrees F., which, as stated by Cushing, occurred in two or three of his fatal cases, and is not uncommon in these cases when the general pressure symptoms are marked, due to large mid-brain lesions.

"At the time I suspected meningitis as the cause of the hyperpyrexia, but the laboratory reports and the clinical symptoms negated this opinion, and the fatal termination was clearly due to the medullary complications and not to infection. Post-mortem was refused.

"This case, according to Cushing's classification, probably belongs to Group 2, of cases with pronounced neighborhood, but inconspicuous glandular symptoms with adiposo-genital dys-

trophy. The patient was well nourished, with definite adiposity. Secondary sexual characteristics normal, with well developed mammary glands and external genitals, and normal hirsuties. Pelvic organs infantile. No acromegalic symptoms. Seemingly, a case of primary hypopituitarism."

DR. THOMAS J. HARRIS, of New York City, complimented the officers of the section on arranging such a timely topic as the symposium on the hypophysis.

Dr. Coffin had frankly stated at the outset that the operation which he had devised was not new but had already been described by West, of Baltimore. The several approaches to the hypophysis may be described as either by the extra-cranial or the intra-cranial route. The conclusion of Cushing is undoubtedly correct, that no one operation will do in every case.

The recent method described by Frazier of approach by temporary resection of the orbital ridge seems to possess decided merits. The intranasal operations include those of Schloffer, who was the first to report a successful result. In the Schloffer operation, the nose is detached and turned over on the side of the face. Thirty operations have been done according to this method with a mortality of 39.6 per cent. The method described by West and that by Hirsch possess the decided advantage of being far less bloody. Dr. Harris had not had the opportunity of seeing the Hirsch operation, but as described to him by those who had witnessed it, it is particularly simple in the hands of Dr. Hirsch. Great stress is made by Hirsch on thorough anesthesia and as complete asepsis as possible.

Unless the middle turbinates approach close toward the septum, Hirsch does not find it necessary to disturb them, and states that he can get an excellent field through the mucous flaps separated by long speculum. The operation is done in a sitting position and usually is not attended with much bleeding.

On account of the smaller amount of traumatism, the Hirsch operation would seem to be the one to prefer over that devised by West, unless there is a distinct deflection in the septum, in which case it would be preferable to enter through the side of the cavity. It is interesting to note that the second case of Hirsch died from hemorrhage in the same way as Dr. Coffin's case. The first operation, in which only a small portion of the growth was removed, caused decided improvement in the symptoms. Later a second operation was performed, and an attempt made to remove more of the tumor. This was followed by a fatal result. The post-mortem showed that there had been an extensive hemorrhage into the brain.

OCULAR DISTURBANCES OF HYPOPHYSEAL DISEASE.*

By ARNOLD KNAPP, M.D.,

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THE ocular disturbances in hypophyseal disease depend upon the anatomic relationship of the optic chiasm to the hypophysis cerebri.

Normally the chiasm is not horizontal, but inclined from above down and from behind forward. Its postero-inferior surface does not lie in the optic sulcus, but, as Testut has shown, it rests on the anterior part of the tent of the hypophysis, immediately anterior to the infundibulum.

The hypophysis is situated in the sella turcica, guarded in front and back by the clinoid processes, laterally by the cavernous sinus and its accompanying nerves, and above by the dural diaphragm which is perforated by the infundibulum, the connecting process between the pituitary body and the floor of the third ventricle.

The ocular symptoms are the result of direct pressure by the hypophyseal tumor on the basal visual paths and on the motor nerves of the eye.

As the pathological hypophysis grows in size it enlarges the sella in all directions, and as it extends upward it generally enlarges the infundibular hole and, like the tumors arising in the infundibulum, presses upon the ventral surface of the chiasm; the visual fibers which cross in the middle will first be pressed upon, producing characteristic disturbances. Within the crossed fibers in the center of the chiasm, and in the median line are the crossed macular fibers. The visual disturbances then increase in an irregular way, and blindness may result. Characteristic visual changes may consequently only be present at a certain stage of the morbid process.

According to Henschen,¹ the typical course of the visual disturbances is as follows: Pressure on the ventral macular crossing fibers produces small macular or perimacular bitemporal scotomata upward; then pressure on the crossing ventral peripheric fibers results in bitemporal quadrant hemianopsia. Additional pressure then involves the uncrossed fibers, and one eye is blind with temporal hemianopsia in the other, or both eyes are blind. Sometimes the color fields are first involved, especially in the upper temporal quadrant. In general, the development of the field defect is irregular and not as stated above, and very different combinations of visual disturbances are observed.

If pressure is not exerted on the posterior surface of the chiasm unusual combinations of visual disturbance may result from the enlargement of the pituitary tumor taking place anterior to the chiasm and then invading the orbit, from lateral pressure—as Cushing² has ob-

served—from an extension along one side of the chiasm, from an involvement of one or both optic tracts or of the optic nerves, and, finally, from a constriction of the optic tract or optic nerves by pressure against the anterior cerebral arteries.

The most frequently observed visual disturbances in pituitary disease are *defects in the visual field*.

Of these temporal hemianopsia occurs so often, in nearly 50 per cent., according to Uthoff,³ that it has for many years been regarded as one of the characteristic symptoms. This hemianopsia, however, is not symmetrical but is irregular with uneven limits, differing in this respect (de Lapersonne et Cantonnet)⁴ from the homonymous hemianopsias. According to Cushing⁵ the primary defect usually first involves the color boundaries alone in one upper temporal quadrant. This is followed by a more or less complete temporal hemiachromatopsia, possibly with a "slant" in the upper temporal form field, which gradually spreads downward until most of the temporal field is involved. The nasal field in turn shrinks away from the center as the blind field enlarges, though the process seems for a time to be arrested at the macular area. The process in the two eyes may be so unequal that while one eye is blind there is but little defect in the field of the other eye. Cushing says it is of the greatest clinical significance to look for mere tendencies toward temporal defects, particularly in the color peripheries.

Homonymous hemianopsia, according to Uthoff, is very unusual. Cushing, on the other hand, finds that homonymous defects or tendencies in this direction are at least half as frequent as bitemporal ones.

Scotomata, usually paracentral in location, have been described by a number of authors.⁶ They may precede the development of the temporal hemianopsia, or be observed on the disappearance of the hemianopsia after operation. It is difficult to explain their formation, unless by peripheric pressure on the chiasm just as in the case of the optic nerve. De Schweinitz and Holloway believe these scotomas are not uncommon, and suggest that more mention of them is not made because the visual fields were taken at a time when the scotomas were no longer present.

Concentric contraction of the field has been rarely observed. It is the expression of a peripheric optic nerve affection.

The *course* of the visual disturbances is usually slowly progressive, just as the growth of the tumor is slow. An intercurrent hemorrhage or œdema, or sudden increased size of a cyst, may cause a sudden aggravation of the symptoms. On the other hand, the onset may be sudden and

³ Graefe-Saemisch, 2 Ed., Vol. XI, p. 1275.

⁴ "Manuel de Neurologie Oculaire." Paris, 1910. p. 308.

⁵ *Loc. cit.*, p. 245.

⁶ Bartels. *Zeitschrift für Augenheilk.* Vol. XVI, 1906. p. 407; de Schweinitz and Holloway, *J. A. M. A.* Vol. LIX, 1912, p. 1041; Bogatsch, *Klin. Monatsblätter für Augenheilkunde*, L, 1912, p. 313.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

¹ Henschen, Lewandowsky's "Handbuch," Vol. III, p. 751.

² "The Pituitary Body and its Disorders." Philadelphia, 1912.

severe, with blindness, and then the condition partly clear up. (Uthhoff.) Daily variations in the field defects have been particularly noted by de Kleijn.⁷

Ophthalmoscopic Changes.—Simple optic atrophy is the most frequent, and was present in 20 per cent. of the cases collected by Uthhoff. Choked disc is only about one-half as frequent; this is explained by the tumor shutting off the entrance to the optic nerve sheathes. According to Cushing, a choked disc may become superimposed on the atrophic nerve head from the internal hydrocephalus complicating the pituitary tumor. Optic neuritis and neuritic atrophy are also only about half as frequent as optic atrophy.

The ocular muscles are implicated in between 10 per cent. and 25 per cent., according to Uthhoff. These are nearly always oculomotor pareses, often in the form of ptosis. Affections of the other branches have been observed. Complete and bilateral oculomotor paralyses are uncommon. Paralysis of the abducens nerve is very unusual.

Nystagmus, changes in pupillary action and exophthalmos have been observed in varying frequency; they are of no particular diagnostic importance.

A consideration of these ocular complications suggests a profitable field for further study in the careful and frequently repeated examination for paracentral scotoma and for defects in the color field in early cases, and especially in cases with obscure symptoms of pituitary disorders.

Discussion.*

DR. F. W. MARLOW, of Syracuse, N. Y., in discussion, said: "What contribution I can make to this discussion is based upon the more or less incomplete clinical observation of eight cases. Four of these presented the characteristic symptoms of acromegaly. In one of these four cases there were no ocular symptoms. In the second the only departure from the normal was the presence of slight homonymous color scotomata, more marked in one eye than in the other, no defect having been noticed by the patient, who consulted me for the correction of his refraction. In the third case (Case 3), that of a young woman, unmarried, there were marked changes in the field of vision and a definite lowering of visual acuity. This patient was 27½ years of age when I saw her on March 27th, 1901. She had been out of health for three years, changes in her face, tongue, hands and feet having been observed for between two and three years. During this period she grew two inches taller, from 5 feet 1½ inches to 5 feet 3½ inches. Menstruation had ceased two years previously. Sight had never been quite good, but had been worse for four or five years, and much worse recently. Occasionally the sight faded away entirely for a second or two. Her vision varied 6/9 to 6/12

and was not improved by lenses. With the right eye she saw the letters on the left side of the chart better than those on the right and the reverse was true of the left eye. Pupils were 4½ to 5 mm. in size, the reaction to light being slow and of small extent. The test was made on a dull day. The ophthalmoscope showed some pallor of the discs, especially on the nasal side. Examination of the fields (*Fig. 1*) showed a loss of the upper portion of the field in the temporal half of the right eye, there being no corresponding loss in the left eye. In each eye, however, there was a scotoma for white just outside and encroaching upon the fixation point. In the scotoma in the right eye there was no perception of light, a candle flame not being seen until it reached the fixation point. In the left eye, however, it was seen a short distance before reaching this point. Examination of the color fields showed an almost complete loss in the temporal half of the field, the defect coming right up to the fixation point. The accompanying copies of the charts show these defects. In the fourth case (Case 4) vision was reduced to perception of light on the nasal side of the field in the right eye and to fingers at 7 or 8 feet in the left. The hemianopic pupillary inaction sign being well marked in the right but not in the left eye. Both optic discs pale, with well defined edges. The chart (*Fig. 2*) of the field of the left eye shows complete loss of the temporal half and encroachment above and below on the nasal half. The color fields were not measured.

"The other four are cases either of hypopituitarism or of mixed type. The first of the group came under my observation in May, 1900, being brought to me by Dr. B. C. Loveland. I do not think that either of us recognized at the time the essentially hypophyseal nature of the lesion, although a re-reading of our records in the light of later experience showed conclusively what the case was. The patient married when she was 21 years old, had two children, the second at the age of 24, and a miscarriage about 18 months later. No further pregnancies. Menstruation ceased in March, 1899, when she was twenty-nine years old. Between July, 1899, and January, 1900, and within the space of six weeks, her weight increased from 128 to 186 pounds, and at this time she began to suffer pain in the back and legs, general weakness, excessive thirst, sometimes drinking a quart of water during the night and passing nearly 4 quarts of urine in 24 hours, of low specific gravity but otherwise normal. She also had uncontrollable drowsiness. Failure of sight had begun about the first of January, 1900, and was progressive, until in either March or April she became so blind that one day she lit the gas all over the house while the sun was shining because she thought it was night. When first seen by Dr. Loveland on April 30th, 1900, the pupils reacted slightly to light but a day or two later reaction ceased, with complete loss of perception of light. As a result of a suspected syphilitic infection in

⁷ *Graefe's Archiv*, Vol. LXXX, p. 307.

*For illustrations see pages 485 to 489.

the husband and a history of iritis in the patient a year after marriage she was put on specific treatment. The specific nature of the case was confirmed by the result of the treatment and also by the fact that the husband has recently (April, 1913) developed paresis for which he has been committed to Ogdensburg. About May 9th perception of light began to return. On the 12th she could see moving objects and on the 17th she was brought to my office. At that time the vision of the right eye was fingers badly at 1 foot, left eye $4\frac{1}{2}/70$. Pupils reacted promptly to light, but the indirect action of the right was much better than that of the left. The optic discs were decidedly pale but there was no evidence of past neuritis. Examination of the fields (Fig. 3) showed that recovery was taking place in the right half of each, being much more advanced in the left than in the right eye. About June 1st, vision in the right eye had risen to 6/24 and in the left eye to 6/6. On this day I have the note that the hemianopic pupillary inaction sign was well marked, but my recollection is that the difference between the two sides was one of degree only. On August 2d, vision was 6/6— in each eye, the right half of each field having almost entirely recovered its function, the line dividing the two halves of the field passing almost exactly through the fixation point. This improvement went on until in December the recovery of the right half was quite complete. Observations repeated many times with great care and with a small object showed the line dividing the blind area from the seeing half to correspond with almost complete precision to a vertical line passing through the fixation point (Fig. 4). On August 4th it is noted that the patient has perception of light on the blind or left side with fairly good projection up to 90 degrees outwards, but that perception of form is entirely absent and that the hemianopic pupillary sign can no longer be demonstrated. This patient has come under my observation again within the past month. The visual fields (Fig. 5) remain essentially as before, with the dividing line passing through the fixation point. Light sense is, however, materially improved, the candle flame producing almost as intense an impression of light when held on the left as on the right side, but its form is not recognized until the right half of the field is entered. For this reason it is essential for the accurate mapping out of the fields that a small object reflecting a small amount of light only should be used and I have consequently used a white pin-head, 3 mm. in diameter. In addition to the first symptoms given, indicating the hypophyseal character of the disease, I now learn that her hands have been swollen ever since her illness. Wearing gloves $5\frac{3}{4}$ size before, she now wears 7; shoes $4\frac{1}{2}$ or 4, now wears 6; and also has to use a larger thimble. In hot weather it is difficult for her to close her hands. She still drinks from 15 to 20 glasses of water in 24 hours. Ophthalmoscope shows optic discs pale and opaque, the arteries

tortuous, silver wire appearance, compressing veins.

"In the next case (Case 6), one of hypopituitarism in a married woman aged 36, characterized by premature menopause, polydipsia, polyuria, some adiposity and no symptoms of acromegaly, vision had failed for an indefinite number of months. When first seen that of the right eye was 6/36— and that of the left less than 6/60, not improved by glasses. Her sight also was characterized by rapid variations. Examination of the fields showed a temporal hemianopia of an unsymmetrical type. In the left eye there was a breaking away of the field above and below on the temporal side for white, the field for white in the right eye being normal. Examination for colors showed a defect in the temporal field of each eye, extending into the nasal half, in the left, as shown in the accompanying charts (Figs. 6 and 7). Very soon there appeared an absolute scotoma close to the fixation point on the temporal side as shown in the chart (Fig. 8) and at a later date she showed almost complete temporal hemianopia (Fig. 9). The vision in the right eye gradually deteriorated in an irregular manner until she was given thyroid extract. Under this treatment vision rose from 6/18 in February to 6/9+ in October, at which point it was maintained until after she passed from my observation. I have been recently told that she still sees about as well. X-ray examination by Dr. Coon showed an accentuation of the outlines of the sella without enlargement suggesting calcareous deposit.

"The next case (Case 7) is of interest because the patient has undergone operative treatment by Dr. Cushing, with material improvement in his vision and fields. A man, 60 years old, seen on October 7th, 1912, complaining of failure of vision in both eyes for one year, the failure having been much greater in the left than in the right. He presents symptoms of disturbance of hypophyseal function, loss of sexual power, increasing adiposity, polydipsia and polyuria, drowsiness, some increase in the size of lower lip, tongue and hands, making it difficult to close the fist. His vision was, right eye, corrected 6/12, left, fingers in the nasal half of field. The field of the right eye (Fig. 10) for white was normal, except for a small loss in the upper temporal region. There was, however, an almost complete temporal hemiachromatopsia. In the left eye the temporal half of the field was quite blind, the defect extending about 10 degrees into the nasal half. About the end of November a scotoma for white developed just external to the fixation point, and gradually increased in size. One of the charts shows its apparent dimensions on December 16th (Fig. 11). By the end of the third week in December the scotoma and peripheral defect had become united making an almost complete hemianopia and the patient, who up to that time had been opposed to operation, was advised to see Dr. Harvey Cushing with regard to the feasibility of opera-

tive interference. Dr. Cushing operated on January 15, 1913. My last previous record shows that the patient could still read 6/12, though with difficulty, his vision having varied while under observation from 6/18 to 6/9—, showing the same tendency to rapid fatigue as observed in other cases. I examined him again on January 28th after his return to Syracuse. His vision then in the right eye was 6/12+ and function had returned over a considerable area of the temporal part of the field leaving a scotoma and a peripheral defect above. A more marked improvement had taken place in the field of the left eye and central vision was restored to such an extent that the 6/60 letter could occasionally be read. A more recent examination gives R. V. 6/9, L. V. 6/24, the letters on the right hand side of chart only, but the eyes still tire rapidly. I present charts of the fields for white and color recently taken. In the greater part of the defective area in the left field there is absolute loss of light sense, the light from a candle flame not being seen, whereas in the scotoma in the right field it can be perceived everywhere. Some interlacing of the color fields will be observed.

"The last patient in this series (Case 8), Mrs. L. M., age 50 years, who has only just come under my observation, presents briefly a history of adiposity, and polydipsia from youth until three years ago. She has never been pregnant. Three years ago menstruation ceased somewhat abruptly and from that period she dates a loss of flesh now amounting to 50 pounds, and the cessation of her excessive thirst. Her sight began to fail in both eyes about two years ago, more in the left than in the right, vision of right 6/18—, vision of left 6/36+1. Examination of her fields shows a condition almost exactly resembling that of the last case. Complete loss of the temporal half of the left field, the fixation point being included in the blind area. In the field of the right eye there is a loss of the upper and lower margins of the temporal half and a large absolute scotoma, the inner limit of which coincides very exactly with the fixation point

and the vertical line passing through it. There is interlacing of the color field's boundaries in the nasal half. X-ray examination by Dr. C. E. Coon shows an obliteration of the outlines of the sella.

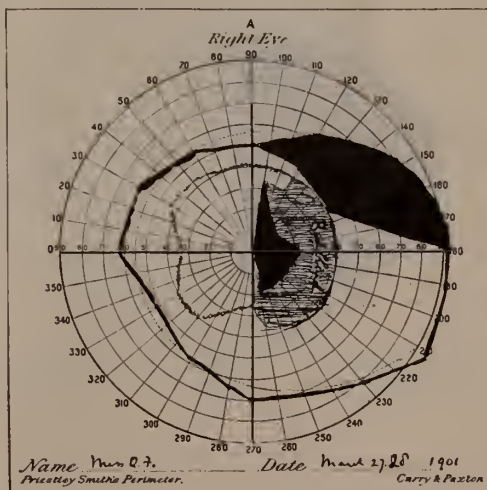
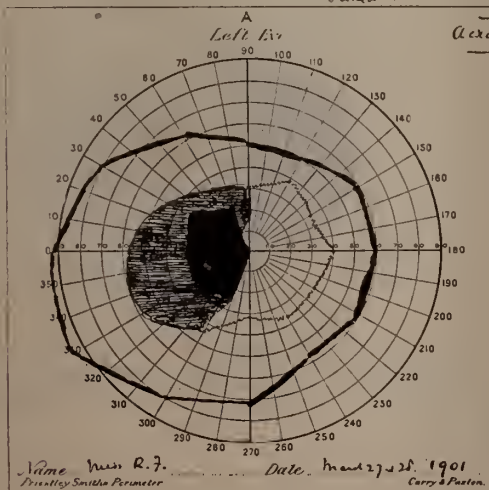
"It is evident even from this small number of cases that the defects in the visual field caused by hypophyseal disease may vary in intensity from a slight relative color defect, sometimes, as pointed out by Nettleship, not easy to distinguish from that due to tobacco, to complete loss of perception of light. In form they may vary from a scotoma near the fixation point to a peripheral defect or a combination of both, resulting in a complete hemianopia; and they may vary also in distribution, the hemianopia usually being bitemporal but occasionally, as in two of the cases cited, of a homonymous type. The most characteristic features seem to be a defect at the upper or more rarely at the lower margin and the formation of a scotoma of greater or less intensity in the temporal half, quite close to or in contiguity with the fixation point. Examination of some of the charts suggests that formation of the central color scotoma precedes the peripheral loss. A lack of symmetry in the two eyes seems to be the rule. In some cases there is a partial reversal of the order of the color fields. While the general characteristics of the defects are not usually difficult to make out, it is quite another matter with regard to the determination of their exact limits, especially peripherally. In fact it can not be said that they have any precise limits owing to the rapid fatigue and consequent variability which ensues on examinations. Examinations at different times and by different observers may have very different results. Central vision may escape serious impairment until comparatively late, but when affected shows the same tendencies to rapid fatigue and variability. Ophthalmoscopic changes in my cases have been limited to different degrees of pallor of the optic disc, without any evidence of neuritis. In two cases, (Mrs. H. R. T. and A. S.) there have been indications of arterio-sclerosis."

$V = \frac{6}{9} - \frac{6}{12}$ (Fig. Case 3.)

shaded area = absolute scotoma.

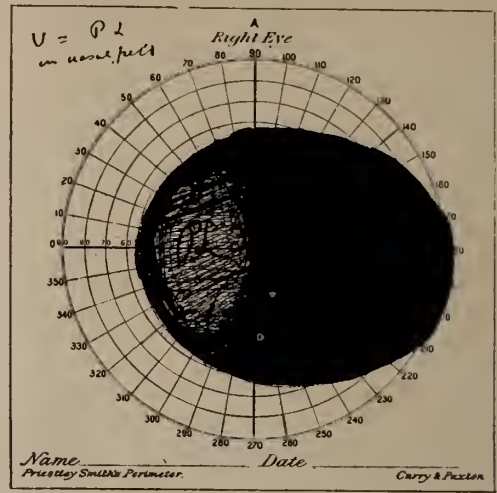
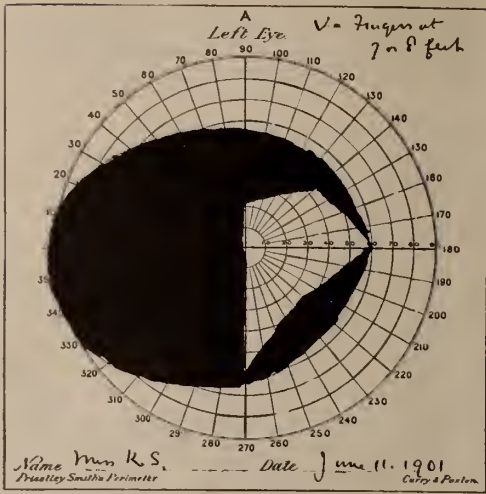
Acromegaly

$V = \frac{6}{9} - \frac{6}{12}$ Dr. Mailow



(Fig 13 / Case 3 acromegaly)

Acromegaly



(Fig. 2) (Case 4)

Slab V

Syphilitic disease of Hypophysis -

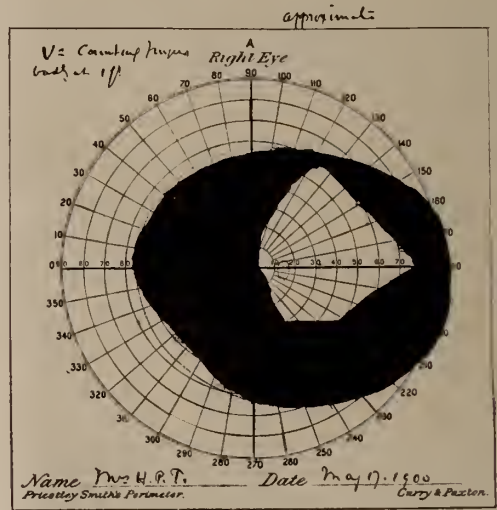
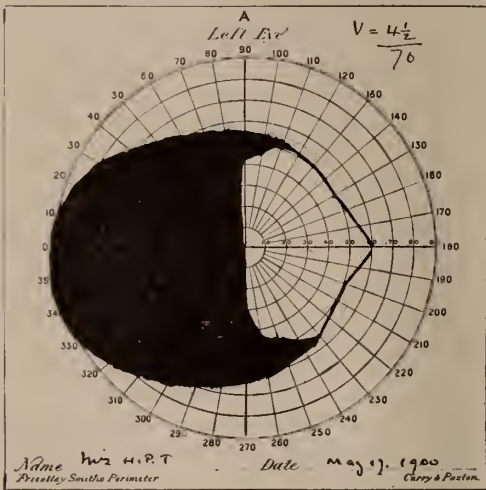


Fig 3 (Case 5)

Slab V

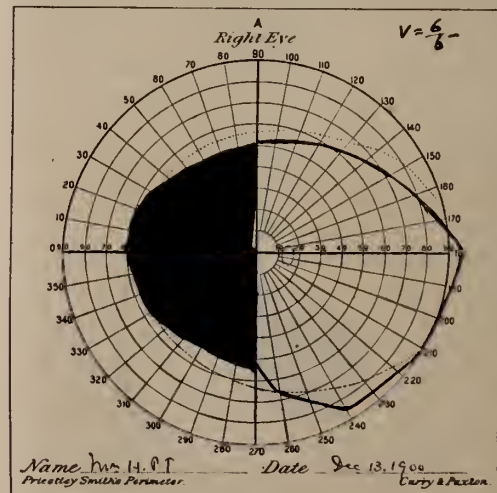
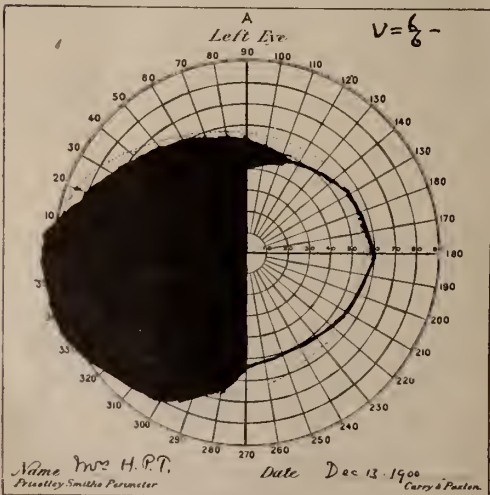


Fig 4 (Case 5)

Slab-V

— White
- - - Blue
--- Red

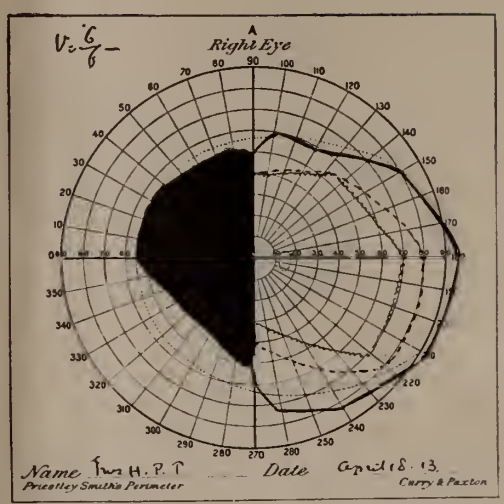
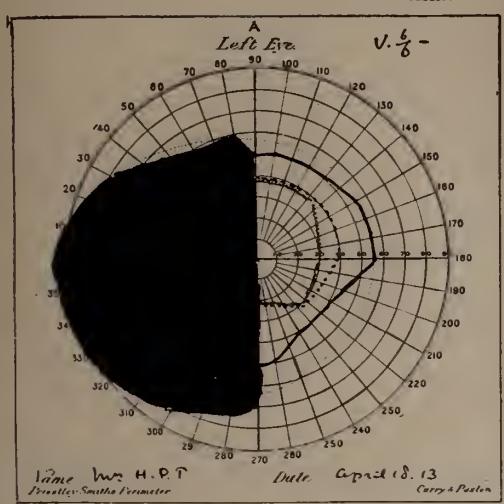


Fig 5. (Case 5)

m.7.1

Fields for White & Blue

Hypophthalmism

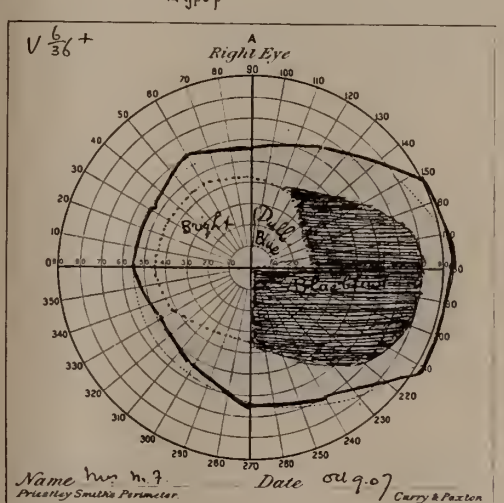
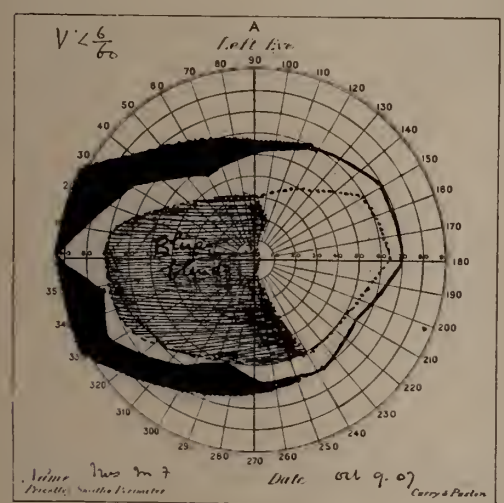


Fig 6 (Case 6)

m.7.2

Fields for Red

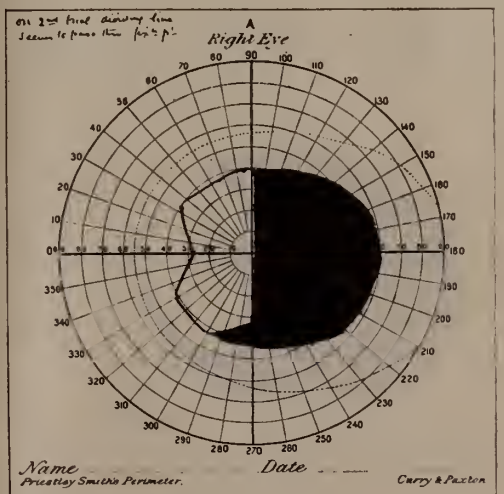
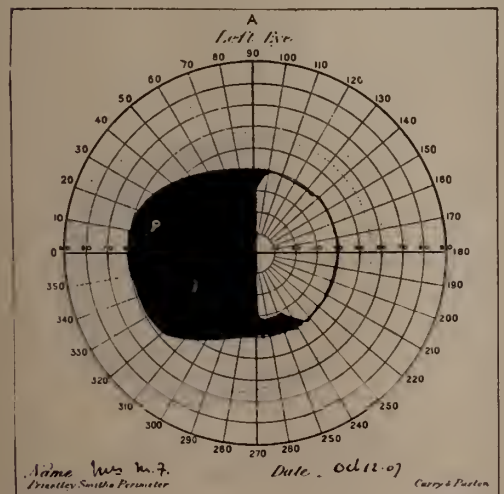


Fig 7. (Case 6)

m.7.3

Field in white - periphery = 20 mm diam
Scotomata = 10 mm diam

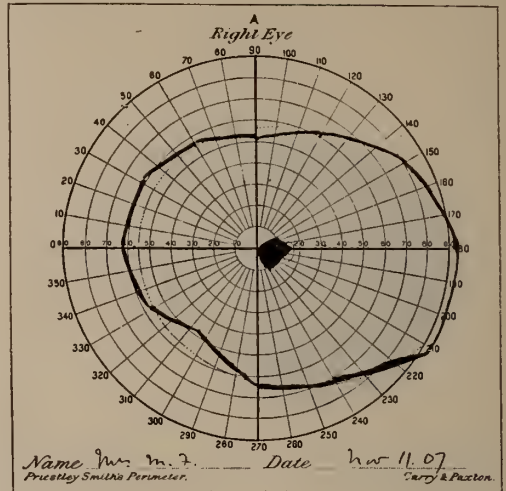


Fig 8. (Case 6)

m.7.4

Field 1/4 white 10 mm

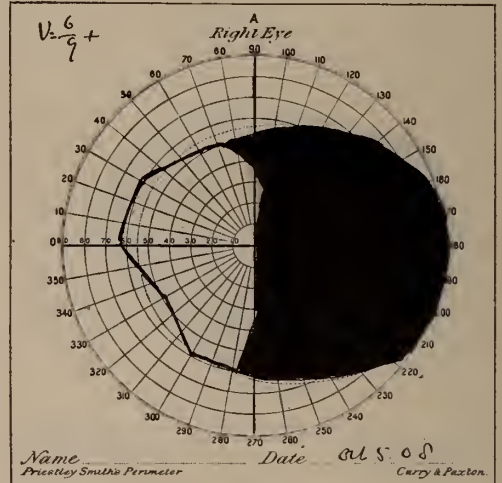
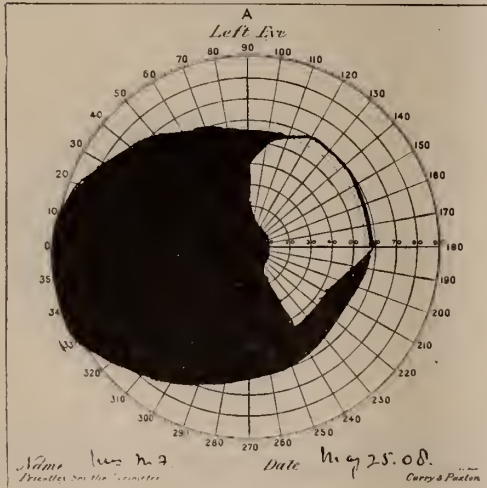


Fig 9 (Case 6)

Case 7

White
Red 20 mm diam.

Dyopitricism
operated

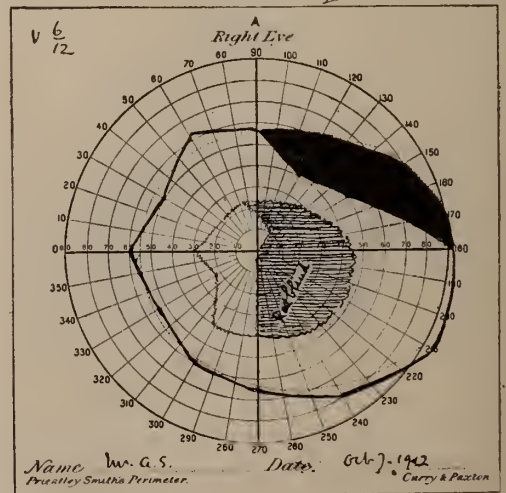
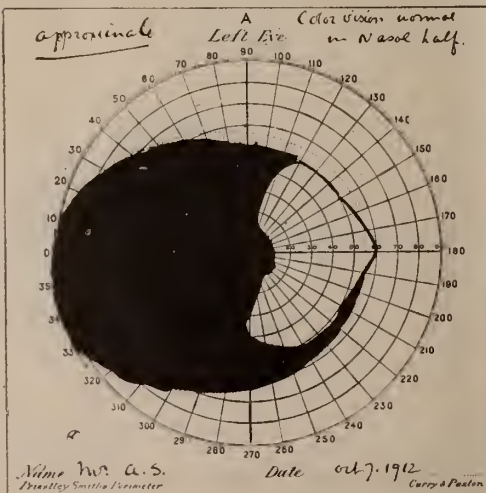


Fig 10. (Case 7)

Fuchs & Schornhafer White

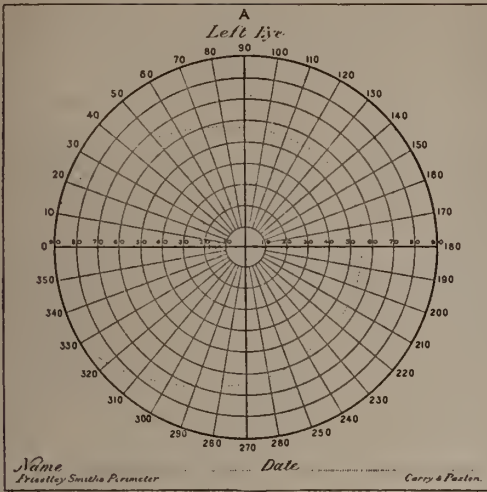


Fig. 11. (Case 7)

One week later there was practically complete temporal hemianopia

— white 10 mm
- - - - - blue
===== red.

3 mm after operation by Dr. Cushing

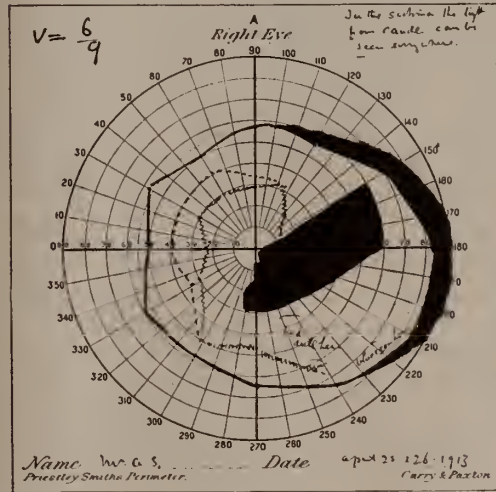
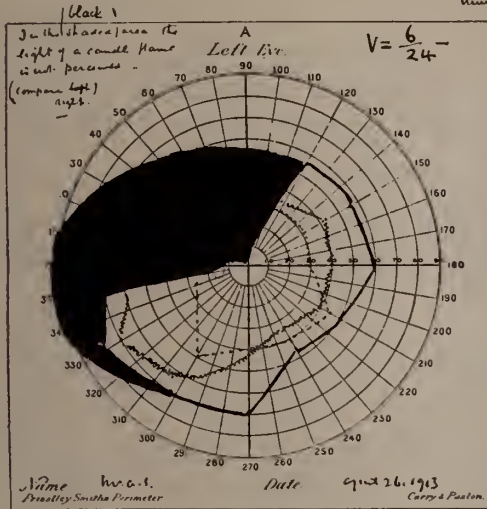


Fig. 12. (Case 7)

----- white
- - - - - blue
===== red Stated parts = blind

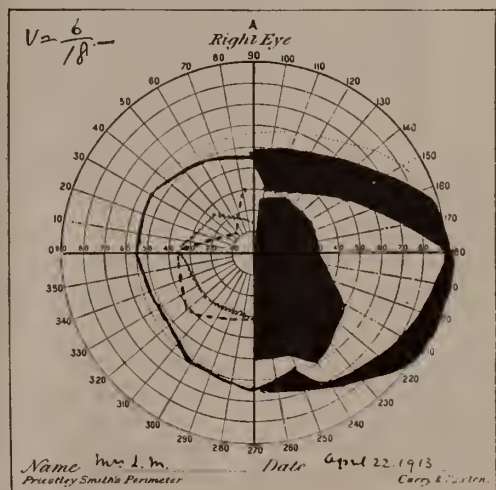
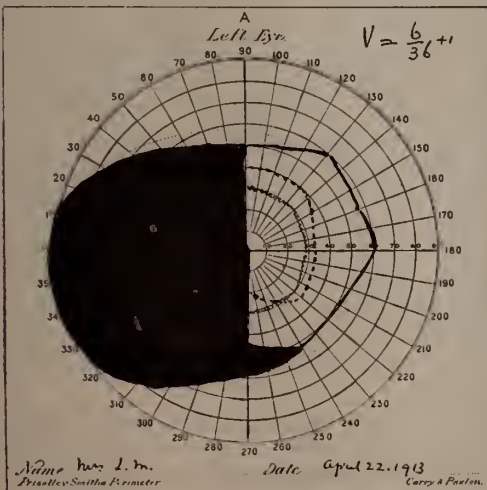


Fig. 13. (Case 8)

DR. JOHN E. WEEKS, of New York City, continuing the discussion, said:—"After the able exposition of the subject, by Dr. Arnold Knapp, there remains but little for me to say on the question of ocular disturbance in hypophyseal disease except, perhaps, in the way of confirmation.

"In regard to the eyelids, there is in some cases a boggy condition of the lower lids, particularly if acromegaly is present. Ptosis accompanying, or rather as a result of peripheral oculomotor palsy, is an occasional manifestation.

"*Eyeballs.*—A moderate degree of exophthalmos may occur, due apparently to slight obstruction to venous flow from pressure on the cavernous sinuses. Palsies of the ocular muscles, peripheral in nature, due to pressure on the nerve trunks or to involvement by extension of hypophyseal growth is observed in some of the cases.

"The effect on vision is due in the greater number of cases to pressure on the chiasm and optic tracts and manifests itself in the eye usually as a partial, or complete, descending atrophy of the optic nerve, not preceded by papillitis. Papillo-edema may occur as an intracranial pressure symptom in advanced cases in which by the growth of the hypophysis a hydrocephalous has been induced and the cerebral fluid has been forced into the optic nerve sheath, the papillo-edema being engrafted on a previous partial or complete optic nerve atrophy. Papillo-edema is not common in hypophysial or chiasm disease because of the closure of the arachnoid space in the sheaths of the optic nerves, due either to pressure or to extension of the growth itself, in some of the cases making the distension of the sheath by cerebro-spinal fluid impossible. Photophobia is in some cases an early and pronounced symptom.

"*Fields of vision.*—The effect on the field of vision varies greatly in the different cases, while the typical defect is a slowly progressive bitemporal hemianopsia with an irregular line of limitation, advancing to complete blindness in the cases in which the growth is not arrested or limited. The defect may present as a homonymous, a superior, or even as a superior nasal hemianopsia. Central, or peripheral, isolated scotoma may appear, usually with a partial or complete bitemporal hemianopsia. Further quite uniform concentric limitation of one or both fields may be present. As a rule, the field of vision of one eye is affected to a much greater degree than the other. One eye may be blind while the other remains but little affected. The color fields suffer first, the defect usually corresponding fairly well with the defect that will subsequently appear in the form field. In regard to the order of the color defect, while in a small proportion of the cases there may be some interlacing of the fields for red and green

(this appeared in one eye in one of the cases observed by me), the phenomenon is not sufficiently frequent and does not occur sufficiently early to be of much diagnostic value. The charts of fields presented are from two of my cases.

"In regard to the rapidity of decrease of vision, it may be broadly stated that it depends largely on the rapidity of the growth of the tumor, grave diminution occurring in a few months, or a number of years. As pointed out by Cushing, the size of the mass has no very close relation to the effect on vision, large hypophyseal masses having been observed with but little diminution of vision and per contra great defect of vision with relatively small hypophyses.

"Removal of the pressure either by sellar decompression or by other operative procedure usually results in improvement of vision, sometimes remarkable. Sometimes there is no improvement whatever. In the typical case improvement in field and in visual acuity may be expected."

DR. CHARLES H. FRAZIER, of Philadelphia, directed his remarks chiefly to the hypophysis from the viewpoint of the surgeon, and called attention to some of the difficulties that confronted the surgeon in his attempts to deal intelligently with the various problems of pituitary disease. Chief among these was the contradictory results of research workers as to whether a portion of, or the entire, gland or none at all was necessary for the maintenance of life. It is as yet to be determined how much of the pituitary body may be safely removed. Another interesting and complexing feature is the absence of any relation between the clinical picture and the character of the lesion. In the presence of any one of the three pathological lesions—the benign, the malignant, and the strumous—we may have any one of the three clinical syndromes, the hyperpituitary, the hypopituitary, or the pressure syndrome, separately or in combination, so that it is impossible before the operation to determine anything of the character of the lesion that is to be dealt with. Another peculiar feature of pituitary lesions is the difficulty experienced by pathologists in classifying the lesion by microscopical examination. Experienced observers have submitted diverse opinions upon the examination of a given specimen, varying from hypoplasia to a benign or even a malignant lesion. The size of the sella turcica furthermore is not a guide to the size of the tumor. In many instances, large intracranial growths have been found when the size and shape of the sella turcica had not been disturbed. Of interest both to the specialist and general surgeon is the method of approach.

Dr. Frazier described his own transfrontal operation and pointed out the many advantages of it over the transphenoidal route, chief among which were the avoidance of infection from

meningitis and the greater exposure. He had demonstrated the superiority of his method in four consecutive cases, which he had operated upon during the past year without any fatality. The intracranial route, he believes, is better adapted to the general surgeon than any intranasal method, although in the hands of the specialist, accustomed to working in a contracted space with artificial illumination, the latter may continue to be the operation of choice. Dr. Frazier believes that there are still many limitations to the surgery of hypophysial lesions, although the fact that seemingly malignant lesions run a relatively benign course, is an encouraging feature not to be lost sight of. He advocates operation only in those cases of acromegaly or dystrophy which are associated with intense headache or more particularly visual disturbance, but only after feeding with pituitary and thyroid extract have been faithfully tried. He has seen extraordinary results follow the use of glandular therapy. In no case, however, should the operation be postponed until the optic nerves have atrophied.

AN ANALYSIS OF SHOCK.*

By ARTHUR S. CHITTENDEN, A.M., M.D.,
BINGHAMTON, N. Y.

AN association of cells, each independently capable of life; a very early grouping of these cells on the basis of their function and efficiency; such, in brief, is the body and its organic divisions.

The external conformation of this agglomeration and the arrangement of its parts with their highly differentiated function represent *living race memories*; these are the records in hand of race-trials and triumphs, of ancient environment and former needs; and, if we could interpret better, we could learn from them not merely history, but prophesies; not merely whence we came but, quite as important, whither we go.

Divided into cells, separated into organs, functionally differentiated in various parts, this whole association is, however, singularly unified in the matter of its end product and the common good. There appears to be no limit to the adaptability of this cellular mass; if the climate changes, the superficial temperature is changed; is more power needed in heart or limb, muscular hypertrophy ensues; where accident maims or infection intoxicates, proliferation of cells or amboceptors offsets the assault. The eye sees for *all* the body; the ear hears and the skin feels for the whole. This is the unity for the common good. And the end product is motor efficiency—the thing by which we judge the degree of liveness in things about us; and, by the same sign, in the absence of

which we judge them to be inanimate or dead. Thus this agglomeration, faithful to the race memories of its component parts, moves along its phylogenetic course, doubtless toward what Mathew Arnold called "The not ourselves which makes for righteousness."

I have said that this cellular mechanism, so manifoldly divided, is unified in the end product and for the common good. This oneness, this co-ordination of these various cells is what, in particular instances of animal life, makes for the tendency—towards or from—which we call evolution and recession, and is brought about by what Mr. Sherrington calls "the integrative action of the central nervous system"—a consolidating force, mediated by a system lying outside and between the cells and making for their co-operative action.

William James has likened the central nervous system to a funnel, the large end of which represents the receptive sensorium, skin and special senses; while the small end represents the issuing motor result. Dr. Southard, of Boston, has modified this conception somewhat by locating planes at different points along the funnel transversely to its long axis to represent the level of central registration of incoming sensory impulses; those levels can be designated as the spinal cord, pons, medulla, peduncles, basal ganglia and cortex.

We know from experimentation on the laboratory "spinal animal" that many highly co-ordinated reflexes have not necessarily any representation consciousness or even in the medulla. There are, of course, many afferent stimuli which do find registration in the cortical centers and release there reflex efferent impulses which execute highly co-ordinated movements; or these stimuli remain as potential efferent excitants stored for subsequent release and making for the elaborate motor complex which we broadly term conduct, or the individual motor end result.

But there is another stream of afferent impulses coming from the periphery, the viscera and the specialized sense organs, mediated by a different type of receptor and by an insignificant and dependent portion of the central nervous system, mistakenly called the "sympathetic system."

This system concerns itself but indirectly with the end product, with the motor output of the body; this is the reflex motor mechanism concerned in the problem of bodily upkeep; it is the purveyor of cellular provender, the integrative factor making for and maintaining the common good. This collateral nervous system directs the vasomotor control of the entire cardio-vascular system; herein lies every physical phenomenon, exclusive of motor output; repair of wounds, immunity production, sleep, glandular activities and the various phases of nutrition are all of vascular origin.

* Read at the annual meeting of the Sixth District Branch of the Medical Society of the State of New York, at Binghamton, N. Y., October 15, 1912.

The sympathetic system is not automatic or self excited, but is operated through association nerve fibrils from the cord by incoming stimuli from the periphery. The sensorium which places blood supply, and therefore bodily welfare, en rapport with the outer world has receptors of two kinds; those conducting impressions of bodily well being—euphoric or anoci in character; and those conducting impressions of bodily ill, or noci.

It is this stream of sensory stimuli, innocuous and noxious, that reflexly maintains, through the sympathetic system, the tonic vasoconstriction of the vessels necessary for normal vascular tension. So smoothly does this reflex mechanism ordinarily operate in its maintenance of vascular balance, that but relatively few of the afferent stimuli find registration in consciousness; most of the stream of little impacts is shunted in the cord; we are not disturbed by the condition of our peritoneum, the splanchnic vessels fill, digestion proceeds, and sleep, perhaps, quietly ensues.

The stimuli of the skin which are registered in consciousness as sensations of warmth, cold or touch are not adequate to excite pain, *i. e.*, they do not threaten local injury and are anoci in character. Receptors of the viscera and cornea are entirely of the pain or noci type; visceral stimuli, in order to be registered in consciousness, must, however, be adequate in degree and as Sherrington points out, peculiar in type—for instance, the cramp-like smooth-muscle pain of colic or labor is occasioned by distensile stimuli; this is true of adequate pain stimuli of all the hollow viscera.

Pain then, is "the registration in consciousness of an imperative protective reflex." That it is not registered does not change the harmful result of the stimuli impinging on the peripheral receptor or alter the radiation of the stimuli through association fibers to the sympathetic nervous system—only in degree. The excitable centers of this system lie parallel with the vertebral column in the various spinal ganglia, extending from the vasomotor center of the medulla to the sacral plexus. Incoming noci or anoci associations are registered reflexly not only at the level of their entrance to the cord, but the reflexes overflow into adjacent segments and consciousness is but an adjunct of this vital mechanism and is a type of this overflow; sense of pain is the psychical adjunct of the protective reflex.

The tonic state of vasoconstriction as maintained by the sympathetic nervous system has no name with us other than "normal blood pressure." It is only when this tone fails and fails dramatically, that we name it; and then we call it shock—almost a colloquialism in its flexibility of application.

Pain is protective in two ways; it reflexly and subconsciously aids the organism to escape from noci and destructive stimuli, and at the same time stimulates reflexly the vasoconstriction fibers. Under profound anæsthesia this con-

strictor reflex is lost, and the noci-stimuli being unopposed, the blood pressure falls.

Shock, it is generally conceded, is produced by an inhibition or paralysis of the vasoconstrictor fibers of the sympathetic system. As causes of shock traumatism, emotion and hemorrhage are familiar. Careful hair-splitting differences have been drawn between shock, syncope and collapse, but in the ultimate analysis they are all due to anæmia of the vasomotor centers. This central anæmia may follow hemorrhage; it may result from a sudden yawning of the cavernous spaces of the splanchnic area following vasoconstrictor paralysis due to trauma; it may come about slowly, as when the wasting diseases or cachexias insidiously undermine the reflex irritability of the vasoconstrictor centers until there is little margin left for emergency. As the anæmia proceeds, exosmosis of serum from the adjacent tissues into the vessels commences in a frantic effort to maintain the vascular content; this lowers the specific gravity of the blood, thus increasing the anæmia and this makes further draft upon vasoconstrictor irritability. Patients in shock from trauma or hemorrhage often recover temporarily only to lapse into shock again; this is due to further increase in the anæmia from exosmosis. Moreover, reflex "after discharge" of noci reflexes may often serve to deepen or re-induce shock of traumatic origin.

Some few generalizations appear emergent from the foregoing considerations. Shock may be potential as in depleted conditions and imminent upon the slightest traumatism; it may be profound and follow suddenly upon grave trauma or torrential hemorrhage.

Recovery from shock, once it is profoundly established depends almost entirely upon whether or no compensatory irritability of the vasoconstrictor centers exists. Early bandaging of the extremities, lowering of the head and shoulders, hypodermics of caffeine also help. Strychnine, digitalis and camphor do not raise the blood pressure and are useless in these cases and may take away all chance of compensation by causing acute cardiac dilatation.

The saline infusion, whereas it increases the anæmia may, if promptly used, maintain enough peripheral resistance to the heart output to insure its rhythm and keep the blood moving in the splanchnics. In lost compensation saline and all medication fail and the only hope is direct transfusion.

This rather gloomy view of profound shock, with its limited possibilities in treatment, has been accurately justified through careful laboratory kymographic and manometric experiment by competent observers. The facts have been registered by instruments of precision and the experimental animals checked by control.

But as in other blind alleys of medical research where a specific treatment is not readily forthcoming, investigators have turned to the other

aspect of the question, *i. e.*, the prevention of shock. We have gone far in this direction when we learn again central nervous system and smooth-muscle physiology as applied to shock; when we understand the nature and multiplicity of noci or paralyzing associations in operative and other work. General anæsthesia does not materially lessen shock and, if profound, promptly induces it—hence the newer NO₂, O and ether methods.

Traction on the tongue during anæsthesia promptly inhibits cardiac action and paralyzes vasoconstrictor control. Exposure of the peritoneum, dragging on the mesentery and handling the bowel are *specifics* for inducing shock. Venous oozing, itself indicative of shock, maintains the vicious circle. Section of large nerve trunks whose depressor fibres during anæsthesia are prepotent over the pressor fibers is a tremendous factor in shock. Skin incisions of all kinds entail powerful noci associations.

The psychic noci stimuli involved especially in fear and horror are powerful vascular depressants, and peculiarly vicious because they *persist*.

In several American clinics, notably those of Dr. George Crile and Dr. Joseph Bloodgood, an earnest effort to minimize shock-producing factors is being made. Blocking of nerves and skin areas before incision, mental suggestion and the judicious use of morphia before operation, the more extensive employment of NO₂ and less of ether in anæsthesia, the careful estimating of operative risks and the employment of ingenious external pressure garments—have all lessened the mortality one-half. The more general and earlier use of enteroclysis forestalls the oncoming shock with its serous exosmosis while it is yet potential, and sympathetic system irritability is still unimpaired. Dr. John Hartwell has shown that the slowly developing shock accompanying the vomiting of intestinal obstruction may be postponed indefinitely if a quantity of saline greater than the amount of the vomitus be constantly infused; here is a most important clinical device in this most aggravated type of surgical risk. The same method operates equally well in shock ensuing upon the terrific purging of cholera and ptomaine poisoning. Most of the oncoming conditions of potential shock, if earnestly looked for, can be detected early and successfully combatted.

Those cases of trauma which are already in shock when first seen and which are not bleeding do not need dressing; they do not need amputation or other operation—they need morphine and physiologic rest. Crile says: "Scarcely any cases in surgical practice require so much gentleness and precision as mangled limbs." A modification of the earlier methods of surgical preparation has markedly lessened the tendency to shock.

Starvation and depletion by catharsis are un-

necessary before operation; the patient should be left undisturbed by operative preparation or ward commotion; and if, in suitable cases the time of operation can be announced but a relatively brief time before hand the element of anxiety and fear can be reduced to a minimum.

The routine employment of adequate doses of morphine immediately following operative procedure serves to blockade "after discharge" of noci stimuli from the traumatized surface and insures that euphoria and tranquility which are so essential in promoting vasomotor compensation.

AN APPARENT CURE IN A CASE OF RABIES.

By JAMES H. HABERLIN, M.D.,
PAWTUCKET, R. I.

EHRlich and his disciples believe that a specific chemical affinity exists for every specific micro-organism, and that when this specific affinity is administered to the infected host a cure obtains.

Following Ehrlich's idea, Barton Lisle Wright has developed the theory that mercury is the chemical affinity for every vegetable micro-organism, and expresses his thesis thus: (Vegetable antigen + Hg + antibody + complement = complement fixation (cure).

Incidentally it has been determined with reference to mercury and some other agents employed, that the specific chemical must be introduced in sufficiently large initial doses or, as an apparent paradox, there is observed the phenomenon of immunization of the parasite against the destructive action of the chemical agent by the results of the repetition of inadequate doses.

Biological study reveals that micro-organisms in the animal economy vary in their resistance to chemical antiseptics, thus the pus producing vegetable parasites are normally of a higher degree of resistance than the cells or tissues of the host, while for the destruction of other micro-organisms chemical antiseptics are available that have a minimum deleterious effect on the animal economy.

Twenty-five years ago, Guido Bacelli, anticipating the dynamics of this proposition in its application to one infectious entity, at least, announced that he had succeeded in curing tetanus with the subcutaneous injection of carbolic acid. Statistics now reveal that his method of treatment of the disease, or its modification by the choice of the intramuscular site of injection, provides the most successful means of cure of tetanus many times, Kintzing reporting recently seven cures in as many cases following the intramuscular administration of dilute phenol solution, representing one grain of pure phenol, repeated every three hours. Six of these cases were seen for the first time after the inception

of the paroxysms, two of them having been seen forty-eight hours after the seizures.

The availability of a bacteriotropic medium obviously will be determined in very considerable part, if not altogether, by the possibility of its being introduced to particular channels in the economy. In the instance of rabies, Pasteur has demonstrated that the difficulty of inoculating against the disease was due to failure to introduce the virus into the nervous system, in which the infectious agent finds its habitat, and where it exerts its characteristic noxious action. Barterelli's experiments prove that the pathogenic medium reaches the salivary glands of rabid dogs by the way of nerves and not of blood vessels.

Hence I have imagined the availability of phenol, properly exhibited, with its well recognized selective affinity for nerve tissue, its habit of loose combination with cell protoplasm, and chronic union with bacterial substances, for our purpose of sterilization of these pathways. It is to be noted that carbolic acid is an alcohol, of the formula C_6H_5OH , and that its action in precipitating albumins resembles the effect of alcohol, C_2H_5OH , rather than that of other precipitants, mercurial salt solutions, for example. Because of this fact the circulation of blood and lymph at the site of injection prevents the development of untoward local phenomena, which reasonably might be anticipated otherwise, upon the introduction of so large volume of irritant; while the drug, consequently having been washed into the circulation, is afforded access to the central nervous system, where it exerts its specific action.

A study of the many and striking points of resemblance of tetanus and rabies and of the problems of immunity affecting each, suggested further the advisability of attempting the application of this method of treatment in the latter disease; and the apparently unprecedented results of cure in what seems to have been unquestionably a case of rabies suggest the motive for this paper.

The cases herein described were reported to the Pawtucket Medical Society at its monthly meeting in April, 1912. There was no discussion, excepting that of one man who reported previous successes of investigators working along similar lines, which I have learned to be unfounded. Shortly after my report to the society, another case developed in this locality, which resulted in death after the usual attempts of amelioration. Personal communication with the physicians in attendance on this case substantiates the cardinal symptoms and clinical course as practically identical with the cases dealt with in this paper.

CASE I.—E. B., single, 21 years, shipping clerk, United States, entered Park Place Hospital, March 22, 1912, at 5.00 A. M., died March 23, 1912, at 12.15 A. M.

Dr. W. H. Heimer first saw E. B. at 9.00 P.

M., March 21st., and found him complaining of lassitude, anorexia, insomnia, and dyspnoea. He had been unable to work all day because of an aggravated attack of vertigo. He looked and acted as one demented. He became worse rapidly and it was deemed advisable to remove him to the hospital for observation. On the way he several times attempted escape, but each time, having been restrained, submitted to the journey.

In the hospital his pressure of activity was very great, and he insisted upon sitting up in bed, complaining of dyspnoea and air hunger, and eructating loudly at frequent intervals.

I saw him at this time with the attending physician, but was unable to make a diagnosis or suggestion for treatment. It was not until several hours later that the history of dog bite was elicited, when it was learned that he had been bitten on the face five weeks previously. At this time, with the development of characteristic symptoms, Dr. Heimer made the diagnosis.

At 9.00 A. M. his first delusions appeared, which were mainly of persecution, and he became dangerously violent. His violence assumed a purposeful character in keeping with his delusions, and resulted in persistent attempts to injure the attendants. He hurled a glass graduate with great force and alarming precision at one of the physicians, attempted to bite others and spat at them. He seemed to select a few for the display of his venom, while others irritated him not at all. At intervals he was seemingly perfectly lucid, but constantly expectorated, clutched frantically at his chest, and suffered more and more profound dyspnoea. He did not complain of any other pain or discomfort. There was nothing of moment to be observed at the site of inoculation.

He was placed early in a restraining jacket, in which, despite everything that could be accomplished in his behalf, he continually struggled until death supervened. Two hours before death he complained of blindness. He died seventeen hours after admission, following several violent, clonic seizures of all the skeletal musculature.

CASE II.—J. MacE., 47 years, married, white, Nova Scotia, dog officer. Family history negligible.

Previous History.—Never sick until thirteen years ago, when, as a result of a trolley car accident, his left arm was amputated below the insertion of the deltoid. He has been bitten scores of times by dogs, but never has observed any ill effects, except an occasional local soreness; nor has he ever experienced any apprehension of serious results of a bite.

Personal History.—Smokes three or four cigars daily. Drinks beer to excess. Drinks whiskey occasionally and, again, occasionally to excess. He never has permitted his habit of drinking to interfere with the regularity of his meals. Appetite always good. Sleeps well.

Bowels regular. Disposition even; not easily worried.

Present Complaint.—Five weeks ago, while attempting to catch a dog that was suspected of being rabid, and had bitten E. B., whose case has been reported above, he was bitten on the calf of the right leg. He paid no more than usual attention to the bite, which in his experience amounted to absolute neglect. The wound seemed to heal uneventfully. On March 25, 1912, at 6.20 P. M., he left his horse at a stable about three-quarters of a mile from his residence and started to walk home. He now says that he remembered nothing from that time until early morning of the following day, when he thinks that he was awakened by the insertion of a hypodermic needle.

His wife gives the history of the onset of the attack as follows: For three or four days he had seemed taciturn and morose, had brooded continually and had lost his appetite. Upon being asked about his sensations and emotions he replied simply that he was "all right." His personality had undergone so marked a change, however, that the family physician, Dr. John H. Miller, was called. Nothing especial was accomplished at this time in the way of ameliorating conditions, nor was the causation of the patient's varying mood established.

At 6.45 P. M. on the day of the attack, he entered his home in apparently the same general condition as evidenced during the preceding few days. He sat in a chair near a table and leaned forward, putting his head on the table between his hands, remained in this attitude for a few minutes, and then, for the first time displaying any emotional excitement, arose and abruptly went to his bed. His wife was attracted soon by his crying and throwing his arms from side to side. Within a few minutes he began to clutch frantically at his throat, as if there were an obstruction to his breathing, opening his mouth widely in the meantime, and bringing his teeth together with great violence. He seemed perfectly oriented as to time, place and persons, and fully to realize his predicament. He expressed the idea that something was wrong in his throat, for, having attempted to drink repeatedly, and being absolutely unable to swallow, he would grasp his throat, in the midst of a paroxysm, and nod his head to the bystanders, as if to make them understand his recognition of the seat of the trouble. His condition rapidly became aggravated, and further attempts to swallow resulted in forcible ejection of the liquids taken.

When Dr. Miller arrived on the occasion of his second visit the patient had become maniacal, and was restrained with difficulty by the efforts of several men. He made no attempt to bite or strike anyone, but begged constantly to be "let go." In the interim of the convulsive seizures he reminded those who had held him that their grips had been uncomfortable. When placed in the restraining jacket he became greatly agitated

and begged to have the jacket removed. General convulsive seizures of several minutes' duration now supervened, followed by periods of comparative calm, but during which clonic exacerbations of the spastic condition of the pharyngeal musculature were apparent. There was no trismus. He drooled and spat saliva constantly, but there was no suspicion of "frothing at the mouth."

The constant spitting was the symptom, which, when taken into consideration with the laryngopharyngeal spasm, seemed to us the most striking. Dieulafoy is the only writer who especially emphasizes this important feature of the disease, and explains it by stating that it is an expression of the desire of the patient to prevent the slightest movement of swallowing. This appears to be not an adequate explanation, however, and is open to discussion, perhaps, because of the fact, observed in this case, that in the midst of this period of constant spitting the patient frequently attempted to drink.

Questioned as to the site of his discomfort, our patient invariably referred to the pain and soreness of his pharynx, and bitterly deplored his inability to swallow.

As the disease progressed, the laryngeal muscles became tetanic to a degree that seemed to threaten suffocation, and the labored attempts at expiration resulted in the so-called "bark," a noise more closely resembling a harsh, brassy cough than a bark in this case, however. At this time was also noted a very considerable degree of exophthalmos, dilatation of the pupil, and profuse lachrymation and perspiration. Respiration now rose from 30-40 per minute during the skeletal paroxysms to 80-90 directly following them. The pulse was full, regular, of good quality, 130 or thereabout in frequency and of high arterial tension. Tachycardia, 100 or so, persisted for several hours following the cessation of the paroxysms.

Our patient's face is naturally florid; during the height of the paroxysms it was livid. His temperature at 8.00 P. M. was 104.6 degrees F. Blood pressure was not recorded, but was extremely high.

This describes the clinical picture when I saw the patient in consultation with Dr. Miller at 8.30 P. M., and when it was decided to inject carbolic acid according to the technic employed by Guido Bacelli and his followers in cases of tetanus. Hence 10 c.c. of 1% aqueous solution of phenol were injected into the subcutaneous tissues of the abdominal wall, by means of an Ehrlich-Hata syringe. At 9.00 P. M. 10 c.c. of 2% solution were injected similarly and repeated in an hour. At 11.00 P. M. there was a very perceptible improvement in the patient's condition. Hourly doses of the 1% solution were now resumed and administered until 8.00 A. M. A total of eleven doses, therefore, of the 1% solution and two doses of the 2% solution were administered, or, in the aggregate, an equivalent

of one and one-half grams (twenty-two and one-half grains), of pure phenol.

At 2.00 A. M., six hours after beginning treatment, the patient became somnolent, and when aroused was able to swallow readily. At this hour he was aroused for the first time by the insertion of the large calibre needle, and told us that we were giving him a hypodermic injection. He also stated that he now was conscious of his surroundings for the first time since early evening, and when reminded of his previous actions and statements denied any realization of them.

He was catheterized at 2.00 A. M., about eight ounces of urine being recovered, which contained a trace of albumin, but was otherwise normal. He did not require catheterization again, and subsequent specimens were normal.

On the fourth day the patient was out of doors, and on the sixth day resumed work, there being no further sequela than a few days' prostration, which reasonably may be ascribed to excess muscular activity. There were no evidences, locally or generally, of any deleterious effects of the exhibition of the carbolic acid.

Remarks.—These two cases constitute the sum total of my experience with rabies. I should like, however, to lend whatever weight my brief knowledge may justify, to my reiteration and support of Strumpell, when he says of the agonies of hydrophobia, that "the terrible anxiety once seen is never forgotten." On the other hand, I have had under observation for considerable periods of time, in hospital and private practice, scores of cases of alcoholic psychoses, and do not see anything of their mutual resemblance with rabies, which would be likely to deceive the experienced observer. This is the differential diagnosis that it was sought to establish beyond any peradventure in this case.

The arguments against the existence of the disease as a pathological entity are absurd and an insult to scientific medicine. Their particular consideration here is obvious; they are mentioned simply in passing.

The fact of this patient's having had the disease and the incident of his recovery prove nothing, so far as the treatment of the disease is concerned, and are reported now simply as a matter of record and suggestion. It is already believed by thinking men in medicine that hydrophobia does not spell one hundred per cent. mortality necessarily, although recoveries are very rare. The matter of this patient's having been bitten previously by suspiciously acting dogs, in relation to the problem of acquired immunity, may not be dismissed, perhaps, with a word. Everything connected with the recovery in the case is a subject for pure speculation at this stage of our knowledge, or lack of knowledge.

RELATION BETWEEN CARIOUS TEETH AND MALNUTRITION.*

By CHARLES D. CARTER, D.M.D.,
KINGSTON, N. Y.

MR. PRESIDENT and members of the Ulster County Medical Association:—I am honored and grateful for this opportunity of addressing you and sincerely hope you will not be disappointed in my few remarks. My subject this evening is: "Relation Between Carious Teeth and Malnutrition." The organs disturbed by diseases of the teeth and the oral cavity will be those to which they bear the closest relation. It is well known that the teeth sympathize with each other to such an extent that it is sometimes difficult to determine which one and sometimes which jaw is affected. Otitis media may exhibit itself as toothache, while on the other hand pains in the middle ear are very often mere reflexes of odontalgia. The eye sympathizes with the teeth to such an extent as sometimes to exhibit a profuse lachrymal discharge as the accompaniment of toothache, and alveolar abscess has been diagnosed by the condition of the pulse. The otologist and the dentist should be on intimate terms, as mutual consultation is frequently desirable, owing to the intimate relations of organs concerned.

A perfect masticating apparatus uncared for, left to the corroding action of germs and fermenting carbohydrate foods, sugars and starches will in time break down and decay. The process of mastication is the beginning of that series of chemical reactions which change raw material into blood and cells. The use of the teeth is to crush and cut food, converting it into pulp. If the teeth are kept clean and in good repair mastication will be more thorough, and a good start made toward proper digestion. Diseased gums and decayed teeth are in many cases the indirect cause of malnutrition, and as malnutrition effects the whole body, the mouth receives its share, and its resistance to destructive processes is lowered.

Improperly masticated food passes to the stomach where the gastric juice can act on the smallest particles only, while the remainder which has only the surface digested passes to the small intestine where the process, complete or incomplete, is repeated. Decayed teeth are incubators of germs, places for toxins, ptomaines and poisons to be manufactured, and inefficient tools to perform a very necessary operation. Sound teeth, properly placed but unclean, harbor and propagate multitudes of micro-organisms. Between twenty and thirty distinct varieties of bacteria have been found in such mouths. The daily secretion of saliva is about forty-eight ounces, but it has no antiseptic properties as yet discovered. The gastric juice through the agency of the hydrochloric acid is capable of

* Read before the Medical Society of the County of Ulster, at Kingston, N. Y., October, 1912.

destroying most of these micro-organisms taken in the food. During the resting period, between meals, hydrochloric acid is not secreted, but the constant secretion of impregnated saliva is being constantly swallowed so that a continuous ingestion of germs of even low toxic power in time infects the lining membrane of the stomach, and impairs the glands that secrete the hydrochloric acid and pepsin. Other germs may pass into the small intestine where they can be absorbed into the blood stream, infect the kidneys, liver and pancreas or produce toxins of all degrees of intensity. Infection of the kidneys, liver, pancreas or any of the digestive organs interferes with their functions, so that perfectly proper digestible food cannot be completely assimilated, and cannot be in a condition to be built up into cell substance. This results in malnutrition. Food not properly masticated reaches the stomach in a state not sufficiently chewed to be acted on throughly by the gastric juice, this may incite gastritis, or passing into the small intestine may cause putrefaction, and constipation, interfering with the proper nutrition of the body cells.

Fermented starches and sugars are a congenial media for the propagation of micro-organisms other than those producing fermentation. The combination of abnormal fermentation with the great variety of toxic germs lays the foundation for such pathological conditions as dyspepsia, gastric catarrh or septic gastritis which interferes with proper nourishing of the body cells. These changes or results are not produced in a day, a week or months; it may take years but they are sure to materialize.

Let us consider a child from five to ten years of age and see what we find in probably seventy-five cases out of one hundred. In the first place she hasn't had proper instruction in keeping her mouth clean, because she has not been to the dentist, or because the dentist has been careless and didn't take time to notice the condition of her mouth, and instruct her in oral hygiene. She, in time, has a serious toothache, and her mother usually brings her to the dentist and this is what he finds: Mouth unclean, breath foul, cavities in six molars, alveolar abscesses on temporary teeth, pus about the sockets, and root-of temporary teeth lying in the soft tissues. There has been a steady flow of pus to the stomach and intestines for weeks, making a good foundation for chronic diseases of all kinds. Such a condition affects the child's mental ability, causing her to be dull and stupid. In order to correct this condition permanently, the mouth should first be put in a sanitary condition by a competent dentist, and you will then find your diseased conditions will be controlled much easier.

Right here let me say something about indiscriminate extracting of temporary teeth. You will agree with me, I am sure, when I say we have both in the dental and medical profession men who will extract children's temporary teeth

without thought of the future or present need of them for masticating. The premature extraction of temporary teeth not only interferes with the nutrition of the child but will change the entire occlusion of the permanent teeth and shape of the oral cavity. The temporary teeth should be filled and retained so long as the permanent teeth show no inclination to erupt.

I had a patient last month, a man about forty-five years of age, who had two temporary molars still in place, and in good healthy condition. This is not an unusual case by any means.

The most distressing and destructive lesion of the oral cavity, and one which receives the least attention from the average practitioner of today is pyorrhea alveolaris. This disease, which as is well known destroys the sockets of the teeth, and causes their loss if not given proper treatment, has a still more serious effect upon the general constitution of the patient affected. A dentist realizes that if the condition is neglected, the patient will sooner or later lose his teeth, but how many practitioners realize the harm that is being done to the system while the pus from the sockets passes down the throat to the stomach, and from there to the intestines to be passed out through the body in the blood stream, causing any number of diseases? Rheumatism and gout may be traced to pyorrhea alveolaris. In an article published in the *Journal of the American Medical Association*, Dr. J. B. Murphy states that every type of non-traumatic joint inflammation is a manifestation of a primary infection in some other portion of the body. He cites a typical case of metastatic arthritis due to alveolar suppuration or pyorrhea alveolaris. Drs. Wirgman and Turner report in the *London Lancet* of recent date forty-two cases of rheumatism and gout, in the majority of which they believe pyorrhea alveolaris to have been the direct cause, because a cure of the local conditions was promptly followed by a subsidence of the constitutional symptoms. I could cite more authority similar to the above, but I believe the foregoing cases will suffice to prove the importance of the oral cavity in relation to general health.

A considerable proportion of pharyngeal and tonsillar affections are the direct result of lesions within the oral cavity, brought about by continuity of tissue.

Complications arising from impacted wisdom teeth and their investments are one of the most frequent of these. Owing to the lack of development, especially in the length of the body of the lower jaw, frequently there is not sufficient room for the eruption of the tooth, and it becomes imbedded in the tissues, a constant source of irritation. Sometimes the inflammation about it is so intense as to prevent the opening and closing of the mouth; at times there is a breaking down of tissues and suppuration follows. From the initial point of the lesion dark red lines extending down into the pharynx may be observed,

and there is a distinct and acute inflammation of the pillar of the fauces with great discomfort and acute pain. Nine out of ten cases of facial neuralgia are caused by diseased teeth. The irritation from caries may be so severe or so long continued that the trunk of the nerve is affected, and its functions are so modified that it remains in a permanent irritable condition. In diagnosing a case of neuralgia, the mouth and teeth should be the first place to look for the trouble, and in most cases an exposed pulp, irritation from tartar or rough edges of fillings will be found to be the cause which places the case entirely in the hands of the dentist.

Roots of decayed and devitalized teeth may sometimes penetrate the floor of the antrum of Highmore and if abscessed will discharge into the cavity, becoming a constant source of irritation to the lining membrane, and in time cause a breaking down of the structure of the mucous follicles. In this manner the roots of teeth may undoubtedly be the cause of actual empyema.

I could spend a longer time in showing you the importance of oral hygiene, but I think you will agree with me when I say that a clean mouth and a well-kept set of teeth is very necessary to general health.

LEGISLATIVE NOTES.

CHAPTER 559.

AN ACT TO AMEND THE PUBLIC HEALTH LAW, GENERALLY.

Became a law May 17, 1913, with the approval of the Governor.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section two of chapter forty-nine of the laws of nineteen hundred and nine, entitled "An act in relation to the public health, constituting chapter forty-five of the consolidated laws," is hereby amended to read as follows:

§ 2. State department of health; *commissioner of health; deputy.* The state department of health and the office of commissioner of health are continued. The commissioner of health shall be the head of such department. Such commissioner shall be appointed by the governor, by and with the advice and consent of the senate, and shall be a physician, a graduate of an incorporated medical college, of at least ten years' experience in the actual practice of his profession, and of skill and experience in public health duties and sanitary science. *During his term of office he shall not engage in any occupation which would conflict with the performance of his official duties.* The term of office of the commissioner shall be six years, beginning on the first day of January of the year in which he is appointed. *The commissioner of health shall appoint and at pleasure remove a deputy commissioner, who shall be a physician actively engaged in the practice of his profession in this state for at least five years. The deputy shall perform such duties as shall be prescribed by the commissioner.*

§ 2. Such chapter is hereby amended by inserting therein three new sections, to be sections two-a, two-b and two-c, to read as follows:

§ 2-a. *Public health council. There shall be a public health council to consist of the commissioner of health, and six members hereinafter called the appointive members, to be appointed by the governor, of whom at least three shall be physicians and shall have had training or*

experience in sanitary science, and one shall be a sanitary engineer. Of the appointive members first appointed one shall hold office until January first, nineteen hundred and fourteen, one until January first, nineteen hundred and fifteen, one until January first, nineteen hundred and sixteen, one until January first, nineteen hundred and seventeen, one until January first, nineteen hundred and eighteen, and one until January first, nineteen hundred and nineteen, and the terms of office of members thereafter appointed, except to fill vacancies, shall be six years. Vacancies shall be filled by appointment for the unexpired term. The public health council shall meet as frequently as its business may require, and at least twice in each year. The governor shall designate one of the members of the public health council as its chairman. The commissioner of health upon the request of the public health council shall detail an officer or employee of the department of health to act as secretary of the public health council, and shall detail from time to time such other employees as the public health council may require. The public health council shall enact and from time to time may amend by-laws in relation to its meetings and the transaction of its business. The members of the public health council other than the commissioner of health shall each receive an annual salary of one thousand dollars and all members shall be reimbursed for their reasonable and necessary traveling and other expenses incurred in the performance of their official duties.

§ 2-b. *Sanitary code. The public health council shall have power by the affirmative vote of a majority of its members to establish and from time to time amend sanitary regulations, hereinafter called the sanitary code, without discrimination against any licensed physicians. The sanitary code may deal with any matters affecting the security of life or health or the preservation and improvement of public health in the state of New York, and with any matters as to which jurisdiction is hereinafter conferred upon the public health council. The sanitary code may include provisions regulating the practice of midwifery and for the promotion of health in any or all Indian reservations. Every regulation adopted by the public health council shall state the date on which it takes effect, and a copy thereof, duly signed by the secretary of the public health council, shall be filed in the office of the secretary of state, and a copy thereof shall be sent by the commissioner of health to each health officer within the state, and shall be published in such manner as the public health council may from time to time determine. The provisions of the sanitary code shall have the force and effect of law and any violation of any portion thereof may be declared to be a misdemeanor. No provision of the sanitary code shall relate to the city of New York or any portion thereof, and every provision of the sanitary code shall apply to and be effective in all portions of the state except the city of New York unless stated otherwise.*

§ 2-c. *Enforcement of sanitary code. The provisions of the sanitary code shall, as to matters to which it relates, and in the territory prescribed therefor by the public health council, supersede all local ordinances heretofore or hereafter enacted inconsistent therewith. Each city, town or village may, in the manner hereinafter prescribed, enact sanitary regulations not inconsistent with the sanitary code established by the public health council. The public health council shall have power to prescribe by regulations the qualifications of directors of divisions, sanitary supervisors, local health officers hereafter appointed and public health nurses.*

The actions, proceedings and authority of the state health department in enforcing the provisions of the public health law and sanitary code applying them to specific cases shall at all times be regarded as in their nature judicial, and shall be treated as prima facie just and legal. All meetings of said public health council shall in every suit and proceeding be taken to have been duly called and regularly held, and all regu-

lations and proceedings to have been duly authorized unless the contrary be proved.

The public health council shall have no executive, administrative or appointive duties. It shall, at the request of the commissioner of health, consider any matter relating to the preservation and improvement of public health, and may advise the commissioner thereon; and it may from time to time submit to the commissioner any recommendations which it may deem wise.

§ 3. Section three of such chapter is hereby amended to read as follows:

§ 3. Compensation of officers and employees. The commissioner of health shall receive an annual salary of eight thousand dollars, and his expenses actually and necessarily incurred in the performance of his official duties, to be paid monthly on the audit of the comptroller. The deputy commissioner of health shall receive an annual salary of five thousand dollars and his expenses actually and necessarily incurred in the performance of his official duties, to be paid monthly on the audit of the comptroller. The commissioner of health may employ such clerical and other assistants as are necessary for the proper performance of the powers and duties of the department, and fix their compensation within the amount appropriated therefor by the legislature.

§ 4. Such chapter is hereby amended by inserting therein a new section, to be section three-a, to read as follows:

§ 3-a. Divisions. There shall be in the state department of health the following divisions, together with such other divisions as the commissioner may from time to time determine:

1. Division of administration;
2. Division of sanitary engineering;
3. Division of laboratories and research;
4. Division of communicable diseases;
5. Division of vital statistics;
6. Division of publicity and education;
7. Division of child hygiene;
8. Division of public health nursing;
9. Division of tuberculosis.

Each such division shall be under the management of a director appointed by the commissioner.

§ 5. Section four of such chapter is hereby amended to read as follows:

§ 4. General powers and duties of commissioner. The commissioner of health shall take cognizance of the interests of health and life of the people of the state, and of all matters pertaining thereto. He shall exercise general supervision over the work of all local health authorities except in the city of New York. He shall be charged with the enforcement of the public health law and the sanitary code. He shall make inquiries in respect to the causes of disease, especially epidemics, and investigate the sources of mortality, and the effect of localities, employments and other conditions, upon the public health. He shall obtain, collect and preserve such information relating to mortality, disease and health as may be useful in the discharge of his duties or may contribute to the promotion of health or the security of life in the state. He may issue subpoenas, compel the attendance of witnesses and compel them to testify in any matter or proceeding before him, and a witness may be required to attend and give testimony in a county where he resides or has a place of business without the payment of any fees. The commissioner of health may reverse or modify an order, regulation, by-law or ordinance of a local board of health concerning a matter which in his judgment affects the public health beyond the territory over which such local board has jurisdiction; and may exercise exclusive jurisdiction over all lands acquired by the state for sanitary purposes. The commissioner of health and any person authorized by him so to do, may, without fee or hindrance, enter, examine and survey all grounds, erections, vehicles, structures, apartments, buildings and places.

§ 6. Such chapter is hereby amended by inserting therein three new sections, to be sections four-a, four-b and four-c, to read, respectively, as follows:

§ 4-a. Sanitary districts; sanitary supervisors; public health nurses. The commissioner of health shall from time to time divide the state, except cities of the first class, into twenty or more sanitary districts. He shall appoint for each of such districts a sanitary supervisor who shall be a physician. Each sanitary supervisor, under the direction of the commissioner of health and subject to the provisions of the sanitary code, shall, in addition to such duties as may be imposed upon him, perform the following duties:

1. Keep himself informed as to the work of each local health officer within his sanitary district;
2. Aid each local health officer within his sanitary district in the performance of his duties, and particularly on the appearance of any contagious disease;
3. Assist each local health officer within his sanitary district in making an annual sanitary survey of the territory within his jurisdiction, and in maintaining therein a continuous sanitary supervision;
4. Call together the local health officers within his district or any portion of it from time to time for conference;
5. Adjust questions of jurisdiction arising between local health officers within his district;
6. Study the causes of excessive mortality from any disease in any portion of his district;
7. Promote efficient registration of births and deaths;
8. Inspect from time to time all labor camps within his district and enforce the regulations of the public health council in relation thereto;
9. Inspect from time to time all Indian reservations and enforce all provisions of the sanitary code relating thereto;
10. Endeavor to enlist the co-operation of all the organizations of physicians within his district in the improvement of the public health therein;
11. Promote the information of the general public in all matters pertaining to the public health;
12. Act as the representative of the state commissioner of health, and under his direction, in securing the enforcement within his district of the provisions of the public health law and the sanitary code.

The commissioner of health, whenever he may deem it expedient so to do, may employ such number of public health nurses as he may deem wise within the limits of his appropriation, and may assign them from time to time to such sanitary districts and in such manner as in his judgment will best aid in the control of contagious and infectious diseases and in the promotion of public health.

§ 4-b. Duties of commissioner with respect to laboratories. The commissioner of health shall establish and maintain one or more laboratories with such expert assistants and such facilities as are necessary for routine examinations and analyses, and for original investigations and research in matters affecting public health. He shall have authority to make, at the expense of the state, such examinations and analyses at the request of any health officer or of any physician. He may enter into contracts with laboratories in localities accessible to the various portions of the state for the prompt examination of specimens received from local health officers or physicians and for the immediate report thereon, at the expense of the state; provided that all such laboratories shall conform to standards of efficiency established by the public health council, and that no obligation shall be incurred by the commissioner in excess of the sums available therefor.

§ 4-c. Duties of commissioner with respect to hospitals for contagious diseases. The commissioner of health shall from time to time submit to the authorities of the several municipalities of the state such recommendations as he may deem wise as to the establishment of hospitals for contagious diseases, indicating the diseases for which in his judgment provisions should be made and the extent of such provision. It shall be the

duty of the commissioner to inspect from time to time all hospitals for contagious diseases maintained under the jurisdiction of any municipal authority and to report as to the condition and needs of such hospitals to the authorities of the municipality, and to include an abstract of such reports in his annual report. The public health council may from time to time establish regulations for the maintenance of hospitals for contagious diseases.

§ 7. Sections eleven and thirteen of such chapter are hereby amended to read, respectively, as follows:

§ 11. Power commissioner where board of health fails to appoint health officer. *If any local board of health shall fail to appoint a health officer, the commissioner of health may, in such municipality, exercise the powers of a health officer thereof. The expenses lawfully incurred by him in such municipality shall be a charge upon and paid by such municipality until such time as a local health officer shall be appointed therein, whereupon the jurisdiction of the commissioner of health conferred by this section shall cease.*

§ 13. Tenement houses in cities. The commissioner shall have power to examine into the enforcement of the laws relating to tenement houses in any city. Whenever required by the governor, he shall make such an examination and shall report the results thereof to the governor within the time prescribed by him therefor.

§ 8. Section fourteen of such chapter, as amended by chapter ninety-two of the laws of nineteen hundred and ten, is hereby amended to read as follows:

§ 14. Approval of plans for certain works built by state and inspection of state institutions by state commissioner of health. In all buildings and institutions, owned, maintained or controlled by the state, the plans for all water supply, sewage, sewage-disposal and garbage-disposal works, shall be subject to the approval of the state commissioner of health before being adopted or constructed. *The state commissioner of health shall make from time to time and at least once in each year, an examination and inspection of the sanitary conditions of all state institutions and transmit copies of his report and recommendations thereon to the president of the board of managers or trustees or other authority in charge of such institution and to the fiscal supervisor of state charities in case of institutions reporting to that official. It shall be the duty of the superintendents of said institutions to immediately report an outbreak of a contagious or infectious disease to the state commissioner of health, and upon receipt of such report the state commissioner of health shall advise the superintendent of said institution as to the best means to effectually control said disease. It shall be the duty of the state commissioner of health to make regular analysis of the water supplies of said institutions, at least twice in each year, and furnish copies of his reports thereon to the president of the board of managers or trustees or other authority in charge of the institutions, and to the fiscal supervisor of state charities in case of institutions reporting to that official.*

§ 9. Section twenty of such chapter, as amended by chapter one hundred and sixty-five of the laws of nineteen hundred and nine, is hereby amended to read as follows:

§ 20. Local boards of health. There shall continue to be local boards of health and health officers in the several cities, villages and towns of the state. In the cities, except cities of the first and second class, the board shall consist of the mayor of the city who shall be its president, and at least six other persons, one of whom shall be a competent physician, who shall be appointed by the common council, upon the nomination of the mayor, and shall hold office for three years. Appointments of members of such boards shall be made for such shorter terms as at any time may be neces-

sary, in order that the terms of two appointed members shall expire annually. In the cities, except cities of the first and second class, and such other cities whose charters otherwise provide, the board shall appoint, for a term of four years, a competent physician, not one of its members, to be the health officer of the city, and shall fill any vacancy that now exists or may hereafter exist from expiration of term or otherwise in the office of health officer of the city. *In villages the board shall consist of the board of trustees of such village. In towns the board of health shall consist of the town board.* The local board of health shall appoint a competent physician, not a member of the local board of health, to be the health officer of the municipality. The term of office of the health officer shall be four years and he shall hold office until the appointment of his successor. He may be removed for just cause by the local board of health or the state commissioner of health after a hearing; such removal by the local board of health must be approved by the state commissioner of health. The health officer need not reside within the village or town for which he shall be chosen, but unless he shall, he must reside in an adjoining town. Notice of the membership and organization of every local board of health shall be forthwith given by such board to the state department of health. The term "municipality," when used in this article, means the city, village or town for which any such local board may be or is appointed. The provisions herein contained as to boards of health, and for the appointment of health officers, shall apply to all towns and villages, whether such villages are organized under general or special laws.

All rights, powers, duties and obligations of each and every town board of health on the date on which this section as amended shall take effect are hereby transferred on that date to the town board of the town, and all rights, powers, duties and obligations of each and every village board of health on the date on which this section as amended shall take effect are hereby transferred on that date to the board of trustees of the village. The members of town boards and of village boards of trustees shall not receive additional compensation by reason of serving as members of town and village boards of health respectively. Any matter within the jurisdiction of a town or village board of health may be considered and acted upon at any meeting of such town board or village board of trustees.

§ 10. Section twenty-one of such chapter, as amended by chapter four hundred and eighty of the laws of nineteen hundred and nine, is hereby amended to read as follows:

§ 21. General powers and duties of local boards of health. Every such local board of health shall meet at stated intervals to be fixed by it, in the municipality. The presiding officer of every such board may call special meetings thereof when in his judgment the protection of the public health of the municipality requires it, and he shall call such meeting upon the petition of at least twenty-five residents thereof, of full age, setting forth the necessity of such meeting. Every such local board, subject to the provisions of the public health law and of the sanitary code, shall prescribe the duties and powers of the local health officer, who shall be its chief executive officer, and direct him in the performance of his duties, and fix his compensation, which in case of health officers of cities, towns and villages, having a population of eight thousand or less, shall not be less than the equivalent of ten cents per annum per inhabitant of the city, town or village according to the latest federal or state enumeration; and in cities, towns and villages having a population of more than eight thousand shall not be less than eight hundred dollars per annum. In addition to his compensation so fixed, the board of health must allow the actual and reasonable expenses of said health officer in the performance of his official duties and in going to, attending and returning from, the annual sanitary conference of health officers, or equivalent meeting, held

yearly within the state, and conferences called by the sanitary supervisor of the district, and whenever the services rendered by its health officer shall include the care of smallpox, the board of health shall allow, or whenever such services are extraordinary, by reason of infectious diseases, or otherwise, they may in their discretion, allow to him such further sum in addition to said fixed compensation as shall be equal to the charges for consultation services in the locality, audited by the town board of a town, by the board of trustees of a village or by the proper auditing board of a city of the third class, which said expenses and said additional compensation shall be a charge upon and paid by the municipality as provided in section thirty-five of this chapter. Every such local board shall make and publish from time to time all such orders and regulations, not inconsistent with the provisions of the sanitary code, as it may deem necessary and proper for the preservation of life and health and the execution and enforcement of this chapter in the municipality. It shall make without publication thereof, such orders and regulations for the suppression of nuisances and concerning all other matters in its judgment detrimental to the public health in special or individual cases, not of general application, and serve copies thereof upon the owner or occupant of any premises whereon such nuisances or other matters may exist, or upon which may exist the cause of other nuisances to other premises, or cause the same to be conspicuously posted thereon. The health officer may employ such persons as shall be necessary to enable him to carry into effect the orders and regulations of the board of health and the provisions of the public health law and of the sanitary code, and fix their compensation within the limits of the appropriation therefor. The board of health may issue subpoenas, compel the attendance of witnesses, administer oaths to witnesses and compel them to testify, and for such purposes it shall have the same powers as a justice of the peace of the state in a civil action of which he has jurisdiction. It may designate by resolution one of its members to sign and issue such subpoenas. No subpoena shall be served outside the jurisdiction of the board issuing it, and no witness shall be interrogated or compelled to testify upon matters not related to the public health. It may issue warrants to any constable or policeman of the municipality to apprehend and remove such persons as cannot otherwise be subjected to its orders or regulations, and a warrant to the sheriff of the county to bring to its aid the power of the county whenever it shall be necessary to do so. Every warrant shall be forthwith executed by the officer to whom directed, who shall have the same powers and be subject to the same duties in the execution thereof, as if it had been duly issued out of a court of record of the state. Every such local board may prescribe and impose penalties for the violation of or failure to comply with any of its orders or regulations, not exceeding one hundred dollars for a single violation or failure, to be sued for and recovered by it in the name and for the benefit of the municipality; and may maintain actions in any court of competent jurisdiction to restrain by injunction such violations, or otherwise to enforce such orders and regulations.

§ 11. Such chapter is hereby amended by inserting therein three new sections, to be sections twenty-one-a, twenty-one-b and twenty-one-c, to read, respectively, as follows:

§ 21-a. *Powers and duties as to sewers.* Whenever such local board of health in any incorporated village shall deem the sewers of such village insufficient to properly and safely sewer such village, and protect the public health, it shall certify such fact in writing, stating and recommending what additions or alterations should in the judgment of such board of health be made, with its reasons therefor, to the state commissioner of health for his approval, and if such recommendations shall be approved by the state commissioner of health, it shall be the duty of the board of trustees or other board of such village having jurisdiction of the

construction of sewers therein, if there be such a board, whether sufficient funds shall be on hand for such purpose or not, forthwith, make such additions to or alterations in the sewers of such village and execute such recommendations, and the expenses thereof shall be paid for wholly by said village in the same manner as other village expenses are paid or by an assessment of the whole amount against the property benefited, or partly by the village and partly by an assessment against the property benefited, as the board of trustees of such village shall by resolution determine. If the board of trustees shall determine that such expenses shall be paid partly by the village and partly by an assessment against the property benefited, as authorized by this section, it shall in the resolution making such determination fix the proportion of such expense to be borne by each, and the proportion thereof to be raised by an assessment against the property benefited shall be assessed and collected in the manner provided by the village law for the assessment and collection of sewer assessments. Said village is hereby authorized to raise such sum as may be necessary for the payment of the expenses incurred, which are a village charge, if any, as herein provided, in addition to the amount such village is now authorized to raise by law for corporation purposes, and such board shall have the right to acquire such lands, rights of way, or other easements, by gift, or purchase, or in case the same cannot be acquired by purchase may acquire the same by condemnation in the manner provided by law.

§ 21-b. *General powers and duties of health officers.* Health officers of towns and villages, in addition to such other duties as may be lawfully imposed upon them and subject to the provisions of the public health law and the sanitary code, shall perform the following duties:

1. Make an annual sanitary survey and maintain a continuous sanitary supervision over the territory within their jurisdiction.
2. Make a medical examination of every school child as soon as practicable after the opening of each school year, except in those schools in which the authorities thereof make other provision for the medical examination of the pupils.
3. Make a sanitary inspection periodically of all school buildings and places of public assemblage, and report thereon to those responsible for the maintenance of such school buildings and places of public assemblage.
4. Promote the spread of information as to the causes, nature and prevention of prevalent diseases, and the preservation and improvement of health.
5. Take such steps as may be necessary to secure prompt and full reports by physicians of communicable diseases, and prompt and full registration of births and deaths.
6. Enforce within their jurisdiction the provisions of the public health law and the sanitary code.
7. Attend the annual conferences of sanitary officers called by the state department of health, and local conferences within his sanitary district, to which he may be summoned by the sanitary supervisor thereof.

The written reports of public health officers, inspectors, nurses and other representatives of public health officers on questions of fact under the public health law or under the sanitary code or any local health regulation shall be presumptive evidence of the facts so stated, and shall be received as such in all courts and places. The persons making such reports shall be exempt from personal liability for the statements therein made, if they have acted in good faith.

No health officer, inspector, public health nurse, or other representative of a public health officer, and no person or persons other than the city, village or town

by which such health officer or representative thereof is employed shall be sued or held to liability for any act done or omitted by any such health officer or representative of a health officer in good faith and with ordinary discretion on behalf or under the direction of such city, village or town or pursuant to its regulations or ordinances, or the sanitary code, or the public health law. Any person whose property may have been unjustly or illegally destroyed or injured pursuant to any order, regulation or ordinance, or action of any board of health or health officer, or representative of a health officer, for which no personal liability may exist as aforesaid, may maintain a proper action against the city, village or town for the recovery of proper compensation or damages. Every such suit must be brought within six months after the cause of the action arose and the recovery shall be limited to the damages suffered.

§ 21-c. *Public health nurses.* Each health officer or other official exercising similar duties, by whatever official designation he may be known, shall have power to employ such number of public health nurses as in his judgment may be necessary within the limits of the appropriation made therefor by the city, town or village. They shall work under the direction of the health officer and may be assigned by him to the reduction of infant mortality, the examination or visitation of school children or children excluded from school, the discovery or visitation of cases of tuberculosis, the visitation of the sick who may be unable otherwise to secure adequate care, the instruction of members of households in which there is a sick person, or to such other duties as may seem to him appropriate.

§ 12. Sections twenty-five, twenty-seven, thirty-one, thirty-four, thirty-five and thirty-eight of such chapter are hereby amended to read, respectively, as follows:

§ 25. Infectious and contagious or communicable diseases. Every local board of health and every health officer shall guard against the introduction of such infectious and contagious or communicable diseases as are designated in the sanitary code, by the exercise of proper and vigilant medical inspection and control of all persons and things infected with or exposed to such diseases, and provide suitable places for the treatment and care of sick persons who cannot otherwise be provided for. They may, subject to the provisions of the sanitary code, prohibit and prevent all intercourse and communication with or use of infected premises, places and things, and require, and if necessary, provide the means for the thorough purification and cleansing of the same before general intercourse with the same or use thereof shall be allowed. Every physician shall immediately give notice of every case of infectious and contagious or communicable disease required by the state department of health to be reported to it, to the health officer of the city, town or village where such disease occurs, and no physician being in attendance on such case, it shall be the duty of the superintendent or other officer of an institution, householder, hotel or lodging house keeper, or other person where such case occurs, to give such notice. The physician or other person giving such notice shall be entitled to the sum of twenty-five cents therefor, which shall be a charge upon and paid by the municipality where such case occurs. Every local health officer shall report to the state department of health, promptly, all cases of such infectious and contagious or communicable diseases, as may be required by the state department of health, and for such reporting the health officer of a village or town shall be paid by the municipality employing him, upon the certification of the state department of health, a sum not to exceed twenty cents for each case so reported. The reports of cases of tuberculosis made pursuant to the provisions of this section shall not be divulged or made public so as to disclose the identity of the persons to whom they relate, by any person; except in so far as may be

authorized by the public health council. The board of health shall provide at stated intervals, a suitable supply of vaccine virus, of a quality and from a source approved by the state department of health, and during an actual epidemic of smallpox obtain fresh supplies of such virus at intervals not exceeding one week, and at all times provide thorough and safe vaccination for all persons in need of the same. If a pestilential, infectious or contagious disease exists in any county almshouse or its vicinity, and the physician thereof shall certify that such disease is likely to endanger the health of its inmates, the county superintendent of the poor may cause such inmates or any of them to be removed to such other suitable place in the county as the local board of health of the municipality where the almshouse is situated may designate, there to be maintained and provided for at the expense of the county, with all necessary medical care and attendance until they shall be safely returned to such almshouse or otherwise discharged. The health officer, commissioner of health, or boards of health of the cities of the first class shall report promptly to the state department of health all cases of smallpox, typhus and yellow fever and cholera and the facts relating thereto.

§ 27. Owner to bear all or part of expense of removal of waters wherein mosquito larvæ breed. Whenever the local board of health of a municipality shall determine that any accumulation of water wherein mosquito larvæ breed constitutes a nuisance or a danger or injury to life or health, the owner or owners of the premises on which the breeding place is located shall bear the expense of its suppression or removal, or so much thereof as the local board may have determined to be equitable as hereinafter provided, and for the amount thereof an action may be maintained in the name of the municipality and the same shall become a first lien on the premises as provided by sections thirty-one and thirty-two of this article.

§ 31. Removal of nuisances. If the owner or occupant of any premises whereon any nuisance or condition deemed to be detrimental to the public health exists or the cause of the existence elsewhere, fails to comply with any order or regulation of any such local board for the suppression and removal of any such nuisance or other matter, in the judgment of the board detrimental to the public health, made, served or posted as required in this article, such board or their servants or employees may enter upon the premises to which such order or regulation relates, and suppress or remove such nuisance or other matter. The expense of such suppression or removal shall be paid by the owner or occupant of such premises, or by the person who caused or maintained such nuisance or other matters, and the board may maintain an action in the name of the municipality to recover such expense, and the same when recovered shall be paid to the treasurer of the municipality, or if it has no treasurer, to its chief fiscal officer, to be held and used as the funds of the municipality. Whenever the suppression or removal of such nuisance or conditions detrimental to health demand the immediate expenditure of money, every such local board of health shall be authorized to use for such purpose any money in the hands of the board, or may call on the city council for such money or it may borrow the same on the credit of the municipality. All such moneys so expended or borrowed shall be immediately repaid to the fund or source whence they were received on the recovery of the same by action or otherwise from the persons responsible for the expenses of suppression or removal.

§ 34. Jurisdiction of town boards. A town board of health shall not have jurisdiction over any city or incorporated village or part of such city or village in such town.

§ 35. Expenses, how paid. All expenses incurred by any local board of health in the performance of the duties imposed upon it or its members by law shall

be a charge upon the municipality, and shall be audited, levied, collected and paid in the same manner as the other charges of, or upon, the municipality are audited, levied, collected and paid. The taxable property of any incorporated village shall not be subject to taxation for maintaining any town board of health, or for any expenditure authorized by the town board, but the costs and expenditures of the town board shall be assessed and collected exclusively on the property of the town outside of any such village.

§ 38. Exceptions and limitations as to city of New York. Sections twenty to thirty-eight, inclusive, of this article shall not be construed to affect, alter, or repeal laws now in force relating to the board of health of the city of New York nor the sanitary code duly adopted and now in force in such city.

§ 13. Sections three hundred and twenty and three hundred and twenty-two of such chapter are hereby amended to read as follows:

§ 320. Reports of tuberculosis by physicians and others. Tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in the state of New York to report by telephone or in person or in writing on a form to be furnished as hereinafter provided, the name and address of every person known by said physician to have tuberculosis, to the health officer of the city, town or village in which said person resides or may be, within twenty-four hours after such fact comes to the knowledge of said physician. It shall also be the duty of the chief officer having charge for the time being of any hospital, dispensary, asylum or other similar private or public institution to report the name, age, sex, color, occupation, place where last employed if known, the previous address of every patient having tuberculosis who comes into his care or under his observation, within twenty-four hours thereafter.

Any physician may report the name and address of any person coming under his observation who appears to be suffering from tuberculosis to the health officer of the city, town or village in which such person is, and the health officer shall thereupon take such steps as may be prescribed by the sanitary code.

Each registrar of vital statistics shall promptly report to the health officer the name and address of every person reported to him as having died from tuberculosis. The health officer shall ascertain whether such person has been previously reported as having tuberculosis by the physician signing the death certificate, and if it appears that such physician has not so reported such person, the health officer shall call the attention of such physician to the provisions of this section. In case of repeated violations of the provisions of this section by any physician the health officer shall report such repeated violations to the board of health or other local health authorities, who shall cause such steps to be taken as may be necessary to enforce the penalty provided for such violation.

§ 322. Protection of records. It shall be the duty of every health officer of a city, town or village to cause all reports made in accordance with the provisions of section three hundred and twenty, and also all results of examinations, showing the presence of the bacilli of tuberculosis, made in accordance with the provisions of section three hundred and twenty-one, to be recorded in a register, of which he shall be the custodian. Such register shall not be open to inspection by any person other than the health authorities of the state and of the said city, town or village, and said health authorities shall not permit any such report or record to be divulged so as to disclose the identity of the person to whom it relates, except as may be authorized in the sanitary code.

§ 14. Section three hundred and twenty-four of such chapter, as amended by chapter two hundred and forty of the laws of nineteen hundred and nine, and

chapter four hundred and twenty-seven of the laws of nineteen hundred and ten, is hereby amended to read as follows:

§ 324. Health officer to direct disinfection, cleansing or renovation. When notified of the vacation of any apartments or premises as provided in section three hundred and twenty-three thereof, the local health officer or one of his assistants or deputies shall within twenty-four hours thereafter visit said apartments or premises and shall order and direct that, except for purposes of cleansing or disinfection, no infected article shall be removed therefrom until properly and suitably cleansed or disinfected, and all apartments or premises shall be disinfected, cleansed or renovated in order that they may be rendered safe and suitable for occupancy as prescribed by the sanitary code. If the health authorities determine that disinfection is sufficient to render them safe and suitable for occupancy, such apartments or premises, together with all infected articles therein, shall immediately be disinfected by the health authorities at public expense, or provided, however, that in any locality which in the judgment of the state commissioner of health may be considered a resort for persons having tuberculosis, such disinfection may in the discretion of the health authorities be done by such health authorities at the expense of the owner of the premises. Should the health authorities determine that such apartments or premises are in need of thorough cleansing and renovation, a notice in writing to this effect shall be served upon the owner or agent of said apartments or premises, and said owner or agent shall thereupon proceed to the cleansing or renovating of such apartments or premises in accordance with the instructions of the health authorities, and such cleansing and renovation shall be done at the expense of said owner or agent. *The public health council shall include in the sanitary code regulations defining the methods and precautions to be observed in disinfecting, cleansing or renovating premises under the provisions of this section.* In any case in which the owner is liable for the expense of such disinfection, cleansing or renovation by or pursuant to the provisions of this section, such expense if not paid shall be a first lien upon such property, real or personal, so disinfected, cleansed or renovated, having preference over all other liens and incumbrances whatever. If the lien is against real property, it may be foreclosed in the manner prescribed in section thirty-two of the public health law; if the lien is against personal property it may be foreclosed in the manner prescribed in sections two hundred and six to two hundred and nine, inclusive, of the lien law.

§ 15. Such chapter is hereby amended by inserting therein a new section, to be section three hundred and twenty-six-a, to read as follows:

§ 326-a. *Control of dangerous and careless patients. Whenever a complaint shall be made by a physician to a health officer that any person is afflicted with any infectious, contagious or communicable disease or is a carrier of typhoid fever, tuberculosis, diphtheria or other infectious disease and is unable or unwilling to conduct himself and to live in such a manner as not to expose members of his family or household or other persons with whom he may be associated to danger of infection, the health officer shall forthwith investigate the circumstances alleged. If he shall find that any such person is a menace to others, he shall lodge a complaint against such person with a magistrate, and on such complaint the said person shall be brought before such magistrate. The magistrate after due notice and a hearing, if satisfied that the complaint of the health officer is well founded and that the person is a source of danger to others, may commit him to a county hospital for tuberculosis or to any other hospital or institution established for the care of persons suffering from any such disease or maintaining a room, ward or wards for such person. Such person shall be deemed to be committed until discharged in the man-*

ner authorized in this section. In making such commitment the magistrate shall make such order for payment for the care and maintenance of such person as he may deem proper. The chief medical officer of the hospital or other institution to which any such person has been committed, upon signing and placing among the permanent records of such hospital or institution a statement to the effect that such person has obeyed the rules and regulations of such hospital or institution for a period of not less than sixty days, and that in his judgment such person may be discharged without danger to the health or life of others, or for any other reason stated in full which he may deem adequate and sufficient, may discharge the person so committed. He shall report each such discharge, together with a full statement of the reasons therefor, at once to the health officer of the city, village or town from which the patient came and at the next meeting of the board of managers or other controlling authority of such hospital or institution. Every person committed under the provisions of this section shall observe all the rules and regulations of such hospital or institution. Any patient so committed who neglects or refuses to obey the rules or regulations of the institution may by direction of the chief medical officer of the institution be placed apart from the other patients and restrained from leaving the institution. Any such patient who wilfully violates the rules and regulations of the institution or repeatedly conducts himself in a disorderly manner may be taken before a magistrate by the order of the chief medical officer of the institution. The chief medical officer may enter a complaint against such person for disorderly conduct and the magistrate, after a hearing and upon due evidence of such disorderly conduct, may commit such person for a period not to exceed six months to any institution to which persons convicted of disorderly conduct or vagrancy or of being tramps may be committed, and such institution shall keep such person separate and apart from the other inmates, provided that nothing in this section shall be construed to prohibit any person committed to any institution under its provisions from appealing to any court having jurisdiction for a review of the evidence on which commitment was made.

§ 16. Section three hundred and twenty-eight of such chapter, as amended by chapter four hundred and twenty-six of the laws of nineteen hundred and nine, and chapter four hundred and ninety of the laws of nineteen hundred and eleven, is hereby amended to read as follows:

§ 328. Provided that physicians shall make a complete statement of procedure and precautions on a blank to be furnished by the health officer. It shall be the duty of the local health officer to transmit to a physician reporting a case of tuberculosis as provided in section three hundred and twenty, a printed statement and report, in a form approved by the state commissioner of health, naming such procedure and precautions as in the opinion of the said commissioner are necessary or desirable to be taken on the premises of a tuberculosis patient. The state department of health shall print an ample supply of such statements and reports and furnish the same in sufficient numbers to health officers for all physicians. Upon receipt of such statement and report the physician shall either carry into effect all such procedure and precautions as are therein prescribed, and shall thereupon sign and date the same and return it to the local health officer without delay, or, if such attending physician be unwilling or unable to carry into effect the procedures and precautions specified, he shall so state upon this report and immediately return the same to the local health officer and the duties therein prescribed shall thereupon devolve upon said local health officer, who shall receive the fee hereinafter provided as payment of the services of the physician if he comply with the duties herein prescribed. Upon the receipt of this statement and report the local health officer shall carefully examine the same, and if satisfied that the at-

tending physician has taken all necessary and desirable precautions to insure the safety of all persons living in the apartments or premises occupied by the persons having tuberculosis, the said local health officer shall issue an order upon the treasurer of the city, town or village in favor of the attending physician, except where such physician is employed by and receives a salary from the state of New York, or is employed by and receives a salary from a hospital, sanatorium, or other similar private or public institution in the state of New York, for the sum of one dollar thereupon to be paid out of a fund which shall be provided by said city, town or village. But no such payment shall be made to any physician for reporting cases of tuberculosis elsewhere than in the city, town or village where such patient resides. If the precaution taken or instructions given by the attending physician are, in the opinion of the local health officer, not such as will remove all reasonable danger or probability of danger to the persons occupying the said house or apartments or premises, the local health officer shall return to the attending physician the report with a letter specifying the additional precautions or instructions which the health officer shall require him to take or give; and the said attending physician shall immediately take the additional precautions and give the additional instructions specified and shall record and return the same on the original report to the local health officer. A health officer shall have authority to cause all reported cases of tuberculosis within his jurisdiction to be visited from time to time by a public health nurse. In every case in which a physician reporting the case has elected to carry into effect the procedure and precautions required by this section, the public health nurse shall act under the direction and supervision of the physician. It shall further be the duty of the health officer to transmit to the physician reporting any case of tuberculosis a printed requisition, to be supplied by the state commissioner of health, and issued in sufficient number to health officers to supply physicians. Upon this requisition blank shall be named the materials kept on hand by the local health officer for the prevention of the spread of tuberculosis and it shall be the duty of the local health officer to supply such materials as may be specified in such requisition. Any physician may return a duly signed requisition to the local health officer for such of the specified materials and in such amount as he may deem necessary to aid him in preventing the spread of the disease, and all local health officers shall honor, as far as possible, the requisition signed by the attending physician in such case. It shall be the duty of every local health officer to transmit to every physician reporting any case of tuberculosis, or to the person reported as suffering from this disease, provided the latter has no attending physician, a circular of information approved by the state commissioner of health and which shall be provided in sufficient quantity by the local health authorities. This circular of information shall inform the consumptive of the best methods of treatment of his disease and of the precautions necessary to avoid transmitting the disease to others.

§ 17. Section three hundred and twenty-nine of such chapter is hereby amended to read as follows:

§ 329. Penalty for failure of physician to perform duties or for making false reports. Any physician or person practicing as a physician who shall wilfully make any false statement concerning the name, age, sex, color, occupation, place where last employed if known, or address of any person reported as affected with tuberculosis, or who shall certify falsely as to any of the precautions taken to prevent the spread of infection, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be subject to a fine of not more than one hundred dollars.

COMMUNICATIONS.

JOHN C. MACEVITT, M.D.,

Editor NEW YORK STATE JOURNAL OF MEDICINE.

DEAR DOCTOR. The very instructive editorial in the July number of the JOURNAL about milk in general suggests that a few words about certified milk in particular may be of some interest to many and the means of information to some.

There is probably no body of men who appreciate the work of the Department of Health in regard to the improvement of the milk supply more than do the members of Milk Commissions, for they know that nearly all the milk now sold in this city above the Grade C, which last all, including conspicuously the Health Commissioner, wish could be abolished, is better than any that was sold here when the Commissions began their work, except, perhaps, a very few selected quarts.

Certified milk, as you all know, receives its certification from a Commission which is appointed by a County Medical Society, in this state this being not only customary but required by law; no other milk can be legally sold as certified. This Commission, itself voluntary, appoints paid experts, such as are required, to carry out the necessary farm inspections, milk examinations and other routine details.

Of the requirements of the Commission for the production of certified milk that may well be mentioned first, which must first be provided, *farm equipment*. The Commission, of which the writer is a member, has, from the start, made its requirements as simple as possible, not asking "frills" of any kind; yet, with the development of the industry, a farm which was the best we could secure ten years ago, would not be accepted now. Details being explained in the reports of our and other Commissions and in certain public documents, suffice it to say here that the buildings must be so constructed as to be capable of being readily kept clean; that there must be ample supply of water, hot and cold, and facilities for thorough sterilization of utensils, cleansing of cows as well as milkers, and the conduct in general of a near-septic business. In practice at the present time, if you do not find the stables and their surroundings quite as immaculate as your operating rooms, at least you would, if you visited any certified farm, have small objection to drinking milk produced on such premises as compared with the product of other farms in the neighborhood.

Then the cows, the *fons et origo*—not *mali* but *boni*. In the first place they are tuberculin tested before admission to the herd, and after that at least yearly, and their health otherwise is looked after as carefully as possible by a veterinarian. They are kept as clean as possible, in striking contrast to the ordinary, casual cow, and the udders are cleansed before each milking.

Next, the milkers and others handling the cows and the milk. They are instructed as strenuously as is possible in the necessity for and the methods of—shall I call it dairy asepsis?—*i. e.*, sterile utensils, clean surroundings of all kinds, and, very important, clean hands. Medical supervision of the health of employees is carried out by a Commission physician, who makes periodic visits, but this Commission has always felt that the greatest safety against at least acute disease, such as septic sore throat, is to be secured by appeal to that very sensitive, pocketbook nerve. We constantly emphasize to our dairymen that our Department of Health and, sometimes, outside interests, are seeking the sources of epidemics and that some have been definitely traced to the milk supply, and we tell him that an epidemic traced to his farm is very likely to destroy his business; it is wise, therefore, as well as right, for him to inform us of any case of illness and leave us to decide whether it is dangerous or not. For this purpose he is supplied with report blanks, which he sends us weekly at least, oftener if necessary. Up to date this has worked out very well.

Then the milk, the object of the whole business. Hav-

ing been drawn by clean hands into sterile containers it is cooled as rapidly as possible and the bottles filled from automatic bottling machines. The bottles are packed in ice and so kept until delivered at the consumer's door. Under this rigid cooling the multiplication of bacteria is very slow.

Now doubtless you are interested to know whether these presumptive requirements are carried out and how we know they are; the administration of laws is quite as important as their existence.

To assure the general care of the farm, cattle and implements, and to see that the milking is properly performed, an inspection is made of each farm at least once a month, by a qualified expert. These inspections are made without prearrangement with the dairyman and are sometimes at the morning milking, sometimes at the evening and give little chance for special preparation. An occasional inspection of the milk on the train is also made to see that it is properly packed and iced.

Still the most important single criterion to determine the purity and safety of the milk is the bacterial count; if the count is uniformly low, conditions are good on the farm and from there to where the milk is secured which is the same as where the consumer gets it. That no sophistication is performed we know from two reasons: first, of course, because we are watching the process or think we are; beside this, though, the sealed cap cannot, we believe, be tampered with without obvious evidence. Still further, the trained milk bacteriologist, who has done a great deal of this work, will know by the character and distribution of the flora present and by certain Sherlock Holmes signs if the milk has been queerly handled. On the other hand, if the count is high, something is wrong, another bottle is examined at once, and if that, too, is high, investigation is carried as far as necessary. It might be said that never have we been unable to locate the source of trouble and rarely has this been difficult. Of course, a single bottle may have a high count without given explanation, but you who are surgeons know that no operation is theoretically aseptic and an occasional patient gets a real infection; why not a bottle of milk?

Of course, this brief survey does not pretend to give exhaustive details of the methods by which the certified milk is safeguarded but merely to suggest that it is. A trip to a farm is very interesting and a report of a Commission is illuminating and pretty complete.

WALTER D. LUDLUM, M.D.

Brooklyn, N. Y.

GEORGE GIBIER RAMBAUD, M.D.

361 West 23rd Street
New York City

August 16, 1913.

To the Editor of the NEW YORK STATE JOURNAL OF MEDICINE,

17 W. 43rd St., New York City.

DEAR SIR: My attention has just been called to your editorial in this month's issue of the NEW YORK STATE JOURNAL OF MEDICINE entitled "The Turtle and the Hare."

While I realize that the chance for witty criticism was very tempting, I cannot refrain from thinking that the article was absolutely uncalled for and that it is also a misrepresentation of facts. You might even have made your editorial still more witty, since you were quoting my full name in the course of the article, by further calling the attention of your readers to the fact that my middle name means "game"; it would have added a finishing touch to your story.

To return to the serious part of the accusation, I would like you to understand that in the measure of human possibility I always carry out to the letter those of my intentions which have become public knowledge; when it was announced in the public press

that I would divulge the composition of the Friedmann vaccine to the medical journals, my plans were well laid out so that the medical journals were to be first in receiving the item.

On the day when I received your telephone message asking for my communication, I had received a similar request from the *New York Medical Journal* and the *Medical Record*. Both of these journals are mailed to the subscribers on Friday and whenever any news of public interest appears in one issue it is published in the daily papers either on Friday morning or Saturday morning. After announcing that I would make the composition of the vaccine public, I was naturally besieged by the reporters, who were all eager to get the news, but they were all informed that the news must positively go to the medical journals first.

However, through a misunderstanding of my directions, my secretary released for general publication the formula of the tuberculosis vaccine 24 hours too early. Incensed over this mistake, I tried in vain to obtain from the daily papers the withholding of the communication for a day. My secretary immediately sent his personal letter to the editor of every medical journal to whom my letter had been sent, explaining his mistake and begging that I be exonerated from blame. You must have received that communication since it was not returned to my office by the postal authorities.

I do not blame you for wishing to treat your readers to a piece of humorous literature in summer, but it would have been elementary courtesy to mention my secretary's letter in your editorial so as not to show in a false light one of your colleagues and a fellow member of the State Medical Society, who has never, to his knowledge, broken the code of ethics.

I sincerely trust that you will publish this letter in your next issue that both sides of the question may come to the knowledge of your readers.

Very truly yours,

Notwithstanding it is contrary to our usual custom to publish unsigned communications, we do so in this instance in the charitable belief that if the letter was written by Dr. Rambaud it indicates carelessness rather than discourtesy.

We beg leave to differ with the statement that there was misrepresentation of facts. The facts were specific, and clearly stated.

The short dissertation on elementary courtesy would be well taken had we received the letter mentioned. We did not. However, it is a pleasure to know that such a letter was sent, as it relieves us of the feeling that the discourtesy we experienced was premeditated.—ED.

CORRESPONDENCE.

JOHN C. MACEVITT, M.D.,

Editor N. Y. STATE JOURNAL OF MEDICINE.

DEAR DOCTOR: On page 402 of the July number, 1913, of the N. Y. STATE JOURNAL OF MEDICINE there appears a note by you, on "A Question of Plagiarism."

Within the last few years this question has received considerable prominence in western New York. When the first case was up before the local profession opinions were much divided as to the propriety of copying somebody. Indeed, I have been told that text-books are often written in this way.

I write you this note to urge you to write us an editorial upon the matter.

Cordially yours,

EDMOND E. BLAAUW.

It will give us pleasure to speak on this subject in some future issue of the JOURNAL.—ED.

The Medical Society of the State of New York

DISTRICT BRANCHES.

ANNUAL MEETINGS FOR 1913.

First District Branch—Thursday, October 9th, in Yonkers.

Second District Branch—

Third District Branch—Tuesday, October 21st, in Catskill.

Fourth District Branch—Tuesday, October 14th, in Fort Edward.

Fifth District Branch—Thursday, October 2d, in Oneida.

Sixth District Branch—Tuesday, October 21st, in Ithaca.

Seventh and Eighth District Branches—Joint meeting, Tuesday and Wednesday, September 24th and 25th, at Sonyea.

FOURTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

ANNUAL MEETING, FORT EDWARD, N. Y., TUESDAY,
OCTOBER 14, 1913.

PRELIMINARY PROGRAM

President's Address, Silas J. Banker, M.D., Fort Edward.

Address, Abraham Jacobi, M.D., New York.

"Modern Therapy of Uterine Cancer," Walter B. Chase, M.D., Brooklyn.

"Intestinal Kinks, Their Diagnosis and Treatment," Irving S. Haynes, M.D., New York.

"Graduated Labor in the Treatment of Pulmonary Tuberculosis," Julius B. Ransom, M.D., Dannemora.

"Venesection in Cerebral Hemorrhage. With Report of Cases," Andrew McFarlane, M.D., Albany.

"A Study of the Causes and Clinical Aspects of Renal Pain," E. MacD. Stanton, M.D., Schenectady.

"Report of a Case of Tumor of the Suprarenal Gland," John B. Ledlie, M.D., Saratoga.

"Hematuria, Its Pathological and Diagnostic Import," Leo F. Schiff, M.D., Plattsburg.

"Cystoscopic Diagnosis," William P. Faust, M.D., Schenectady.

"Problems of the Mentally Unfit," W. Grant Cooper, M.D., Ogdensburg.

"Obstetrical Technique," Robert L. Ellithorp, M.D., Gloversville.

"Fractures of the Neck of the Femur," James B. Conant, M.D., Amsterdam.

"Abortion," Edgar B. Probasco, M.D., Glens Falls.

"The Relation of Rhinology to Otology," Willis J. R. Brewster, M.D., Schenectady.

"Use and Abuse of Nitroglycerine," William L. Munson, M.D., Granville.

Subject to be announced, Charles C. Trembley, M.D., Saranac Lake.

Luncheon will be served at 1 P. M.

Business meeting directly after lunch.

FIFTH DISTRICT BRANCH OF THE MEDICAL
SOCIETY OF THE STATE OF NEW YORK.

ANNUAL MEETING, ONEIDA, N. Y., THURSDAY,
OCTOBER 2, 1913.

PRELIMINARY PROGRAM.

MORNING SESSION, 10 A. M.

President's Address, Otto Pfaff, M.D., Oneida.

"Some Observations in Recent Cases of Fractures,"
Eugene H. Carpenter, M.D., Oneida.

Discussion opened by Charles H. Baldwin, M.D.,
Utica.

"A Plea for Cæsarean Section," Fred J. Douglas,
M.D., Utica.

Discussion by Gilbert D. Gregor, M.D., Watertown.

"Some Thoughts on Atypical Pneumonia in Infancy,"
Edward J. Wynkoop, M.D., Syracuse.

Discussion by T. Wood Clark, M.D., Utica.

"Cocaine Anesthesia in Major Operations," Nathan
Jacobson, M.D., Syracuse.

Discussion by George B. Broad, M.D., Syracuse.

"Preventative Medicine," Edward C. Clark, M.D.,
Buffalo.

Discussion by David M. Totman, M.D., Syracuse.

"Post-operative Treatment of Sarcoma," Frederic
H. Calkins, M.D., Watertown.

Discussion by Edward S. Van Duyn, M.D., Syracuse.

"Further Experience with Warmed Ether Anes-
thesia," Clifford R. Hervey, M.D., Oswego.

A meeting of the Executive Committee is requested
immediately at the close of the morning session.

Adjournment for luncheon, 1 P. M.

AFTERNOON SESSION, 2 P. M.

Business session.

Election of officers.

Other business.

"Congenital Cystic Kidney," Fred B. Lund, M.D.,
Boston, Mass.

"Importance of Cystoscopic Examination," Jesse H.
Pawling, M.D., Watertown.

Discussion by Carl Muench, M.D., Syracuse.

"Diagnosis and Treatment of Iritis," R. E. Crockett,
M.D., Oneida.

Discussion by Frank W. Marlow, M.D., Syracuse.

"Backache," Clarence E. Coon, M.D., Syracuse.

"Some Phases of Insanity," Samuel W. Hamilton,
M.D., Utica.

Discussion by Walter Kidder, M.D., Oswego.

"The Value of Autopsy," Adelbert C. Douglass,
M.D., Iliou.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this
column and this will be deemed by us a full equivalent to
those sending them. A selection from these volumes will be
made for review, as dictated by their merits, or in the interests
of our readers.

GOUT, ITS ETIOLOGY, PATHOLOGY AND TREATMENT. By
JAMES LINDSAY, M.D. (Edin.), M.R.C.P. (Lond.),
Hon. Physician; formerly honorary pathologist and
resident medical officer, Royal Mineral Water Hos-
pital, Bath. London: Henry Frowde, Hodder &
Stoughton, Oxford University Press, Warwick
Square, E. C., 1913.

TUBERCULIN TREATMENT. By CLIVE RIVIERE, M.D.,
London, F.R.C.P., Physician, East London Hospital
for Children, Shadwell; Physician to Out-patients,
City of London Hospital for Diseases of the Chest,
Victoria Park. Egbert Morland, M.B. and B. Sc.,
London, M.D. Berne de Arosa, Switzerland; Vis-
iting Physician to the English Sanatorium (Villa Gen-
tiana). Second Edition. London: Henry Frowde,
Hodder & Stoughton, Oxford University Press,
Warwick Square, E. C., 1913.

SKIN DISEASES IN GENERAL PRACTICE, THEIR RECOG-
NITION AND TREATMENT. By HALDIN DAVIS, M.B.,
B. Ch., B.A. Oxon., F.R.C.S. Eng., M.R.C.P., Physi-
cian in Charge of the Skin Department, Paddington
Green Children's Hospital; Chief Assistant in the
Skin Department, St. Bartholomew's Hospital; As-
sistant Physician to the Hospital for Diseases of the
Skin, Blackfriars. London: Henry Frowde, Hod-
der & Stoughton, Oxford University Press, Warwick
Square, E. C., 1913.

A MANUAL OF VENEREAL DISEASES. Introduction by
Sir ALFRED KEOGH, K.C.B., Late Director-General of
the Army Medical Service. History, Statistics, In-
validating, etc., Brevet Colonel C. H. MELVILLE,
R.A.M.C., Late Professor of Hygiene, Royal Army
Medical College. Clinical Pathology and Bacteriol-
ogy, Brevet Colonel Sir WILLIAM LEISHMAN, K.H.P.,
F.R.S., R.A.M.C., Professor of Pathology, Royal
Army Medical College. Clinical Course and Treat-
ment, Major C. E. POLLOCK, R.A.M.C. Second edi-
tion, revised and largely re-written with new matter
by Major L. W. HARRISON, R.A.M.C., Clinical Pathol-
ogist, Military Hospital, Rochester Row. London:
Henry Frowde, Hodder & Stoughton, Oxford Uni-
versity Press, Warwick Square, E. C., 1913.

MANUAL OF OBSTETRICS. By JOHN OSBORN POLAK,
M. Sc., M.D., Professor of Obstetrics and Gynecol-
ogy in the Long Island College Hospital; Professor
of Obstetrics, Dartmouth Medical School; Obstet-
rician to the College Hospital; Gynecologist to the
Jewish Hospital; Consulting Obstetrician to the
Methodist Episcopal Hospital; Fellow of American
Gynecological Society, New York Obstetrical So-
ciety, etc. With three color plates and one hundred
and nineteen illustrations in text. New York and
London. D. Appleton and Company. 1913.

SYPHILIS AND THE NERVOUS SYSTEM. For practitioners,
neurologists and syphilologists. By Dr. MAX NONNE,
Chief of the Nervous Department in the General
Hospital, Hamburg, Eppendorf. Authorized trans-
lation from the second revised and enlarged German
edition. By CHARLES R. BALL, B.A., M.D., Chief
of the Nervous and Mental Department, St. Paul
Free Dispensary; Neurologist, St. Joseph Hospital,
Bethesda Hospital, Mounds Park Hospital, Minne-
sota Soldiers' Home, and State Home for Crippled
and Deformed Children. Ninety-eight illustrations
in text. Philadelphia and London. J. B. Lippincott
Company. Price, \$4.00.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY
TRACT. By ANTHONY BASSLER, M.D., Professor of
Clinical Medicine, New York Polyclinic Medical
School and Hospital; Visiting Physician, New York
Polyclinic Hospital; Chief Gastro-Enterologist,
German Poliklinik; Visiting Gastro-Enterologist,
People's Hospital, New York City; Editor *American
Journal of Gastro-Enterology*; Member American
Medical and Medical Society State of New York,
American Medical Editors', New York Academy of
Medicine, etc. Illustrated with numerous half-
tone and line text engravings and seventy-five full-
page half-tone plates (with over one hundred fig-
ures), plain and in colors, from original photographs
and drawings. Philadelphia. F. A. Davis Company,
Publishers. 1913. Price, \$7.50 net in half morocco;
\$6.00 net in cloth.

MECHANICAL TREATMENT OF ABDOMINAL HERNIA. By
WILLIAM BURTON DEGARMO, M.D., Professor Special
Surgery, New York Post-Graduate Medical School
and Hospital; Fellow New York Academy of Medi-
cine; Member American Medical Association, New
York State and County Societies; Honorary Mem-
ber of the Medical Society of Virginia; Member
Clinical Congress American Surgeons; First Lieut.
Medical Reserve Corps, U. S. Army. Philadelphia
and London. J. B. Lippincott Company. Price,
\$1.50.

- DISEASES OF THE STOMACH, INCLUDING DIETETIC AND MEDICINAL TREATMENT. By GEORGE ROE LOCKWOOD, M.D., Professor of Clinical Medicine in the Columbia University; Attending Physician to Bellevue Hospital, New York. In one octavo volume of 624 pages, with 126 engravings and 15 plates. Cloth, \$5.50 net. Lea & Febiger, Philadelphia and New York, 1913.
- HYGIENE AND SANITATION. A Text-Book for Nurses. By GEORGE M. PRICE, M.D., Director, Joint Board of Sanitary Control; Director of Investigation, New York State Factory Commission. 18mo., 236 pages. Cloth, \$1.50 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.
- OBSTETRICS FOR NURSES. By JOSEPH B. DELEE, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (4th) edition. 12mo of 508 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$2.50 net.
- A LABORATORY MANUAL OF INVERTEBRATE ZOOLOGY. By GILMAN A. DREW, Ph.D., Assistant Director of the Marine Biological Laboratory, Woods Hole, Mass. With the aid of members of the Zoological Staff of Instructors at the Marine Biological Laboratory. Second edition. 12mo of 213 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.25 net.
- THE ELEMENTS OF BACTERIOLOGICAL TECHNIQUE. By J. W. H. EYRE, M.D., Director of the Bacteriological Department of Guy's Hospital, London. Second edition, rewritten and enlarged. Octavo of 518 pages, with 219 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3.00 net.
- BLOOD PRESSURE IN GENERAL PRACTICE. By PERCIVAL NICHOLSON, M.D. With seven illustrations. Philadelphia and London: J. B. Lippincott Company. Price, \$1.50.
- THE PSYCHONEUROSES AND THEIR TREATMENT BY PSYCHOTHERAPY. By Prof. J. DEJERINE, Professor Clinic Nervous Diseases Faculty of Medicine, University of Paris, and Dr. E. GAUCKLER, Ancien Interne of the hospitals of Paris. Authorized translation by SMITH ELY JELLIFFE, M.D., Ph.D., Adj. Professor Diseases of the Mind and Nervous System, Post-Graduate Hospital; Vis. Neurologist, City Hospital, New York. Philadelphia & London: J. B. Lippincott Company. Price, \$4.00.
- A PRACTICAL TREATISE ON THE CAUSES, SYMPTOMS AND TREATMENT OF SEXUAL IMPOTENCE and other sexual disorders in men and women. By WILLIAM J. ROBINSON, M.D., Chief, Genito-Urinary Disease and Dermatology, Bronx Hospital; Editor *American Journal Urology*, Venereal and Sexual Diseases; Member New York Academy of Medicine, American Medical Editors' Association, American Medical Association, 1913. Critic and Guide Company, 12 Mt. Morris Park West, New York. Price, \$3.00.
- INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology. By leading members of the medical profession. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, with the collaboration of JOHN A. WITHERSPOON, M.D., A. MCPHEDRAN, M.D., FRANK BILLINGS, M.D., CHAS. H. MAYO, M.D., THOS. H. ROTCH, M.D., JOHN G. CLARK, M.D., JAMES J. WALSH, M.D., etc. Volume II. Twenty-third series, 1913. Philadelphia and London: J. B. Lippincott Company.
- ORGANIC AND FUNCTIONAL NERVOUS DISEASES. A Text-book of Neurology. By M. ALLEN STARR, M.D., Ph.D., LL.D., Sc.D., Professor Neurology, College of Physicians and Surgeons, Columbia University; Consulting Neurologist, Presbyterian Hospital and St. Mary's Free Hospital for Children, ex-President of the American Neurological Society; Corresponding Member of the Société de Neurologie, Société de Psychiatrie de Paris; of the Neurological Section of the Royal Society of Medicine, London, and of the Gesellschaft Deutscher Nervenärzte. Fourth Edition, thoroughly revised. Illustrated with 323 engravings in the text and 30 plates in colors and monochrome. New York and Philadelphia. Lea & Febiger, 1913.

BOOK REVIEWS.

DISEASES OF WOMEN—A CLINICAL GUIDE TO THEIR DIAGNOSIS AND TREATMENT. By GEORGE ERNEST HERMANN, M.B., F.R.C.P., London, England. New York. 900 pages. Funk & Wagnalls Co., 1913.

The scope, exactness and completeness of this work are the outstanding characteristics of this treatise on gynecology.

The reader cannot escape the conviction of the rare discrimination of the author in the task he has undertaken. While this edition includes most of the data of other writers, it bears the stamp of individuality and resourcefulness to a surprising degree.

The chapter on neurasthenia is one of the most instructive in the work in its logical differentiation from hysteria. Hysteria is not neurasthenia, but, he adds, most neurasthenic women are liable to so-called hysterical attacks.

The treatment of neurasthenia is first, to relieve pain, physical and mental, procure sleep, but not by opiates or choral, but by bromides. In discussing the difference between hysteria and neurasthenia he emphasizes the rule that in the former the symptoms are localized in accordance with mental conception and not to peripheral distribution. The author accepts the disputed occurrence of spontaneous uterine dilatation with hemorrhage, when neither tumor ovum or endometritis exists, and while rare, he agrees with Matthews Duncan in their occurrence.

In discussing remedies for uterine hemorrhage he fails to mention phthalate of cotarnin, one of the best of all remedies.

The chapter on sterility is replete with practical suggestions, particularly that associated with uterine displacements, but he fails to mention hyperacidity of the vaginal secretion as a factor, which Reynolds has proven cannot be gainsaid.

The author's discussion of uterine cancer, cervical and corporal, is orthodox and practical, in which due weight is given to the palliative treatment of the cervical variety. Thermocautery, X-ray and radium are endorsed and directions for their use formulated.

The topic of cervical laceration and methods of repair agree with Emmet, and he clings to silver wire where catgut is equally serviceable, but he fails to grasp the immense importance of the repair of all lacerations, even in spontaneous healing, when cicatricial structure remains, as a menace to and potent cause of cervical cancer following the traumatism of childbirth.

The work is highly creditable to its distinguished author and should have a place in the library of every American gynecologist.

WALTER B. CHASE.

THE CITY THAT WAS. By STEPHEN SMITH, A.M., M.D., LL.D. Published by Frank Allaben, New York.

The glorious part played by the medical profession in the modern sanitation of large cities has never been better set forth than in this little book of the venerable Dr. Stephen Smith. The conversion of a filthy and disease-producing environment into the metropolis of to-day, through the courageous efforts of medical men

imbued with a decent civic spirit, gives heart to the successors of Dr. Smith who still have much to do toward making New York what it ought to be, and other municipalities as well. But nearly everything to-day has been made easier because of the pioneers who cleverly availed themselves of England's drastic health legislation and adapted it to American conditions. The great powers of our boards of health are the heritage of an enlightened England which awoke before we did, and provided the leverage without which democracy could never have been pried out of the sty which it seems naturally to prefer to decent habitation. Dr. Smith's story of the reformation of revolting conditions by the rational application of force makes one feel that it is up to the medical profession of to-day to create special powers wherewith to deal with the vicious and flagrant exploitations of the people's health on the part of charlatans, fake healers, patent medicine purveyors, apostles of freak religious cults, and all the rest of the black cavalry of death. What was done to the municipality of New York by Dr. Smith and his associates, in particular Mr. Dorman B. Eaton, can be duplicated on a national scale by a Federal Department of Health vested with real power, in the fields which we have mentioned as calling for special attention.

A. C. J.

MENDEL'S PRINCIPLES OF HEREDITY. By W. BATESON, M.A., F.R.S., V.M.H. Cambridge, University Press; New York, G. P. Putnam's Sons, 1913.

This is the third impression of Bateson's book, which first appeared in 1909. Bateson has been peculiarly identified with Mendelism from what may be called its start, or rediscovery, both as investigator and writer. This text-book is a comprehensive and authorized recital of practically all the known facts of Mendelism, on its concrete side. The bearings of the new facts on the great problems of biology, in other words theoretical considerations in respect to the wider aspects of genetics, are not fully discussed. The author thinks it more fitting to detach such a presentation; and promises later publication of his Silliman lectures at Yale in 1907, in which the wide lines of thought suggested by Mendelism received full treatment.

The eight patient years of work on the pea plant which Mendel prosecuted, in order to establish beyond cavil the principles now known universally as Mendelian and true, have been followed by a mighty harvest in a wide range of fields—botany, zoology, physiology, sociology, and even the industrial arts, in certain of their phases. Bateson, in an appendix, tells the story of this Augustinian priest's quiet and laborious life in his cloister garden, and in another appendix reprints his original papers, the first of which appeared in 1866, the second in 1870. He also attempts to explain why it was that Mendel's tremendous contribution was ignored until the present century, despite the fact that it was a model of lucidity and expository skill, the fact that it was presented to a learned society, the fact that it was published in accredited journals of the day, and the further fact that it was familiar to Nägeli. The latter seems to have missed its significance completely and either forgot it or thought it too fanciful for serious consideration. When Nägeli published his great work on heredity in 1884, the year of Mendel's death, he made no allusion to the latter's work. The ignoring of Mendel during his lifetime and for so many years after his death is a sad and discreditable chapter in the history of science. He died in bitterness and in full consciousness of the import and soundness of his researches.

Bateson's book should be read by every physician who is alive to the vital relations sustained by the Mendelian principles of heredity to modern medical science and to certain matters of large sociological concern.

A complete bibliography of Mendelism is appended covering the period preceding the publication of Bateson's book in 1909, and in a series of brief appendixes

the reader is also acquainted with the nature of the principal advances made during the three years since elapsing. The literature of Mendelian analysis is assuming every large proportions. The obscure and neglected father of the *Königskloster* has become the arch-priest of modern biologic science.

A. C. JACOBSON.

A TEXT-BOOK OF PHYSIOLOGY. By ISAAC OTT, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia; Ex-Fellow in Biology, Johns Hopkins University; Consulting Neurologist, Norristown Asylum, Pa.; Ex-President of American Neurological Association. Fourth edition, enlarged and revised. 434 half-tone and other engravings, many in colors. F. A. Davis Company. Philadelphia, 1913.

This work is the fourth edition, revised and enlarged, of a book first published nine years ago and it aims to present "the chief facts of physiology which are necessary to the student who wishes to apply them in the practice of his profession." Its 900 pages contain much material, which is, however, not always selected with discrimination. In the preface of the third edition, the author says "the greatest number of facts has been expressed with the smallest number of words, for physiology is a positive science." This method has led him too frequently to make dogmatic statements about matters which are still in controversy. In the present edition he has largely rewritten the chapter on internal secretions. The string galvanometer is described and its application to the investigation of heart diseases by the electrocardiographic method is indicated. In this connection, the author's statement seems hardly necessary that "diphtheria cases have heart trouble . . . in dying!" Opsonins are spoken of as if they were but a single substance. Abderhalden's chemical test for pregnancy is presented, although it is very doubtful whether additional investigation will confirm the author's claims for it. The movements of the stomach and intestines are described with the addition of new plates made by means of the Roentgenkinematograph. The results of investigations upon the hormones involved in the secretion of milk, which have been conducted in the author's own laboratory, have been introduced. In comparison with the third edition, 24 new cuts and 20 more pages have been added.

MINOR SURGERY. By LEONARD A. BIDWELL, F.R.C.S., Senior Surgeon West London Hospital, Dean of the Post-Graduate College, Consulting Surgeon to the Black Heath and Charlton Hospital, and to the City Dispensary. Author of *Hand-Book of Intestinal Surgery*. Published by Hodder and Stoughton and Henry Frowde, London, 1913.

The second edition of this work, which has become necessary within a year of its first appearance, is again before the reviewer for comment. The lamented death of the author has occurred while the book was passing through the press. The original work has been revised and many alterations incorporated. Among the new matter added is a chapter upon bandaging and one upon the treatment of minor injuries. In its present form the book has been enhanced by many new illustrations, and the index enlarged and made more comprehensive.

There is little to criticize, except in a favorable manner, in this very excellent little exposition. It is well written, short, and all unnecessary details are omitted. The usual operations and technic of minor surgery are described in an able way. The work demonstrates the clinical experience which the author has had in this field.

Under title "Various Operations," are described Incision of an Appendix Abscess, Strangulated Hernia, etc. It would seem that the descriptions of these operations hardly has a place in a work of this nature. A little surgical knowledge is a dangerous thing. He advises, without qualification, "that no attempt should

be made to take away the appendix itself or to separate it from its adhesions." He also advises, in certain cases of appendicitis and of pelvic abscess, rectal drainage. This procedure is not in favor among American surgeons.

The work is concluded in a chapter describing Preparation for Operations in Private Houses, Arrangement of the Operating Room and After-treatment. This matter is well considered, though briefly. He advises the adoption of the Fowler position in the routine treatment following laparotomy as an aid in checking post-operative vomiting and as being the most comfortable position for the patient.

This little volume will remain a monument to its author and a work of value to those who are desirous of learning the practice and principles of the lesser branches of surgery.

ROYALE H. FOWLER.

SURGICAL OPERATIONS WITH LOCAL ANESTHESIA. By ARTHUR E. HERTZLER, M.D. New York. Surgery Publishing Co. 1912.

This convenient little book of about 200 pages is divided into 17 chapters. It furnishes in detail the technique of the common operations which may be performed under local anesthesia. The author has in mind the needs of the general practitioner and the surgeon working under disadvantages and without accessibility to hospitals. In his descriptions he presents a record of his own methods of tried efficiency.

The work is presented in excellent form, marginal notes in red ink adding much to its value. Illustrations are excellent and profusely interspersed throughout the book. Those who wish to learn about local anesthesia need have no hesitation in referring to this book, and will probably find what they seek.

ROYALE H. FOWLER.

COMPENDIUM OF DISEASES OF THE SKIN. Based on an analysis of thirty thousand consecutive cases, with a therapeutic formulary. By L. DUNCAN BULKLEY, A.M., M.D. Physician to N. Y. Skin and Cancer Hospital; Consult. Dermat. the Randall's Island Hospital, and Hospital Ruptured and Crippled, etc. Fifth Revised edition of the Manual of Diseases of the Skin. Paul B. Hoeber, 69 East 59th Street, New York. 1912. Price, \$2.00 net.

This compendium is essentially the same as the revised manual of fourteen years ago, and is as then, simply a supplement to the author's public lectures on skin diseases.

While many of the chapters have been rewritten, the book is not up-to-date, indeed the author does not claim it to be.

There are many valuable hints scattered throughout the pages, which cannot fail to be of benefit, providing they are correctly interpreted.

It is the reviewer's humble opinion, that these so-called "aids to the proper understanding" of any medical subject, which are primarily intended for the general practitioner, do more harm than good, for "a little knowledge is a dangerous thing." J. M. W.

A TEXT-BOOK OF PHYSIOLOGY: for Medical Students and Physicians. By WILLIAM H. HOWELL, Ph.D., M.D., LL.D., Professor Physiology, Johns Hopkins University. Fourth Edition. Revised. Octavo of 1018 pages, fully illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, \$4.00, net. Half Morocco, \$5.50, net.

This, the fourth edition of Professor Howell's excellent text-book gives evidence of the author's desire to keep it abreast "of the advancing tide of physiological knowledge"; additions and changes here and there showing clearly that it has been carefully reread with that object. The text is, in general, accurate, the style lucid, the order of arrangement of the topics, though not in accord with that of some of the courses in physiology as given in our medical schools, is quite

acceptable, the amount and character of the material presented is satisfactory (a matter of no small weight in the valuation of a text-book), and the form of presentation logical. On the whole it seems to be, for students of medicine, the most useful of all text-books on the subject published in English since the now classic treatise of the late Sir Michael Foster.

A brief chapter on the physiology of the voice, and one on animal locomotion would undoubtedly enhance its value, although both these subjects are neglected by many of our teachers of physiology.

J. C. CARDWELL.

ORGANIC AND FUNCTIONAL NERVOUS DISEASES. A Text-Book of Neurology. By M. ALLEN STARR, M.D., Ph.D., LL.D., Sc.D., Professor of Neurology, College of Physicians and Surgeons, New York. Fourth edition, enlarged and thoroughly revised. Octavo, 970 pages, with 323 engravings and 30 plates in colors or monochrome. Lea & Febiger. Philadelphia and New York, 1913. Cloth, \$6.00, net.

This work has such an established place among our standard treatises on the subject and is so favorably known that a new edition can be welcomed without an elaborate re-review. The gradually increasing size of the volume (from 816 pages in the second edition to 970 in this, with illustrations to correspond), is a natural growth to meet the requirements.

Mental diseases are not included, barring certain symptoms or such conditions as psychasthenia.

The two valuable new chapters deserve a word. That on disorders of sleep, really on insomnia, is excellent so far as its space permits. The simpler means for its relief chiefly are given and might well be further extended; the use of chloral opiate or many of the later hypnotics, however, should only be countenanced with a clear warning, much as he gives after discussing migraine.

The chapter on headache is only less excellent. Syphilis is not directly mentioned, except in the etiologic table. And mention might have been made of blood-pressure determinations as an aid in the control of such conditions. The five pages on migraine are specially good, except for commendation of proprietary, and the gram doses of thyroid extract.

W. B.

NAPOLEON'S CAMPAIGN IN RUSSIA: ANNO 1812. Medico-Historical. By Dr. A. ROSE. Published by the Author. New York. 1913.

Dr. Rose, noted as an advocate of the use of modern Greek as the international language of science and as a reformer of our more or less hideous terminology, proves his versatility in this very readable little book on the medical features of Napoleon's campaign in Russia. The gruesome details regarding the typhus fever which attacked the army during its retreat give one a full realization of the horrors of yesterday's battlefields. The story of the campaign is dramatically told, and the medical facts woven into it without lessening the literary values. If the reader can imagine a Hugo equipped with medical knowledge and insight writing the story of this famous campaign, he will have a just idea of Dr. Rose's style. J.

DEATHS.

CLEVELAND FERRIS, M.D., New York City, died August 21, 1913.

A. S. HOTALING, M.D., Syracuse, died August 8, 1913.

THEODORE S. E. S. VAN RIEMST, M.D., New York City, died August 21, 1913.

EMILY H. WELLS, M.D., Binghamton, died August 21, 1913.

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EDITORIAL DEPARTMENT

HOPE FOR THE PARETIC.

WHEN we reflect that it was less than a decade ago that it was considered impossible to transmit syphilis from the human to the lower animals and that it was not until Schaudinn in 1905 discovered the cause of syphilis to be the presence of the spirochæta pallida, we can well marvel at the rapid advancement we have made in the knowledge of this protean disease. And now within the present year the absolute isolation of the spirochæta pallida from the brain substance of a paretic and with it the transmission of syphilis to a rabbit, we cannot but feel that this result in biologic-pathology is pregnant with potential possibilities in opening a way to the cure of paresis. The importance of this isolation lies not in the fact of the parasite being found in the brain, but in the brain of a paretic.

Long before this, cases were reported in which the findings of paresis occurred along with those of cerebral syphilis. "Straüsler has recently added two cases of the combination to several he had already reported. Ranke, Dunlap and others found spirochætæ in the pia mater and sheaths of vessels in congenital syphilitic brains." The differential pathology in paretic syphilitic infection can be briefly summed up as follows: "A diffuse progressive deterioration in all mental fields and not the *démence lacunaire* observed in the familiarly recognized syphilitic brains."

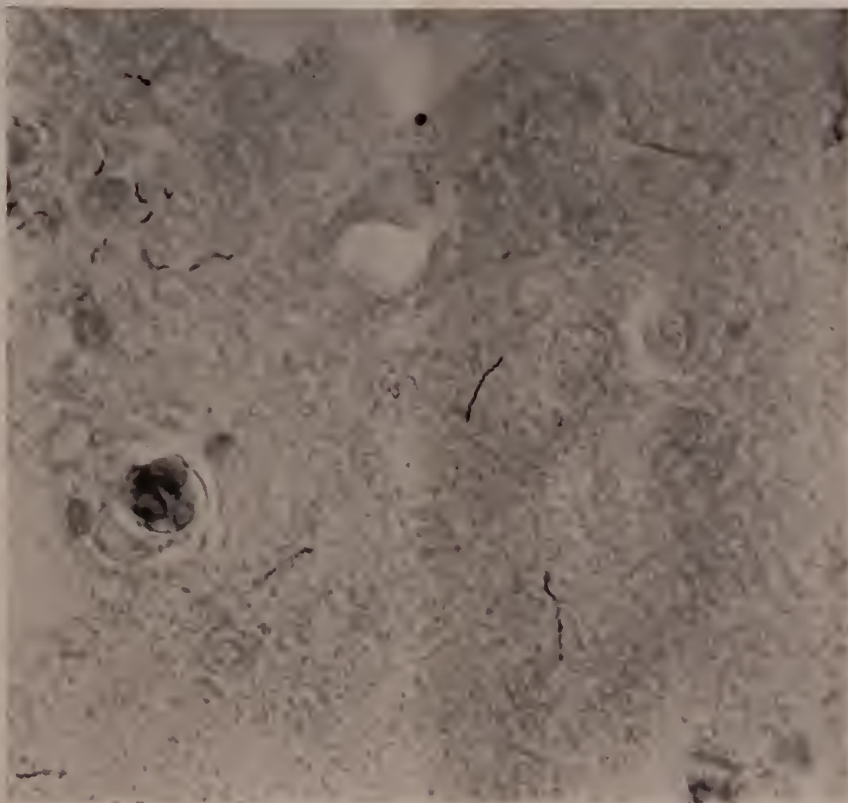
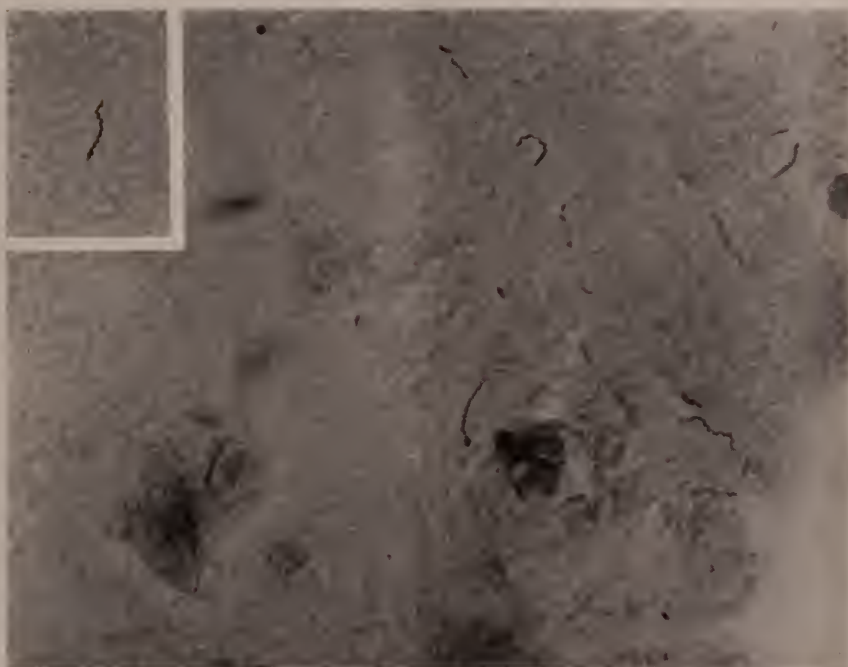
To Noguchi belongs the honor of being the first to find this organism in the cortex of the brain and spinal cord in fresh specimens of brains from subjects who had died from general paralysis. To his confrères, Drs. Moore and Flexner, and other co-workers at home and abroad who have confirmed his findings, like honor and credit are due. During the past month a confirmatory finding of importance has been reported by Foster, assisted by Tomaszewski, who, resorting to brain puncture in the living subject were able to demonstrate living spirochætæ in the aspirated cortical substance in eight out of twenty cases. It is difficult at the present time positively to state, just how important a part of the presence of the spirochætæ pallida in the sclerosed central nervous system, plays in the pathogenesis of general paralysis. The biological character of the spirochæta pallida strains, isolated through transmission of the organism from the human paretic shows that it is less virulent than the usual strains from a non-paretic syphilitic. This seems to correspond with the fact that early manifestations of syphilis in persons becoming later paretics were in the beginning mild in character. There exists also a peculiar hyper-susceptibility in that a human syphilitic will bear multiple inoculations with a syphilitic virus and show no reactions, and after a long interval of rest a mild injection of the same virus will set up a reaction so dire in results that death may fol-

low. (Proving that the severity of the attack has no relation to the severity of the paretic and tabetic terminations, and the great importance of the study of anaphylaxis.) If future observations show that the rabbit into whose testicle was injected 1 cubic centimeter from a brain emulsion of a paretic subject, and which in 20 weeks exhibited a syphilitic lesion in which were found spirochætæ, and strongly reacted to a Wassermann test becomes progressively paralysed, we can feel convinced that this particular organism is the specific cause for general paralysis and that parasymphilis and metasyphilis are misnomers. The fact that Noguchi, employing his own technique, found the organism in but 25 per cent. of the cases, and that others employing different ones found less than 10 per cent. does not imply that the parasite is not present in all cases of paralysis. The variability in the percentages argue in favor of the development of other and more sensitive techniques to prove or disprove as far as possible the universality of the germ in these cases.

Most syphilographers hold that syphilis is a curable disease under proper, carefully carried out treatment, and by others that it is often self-limited. We cannot see into the future to learn if our long recognized treatment including the more recent addition of Ehrlich's discovery will prevent the terminal paralysis, nor can we peer backwards to ascertain if the present day prevalence of paresis is due to inefficient treatment, neglect of treatment, intemperate or some other pernicious mode of life, or if in spite of treatment carefully administered the disease remained quiescent for a time, to break forth later with destructive fury. There is also another view to be taken and that is that the organism, be it for the time passive or virulent, is possessed of a resistant power capable of withstanding any manner of attack. It is at least a fair hypothesis to assume that the organism migrating to, and entrenching itself within the substance of the brain, acts as an irritant producing an inflammatory action ending in sclerosis of the tissues with resulting general paralysis. However, the

feature of transcendent value is the knowledge of the cause of paresis and the dawning light of hope it sheds over our eventually finding a curative agent with power to combat and destroy the enemy, which so far has laughed defiance at our helplessness. Herein lies the field in which the therapist, the clinician and laboratory worker can well vie with each other in their efforts to find some chemical or serum which will destroy the organism in its protected habitat.

Unscientific as it may seem the value of empiric medication is well shown in the classic exhibition of mercury, arsenic and iodine in the treatment of syphilis, which to-day hold undisputed sway, their efficiency being now greatly augmented by salvarsan. How or why they act we do not know. We do know from the improvement and apparent cures under their administration that they must have a distinctive affinity for the spirochæta, but that some member of the family or genus is peculiarly resistant, or that when destroyed in some foci they proliferate in others. In search for a new remedy with the knowledge of our present remedial agents, we will be compelled to pursue a path along the byway of chemo-therapy for some basic element or chemical compound which will have a strong affinity for the organism, in the substance of the brain and cord, non-toxic to the individual. Bearing in mind that one of the constituents of the cerebro-spinal system is fat, that this fat has a neutralizing effect over both mercury and arsenic, lessening their power of destruction against the parasite fortified within its fatty cell. Ehrlich has shown "that when certain coloring matter is injected into a living animal it may stain only certain tissues. The essential point in this theory is that certain substances act on tissue cell or parasite when taken up by that body." While these substances may not act directly they may become parasiticidal by changes within the body. This opens an illimitable field for experimentation. Failure in chemo-therapy may be compensated for by the finding of an antisymphilitic serum whose success will add another epoch in medicine made glorious by so many others.



(NOGUCHI AND MOORE: TREPONEMA PALLIDUM IN THE BRAIN OF GENERAL PARALYSIS)
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Original Articles

CANCER OF THE UTERUS—IMPORTANCE OF EARLY DIAGNOSIS.*

By LE ROY BROUN, M.D.,

NEW YORK CITY.

IN the course of an address on "Menace of Cancer" before the Academy of Medicine of Northern New Jersey, Mr. Frederick L. Hoffman, statistician of the Prudential Insurance Company of America, said, in part as follows:

"The cancer question is unquestionably entitled to serious public consideration, not only because of insidious character of cancerous affections, but also because of the constantly rising death rate, with a resulting heavy mortality in adult life. Approximately, the number of deaths from cancer in the United States per annum is 75,000. For the civilized world, upon the best obtainable returns, the number of deaths from cancer was approximately half-a-million a year. Conceding all that could reasonably be said on the ground of possible inaccuracy of the statistical information on the mortality of cancer, it can no longer be questioned but that cancer is on the increase throughout the United States though to a variable degree, according to age, sex, race and locality. The age factor is of most importance, since cancer is relatively very rare in early life, and quite common at ages over 40. The average age of death in cancer of all forms was 59 years for the registration area of the United States. Of the total mortality at ages 45-64 the proportion of deaths from cancer is 7 per cent. for males and 16 per cent. for females. At ages over 45 cancer is of greater importance than tuberculosis, since the number of deaths from cancer in 1910 in the registration area was 34,525, against 21,968 deaths from tuberculosis.

"The cancer death rate is apparently about the same in cities and rural districts, but the information on the subject is rather misleading without the required correction of deaths of cancer patients in cities from surrounding country districts. The rate is higher for the white population than for the colored but this might be, in part at least, the result of superficial or indifferent diagnosis. Previous to the Civil War cancer had been considered rare among the negroes of the South, but the cancer death rates among the colored at the present time are approaching the rates for the white population, and with particular reference to cancer of the uterus the rates for colored women are in excess of the corresponding rates for white women. It would seem that cancer is exceedingly rare among the native Indians, and the disease is apparently not common among the Chinese in the United States and China, as well as among the East Indians, including the natives of Ceylon.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

"The cancer death rates for different countries, while not strictly comparable, yet disclose such surprising differences that it would seem safe to conclude that local conditions are at least partially responsible for the prevalence or absence of cancer. The rate is highest for Switzerland, the Netherlands, and Norway, and lowest for Jamaica, Servia and Ceylon. The United States occupies about a midway position, with a rate slightly lower than Germany and Austria and slightly higher than Ireland and New Zealand. The mortality from cancer among Europeans in Ceylon is very low.

"Comparing the mortality from cancer by organs and parts, and according to sex, ages 40 and over, it is shown by the returns for the United States registration area that the mortality from cancer of the stomach and liver is about the same for men and women, but cancer of the rectum, intestines and peritoneum is more common among women, yet cancer of the buccal cavity and skin is much more common among men. Excluding cancer of the generative organs and the breast, the cancer death rate of the two sexes are about the same, or, respectively, 154 per 100,000 for males and 162 for females. Aside from cancers common to both sexes, the death rate from cancer of the generative organs among women was 80 per 100,000 of population and of the breast 50. It is, therefore, largely the special liability of women to cancers of the generative organs and the breast that account for the higher death rate from cancer among women generally.

"There is evidence that certain occupations predispose to cancer, particularly such as exposure to coal soot and other products of coal combustion. The common occurrence of cancer among workers in tar and pitch has made necessary the adoption of special regulations for the protection of workers employed in the manufacture of patent fuel or briquettes.

"As regards the question whether the statistical evidence of an increase in cancer can be relied upon as trustworthy, it would seem that no mere improvement in diagnosis or death certification can explain the gradual rise in the cancer death rate in American states and cities during the last thirty or forty years. A special analysis of the combined statistics of American cities since 1870, and separately for New Jersey, New York and Philadelphia, sustains the conclusion that the increase in cancer is real and not merely apparent, on account of the improvement in statistical practices. The increase has been much greater, however, at advanced ages and particularly so at ages 60 and over, and for both sexes. Considering, for illustration, the cancer mortality of Massachusetts for the five years ending 1910, it appears that the cancer rate for ages 60 and over has increased 99.8 per 100,000 for males and 80.5 for females. In New Jersey the rate at all ages has increased from an average of 36 per 100,000 of population

during the four years ending with 1882 to 70.6 during 1908-1912. In New York City the rate has increased from 54 during the first four years to 81 during the last, and in Philadelphia from 45 to 85. A similar increase has been observed in practically all civilized countries, and making due allowance for improvement in medical diagnosis and death certification, there still remains no serious question of doubt but that the liability to cancerous affections is greater at the present time than during the past."

I have presented to you these extracts from the address of Mr. Hoffman for the purpose of showing the importance given to this subject by the insurance companies of America. The statements are those made by one whose life work is to bring together and to co-relate the dominant factors tending to shorten human life and the weight of his facts are enormous. In women of America for all ages 130 out of 100,000 die of cancer of the uterus and breast, of which the greater number, 80 out of 100,000 are due to disease of the uterus. In the total mortality among women between the ages of 45 and 64 cancer of the uterus and breast claims one in eleven.

We know that in the earliest stages cancer is a local disease and in this condition can be cured. Later, metastases of the regional glands render curative measures of small avail.

Cullen in 1900 first brought out the fact that in operable cases of carcinoma of the cervix metastases was rarely found in the adjacent glands.

Winter in 42 out of 44 autopsies on patients in whom cancer was confined to the uterus found an absence of metastatic deposits.

In Wertheim's splendid monograph, in which he discusses the results of the extended abdominal operation in 500 cases, he states that in 41 cases there was gland involvement. Adhering as he does to the principle of gland removal whenever enlarged, he further states that only five out of the 41 cases of gland involvement passed the five year limit of freedom from recurrence.

Surgeons are practically in accord that in the large majority of cases the extension of the process in the early or operable stages is by continuity into the surrounding tissue and that our hopes of curing our patients is that they shall present themselves to the surgeon at a time when a wide removal of the tissue adjacent to the involved area will go well beyond the cancerous process.

In the early operations of slightly over fifteen years past, the removal of the uterus by the vagina, or a high excision in early cases, either by the knife or cautery, was all that could be done. The nearness of the ureters prevented active excision wide of the diseased area. Every operator knows that in recurrences following such operations the secondary invasion is first seen in the line of incision in the vault of the vagina, the carcinomatous process was not primarily re-

moved during the operation. The limitation of the operability of the patient for the early simple hysterectomy was, that not only must the growth be confined to the cervix, but also that the ureters must be free, and that the bases of the broad ligaments must show no infiltration. Under such favorable conditions, from ten per cent. to twenty per cent. of those operated on were saved for useful lives.

The possibility of benefit from the simple hysterectomy must be confined to the very few in whom the involvement is discovered in its incipiency and it is in such very early conditions that I feel that the operation should be favorably considered, even in the light of our present knowledge. It has a minimum death rate of two to five per cent.; the recovery is even; the complications are nil; and the chances of a cure are fair. I believe that such a choice would be justified as against the more extended operation, which, though carrying with it a greater possibility of a cure, yet also bears a higher immediate mortality and a recovery with possibilities of complications and disagreeable sequela.

Schuchardt, recognizing the futility of operations on cases with involved broad ligaments by the accepted methods of the day, developed and laid before the profession, in 1893, the technic of the extended vaginal operation in which the ureters are isolated, pushed out of the way, and the uterus is removed with a wide attached cuff of the vagina (one-third), together with a wide extent of the parametrium.

Shauta, two years later, modified this operation in making the perineovaginal incision as a later step in the operation, instead of at the beginning as laid down by Schuchardt. With this modification Shauta has pushed the extended vaginal operation well forward, and reports in the year 1911, 445 operations for the ten previous years, with a total mortality of 8.9 per cent. Of this number, 211 had been operated on five years earlier, seventy-three or 39.7 per cent. showed no recurrence after this interval.

By exposing and pushing aside the ureter in this technic, a far wider field of removal is possible, and the number of patients who can be given the benefit of an operation is greatly increased.

While Shauta and his adherents were perfecting their technic by the vaginal route, the majority of operators were doing similar work through the abdomen. Clark and Ries, of America, independently of each other, in 1895, suggested the extended abdominal operation, which involved not only the extirpation of the uterus with a large portion of the parametric tissue, together with one-third of the vagina, but also a removal of all vaginal glands possible in the pelvis.

This operation carried with it such high mortality (thirty per cent.) that few surgeons in America would adopt it, and even at present, though the mortality has been reduced from eight

to fifteen per cent., the collection of statistics in 1912 (6) gave hardly more than 500 cases for America. Abroad, however, the temperament of the surgeon and his large clinical material under absolute control, enabled them to bring the technic of the extended operation to the state of the present perfection.

Wertheim, whose name is chiefly associated with the abdominal operation, introduced the use of the vaginal clamp, by which the vaginal tube was completely closed before it was cut across in the last step in the removal of the uterus, and by so doing minimized the possibility of sepsis, which was, prior to this suggestion, of frequent occurrence. He also introduced the use of the parametric clamp for use in removal of the parametric tissue, and thereby prevented what at times is embarrassing venous bleeding.

An incomplete list of the radical operations done by foreign surgeons was collected by Jacobson, in 1910. The number was 2,647. While incomplete at that time, it falls far short by fully an equal number of that of the present day.

To these surgeons we are indebted for our present knowledge of the life-saving value of the wide extirpation of the uterus, whether by abdomen or by vagina. Weibel, the first assistant in Wertheim's clinic, on his recent visit to America, during the late Surgical Congress in New York, presented the latest results from the clinic of his chief as follows:

From 1898 to 1912: 1,430 cases seen in clinic, 71 refused operation, 689 inoperable, 675 extended radical operations, 50 per cent. operability. The mortality, while 30 per cent. in the first 100 cases, had been reduced in the last 174 consecutive cases to 9 per cent. The freedom from recurrence after five years is, including primary deaths, 43 per cent.; excluding the primary deaths, 53 per cent.

It will be seen that through the extended operation by the abdomen or vagina, considerable tissue is removed beyond the uterus, and by so doing the field of application of the operation is not only largely increased, but the possibilities of a permanent cure are equally so.

The measure of value of any operation is to what extent it is curative in every instance of the disease for which its removal is intended. Measuring the value of operations for cancer of the uterus by this criterion, or establishing what is known as their absolute efficiency, we have:

For the extended vaginal operation the statistics of Shauta give, in 1911, the absolute curative efficiency of this method with cancer of the cervix as 16.1 per cent.

Wertheim, in his 1912 statement, gives the absolute curative efficiency of his operations by the abdomen as 19.5 per cent. The value of the simple hysterectomy, either by vagina or abdomen, is not so well established. It cannot be, however, over from 8 to 10 per cent.¹

We have no established means at the present

time of treating cancer, except by removal in a surgical manner. The small efficiency of this, our only hope, is only 19.5 per cent., at the highest, for the reason that the largest number of cases presenting themselves are beyond the possibility of relief. If the ideal could be reached and all patients should seek trained operative assistance at the earliest advent of the symptoms, the absolute efficiency of surgery would reach at least the present freedom from recurrence for five years, which is in Wertheim's report 43 per cent., and the operability fully 90 per cent., there being a few cases giving no symptoms until beyond operative measures.

The average operability of patients applying in nine of the large foreign clinics is 60 per cent. In America, with the exception of the Johns Hopkins Clinic announcing 60 per cent., there is scarcely any clinic that can give over 25 per cent., the difference between the foreign and our clinics being due partly to education and partly to centralization.

Faure in a recent review of 250 cases of cancer of the uterus operated on since 1896 divides the patients into three classes:

1. Those of early cancer of the cervix in which the disease invaded only one lip and in which the mobility of the uterus was unimpaired. In such the mortality was 5 per cent. and a subsequent recurrence of the disease was the exception.

2. Those in which both lips of the cervix were involved together with the vaginal mucosa and the base of the broad ligaments. Among these the operative mortality was 20 per cent. and the recurrence 50 per cent.

3. Those in which the mobility of the uterus was almost lost. Here the mortality was fifty per cent. and the recurrence the rule, yet on account of an occasional absence of the recurrence he felt that an operation was justified.

It is therefore easily seen that the hope of the unfortunate patient is early diagnosis and early treatment, and it is the duty of every surgeon to impress upon the entire physician body the absolute necessity of being keenly alive to the first symptoms of cancer; to insist on an examination, and to insist on a properly trained man seeing all suspicious cases. This can be done only by constantly and frequently calling the physician's attention to this subject.

Our duty does not rest here, but similar educative efforts should be directed to instructing nurses and midwives and druggists, all of whom frequently come more intimately in contact with patients who often talk to them of symptoms, which they may hesitate or regard as too trivial to bring to the notice of a physician.

To Winter we owe more than to anyone else the educative crusade that originated in Prussia, and through his efforts has been attracting the attention of almost every country. I cannot do better than to quote a few extracts from his address before the German Central Committee for Cancer Investigation in March, 1911 (7):

¹ Von Ott recently reports fifteen per cent. of absolute cures in vaginal hysterectomy.

He states that despite great advances in medicine the prophylaxis is the most important feature, and to secure this we must have the co-operation of the public. This we have in tuberculosis, syphilis, and other infectious diseases, through enlightenment of the people in avoiding infection. In cancer the problem is different. We do not seek to protect the healthy from contagion but from the consequences of their own neglect. The necessity of enlightenment is a product of modern surgery. The highly unsatisfactory results, even of the widest operations, make it necessary first of all to secure for the public early diagnosis and early operation. We do not know how many years will elapse before we cease to cure cancer by operation, but whatever the methods of the future—radiotherapy, chemical remedies, or immune sera—we must still have early diagnosis and treatment. The enlightenment is, therefore, something permanently necessary.

Discussion.

Dr. HOWARD W. LONGYEAR, Detroit, stated that he had not expected to open this discussion.

The operation of complete removal of the uterus still has a primary mortality of over 15 per cent. We have to discover something in the way of the nature of the etiology of the disease before we can do anything better to reduce the high mortality. The early diagnosis of cancer of the uterus is very important, as early operation gives the only hope of radical cure, I think the laity should understand that when certain symptoms exist, such as an unnatural discharge, they should immediately consult a physician; although we see many old developments which have been treated by physicians for months and sometimes years, which indicates the need of education in the profession also. The crying need is for the early recognition of the disease. I have had very little success in operating; perhaps I have not cut wide enough, but my success is about as great as those who have.

Dr. EARL P. LOTHROP, Buffalo: Our experience with cancer of the uterus is more encouraging than that of the essayist. Cases are being sent in from the workers in the field much earlier than formerly, and many are sent in on suspicion. I regard this as a sign of increasing interest and thoroughness on the part of the much-blamed country doctor. It is true that most of the cases are advanced, but the public, especially in rural communities, is not yet awake to the importance of early clinical signs nor weakened from the traditional folklore that a woman should have all kinds of flowing at the period of menopause.

In the latter class of cases I believe the cautery as used by Byrne of Brooklyn, to be the most effective weapon in prolonging life and occasionally saving it. Our records show several women living today who were treated by this method seven, eight and nine years ago.

Dr. REUBEN PETERSON, Ann Arbor, Michigan:

I began my work on the radical abdominal operation in 1903. At first I was very much discouraged, since my mortality in the first few cases was over 40 per cent. and even now with over 60 cases the mortality is still 22 per cent. The reason for this is very apparent. Patients with cancer of the uterus do not come to us early enough and there are many primary deaths because we attempt the impossible—attempt to remove the disease in patients who are not good surgical risks, because the disease is too far advanced. It seems to me we have about reached the limit of what we can accomplish surgically. Any further gain must come from educating patients with cancer of the uterus to consult the physician earlier. Then the radical abdominal operation will be the means of saving many lives. As regards the means to accomplish this early diagnosis and treatment of cancer of the uterus it would seem best, in our campaign of education, to try and teach patients the need of consulting a physician early when the symptoms first appear. We should not endeavor to teach them to diagnose their own cases, but rather teach that certain symptoms, such as irregular bleeding or vaginal discharges are significant and of enough importance to warrant their seeking early medical advice. What can be accomplished by publicity is shown by the history of appendicitis. In the early nineties it was difficult to convince patients with this disease of the necessity for operation. Now every person with a pain in the right side consults a physician for fear he or she may have the disease whose symptoms have been drilled so into the public mind. The same would be true of cancer of the uterus and other forms of cancer, once let the public learn the symptoms and signs of the disease.

I wish to take this occasion to say a few words of a method of treatment I have been employing for the past year for the unfortunate women with cancer of the uterus, who apply too late for the performance of the radical operation. I refer to the prolonged cautery treatment recently advocated by Percy. The cautery has been used for years in the treatment of uterine cancer. The excellent results obtained by the late Doctor Byrne, of Brooklyn, are known to you all. The cautery is far more effective than the curette or zinc chlorid. In the past the trouble has been that we have not dared to go far enough with the charring of the tissues, for fear of burning through the uterus and doing injury to the pelvic organs. Percy's contribution to the subject has been his advocacy of regulating the application of the cautery through the hand of an assistant placed on the abdominal cavity. I have tried this method in twenty-five or more cases of advanced uterine carcinoma and can not speak too highly of it. It does not cure the patient, but it certainly prolongs life and makes the latter much more endurable.

THE ETIOLOGY AND MORBID ANATOMY OF DUODENAL ULCER.*

By MARSHALL CLINTON, M.D.,
BUFFALO, N. Y.

DUODENAL and gastric ulcer are so closely allied anatomically and pathologically that in a discussion of the etiology of duodenal ulcer we must take some notice of the factors that produce gastric ulcer. A great amount of experimental work in the production of ulcer has been carried out by different workers. Ulcers produced by direct trauma of the stomach wall; by feeding animals filth; by using stomach scrapings injected into other animals to produce a cytolysis of the mucous membrane, have been followed by acute ulcer. All the experimental work has failed to this extent: chronic ulcer of the stomach or duodenum has not been produced. Acute ulcers have been formed as a result of these various experiments, but they come under the head of acute ulcer, while by custom now, when we speak of duodenal ulcer, we mean the chronic, indurated ulcer.

Chronic ulcer anywhere in, or on, the body means recurrent damage to surface tissues. From within the tissues, as by the distension of backed up veins in varicosities, the attack of microorganisms from without, or the direct trauma of some repeated irritant. In the mucous membrane of the stomach and duodenum we have a rough tissue, loosely attached to the enveloping muscular structure, thrown into folds except when under extreme distension. When the peristaltic action of the muscle structure churns the contents of the stomach it squeezes on the mucous membrane, and in forcing the contents along the stomach wall causes a rolling, grinding action of its contents against the mucous membrane. In the stomach chronic ulcer is most commonly found where the narrowing outlet jams the gliding contents against the stomach by its peristaltic squeeze. In other words, the normal trauma of the stomach contents grinding its way along the less mobile lesser curvature may be considered as a factor at that point. (Stromeyer.)

The outline of an ulcer carries certain suggestions as to its etiology. Chronic ulcer is generally rounded or oval with the long axis of the ulcer at right angles to the axis of the stomach or duodenum. A hard peristaltic wave may catch a loose fold of mucous membrane and by an intussusception-like pull draw on it hard enough to crack the membrane across the base. The oval or round shape is the natural shape a fissure would assume under continued irritation in tissue of that type.

The gastric juice plays an undoubted role, for it is the usual clinical observation to find ulcer associated with an excessive quantity and greater degree of acidity than normal.

The pylorus is a sensitive part of the digestive system and is open to impulses from the viscera to the brain, and *vice-versa*. A pain impulse arising any place in the body, except the brain itself, tries when its tissues are threatened with harm to send an impulse to the brain. Any impulse of this type originating along the intestinal tract, or its associate structures, sends its primary impulse of pain to the brain by way of the pylorus. The pylorus is the signal point, and acts on all these impulses by contracting and holding back stomach contents that the rest of the intestinal tract is unable to refuse. When the pylorus acts beyond its normal physiological limit of time we call it "pylorospasm," and the patient's conscious brain is attracted to the stomach. Any pain impulse then, from the diseased appendix, adhesion, etc., will be expressed as a prolongation of the sphincteric action of the pylorus; a holding back of the gastric content; an increased effort of the automatic peristalsis of the stomach wall; an increase in the secretion and its acidity to persuade the pylorus to let go, and finally the ejection of the stomach contents with more than normal force against the duodenal wall. The location of duodenal ulcer seems to bear out this idea, for it is generally found where the stomach content is squirted against the duodenal wall. We might say that any impulse from above or below to the pylorus that causes it to tighten unduly is a predisposing factor in chronic ulcer formation.

The pathological anatomy of ulcer is interesting and throws some light on its etiology. The ulcer has a typical punched-out appearance. Sections of ulcers do not seem to bear out the old idea that thrombosis plays a prominent part in its production. We find one edge more abrupt than the other, overhanging, inverted, with the erosion not uniform at the base but deepest on the proximal side. We find a necrotic zone around the ulcer that is not infiltrated by bacteria. Outside of this is a hyperæmic zone containing few, if any, bacteria, while even the surface of the ulcer is relatively free from bacteria. Bacteriologically the findings are negative and the issue changes can only be explained on the hypothesis of chemical digestion by the gastric juice. The thrombosis of blood vessels does not extend beyond the action of the gastric juice on the tissues, and the vessels at the margin of the ulcer show no thrombosis except where the gastric juice has produced a chemical necrosis. To repeat: We believe ulcer on the mucous membrane and deeper structures to be the result of mechanical trauma, plus the chemical action of the gastric juice. To become chronic this trauma must be frequently repeated. A disturbance of the action of the pylorus by reflex impulses from other structures or the increase in quantity and acidity are the essential causes of chronic duodenal ulcer.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

THE DIAGNOSIS AND PROGNOSIS OF DUODENAL ULCER.*

By JAMES TAFT PILCHER, M.D.,

BROOKLYN, N. Y.

REPORTS of recent society proceedings and various periodicals have contained so many communications upon this subject that one might imagine it by now quite devoid of other than historical interest, yet the writer believes that a more careful consideration will show that thus far only a few of the more salient facts relevant to the disease have been outlined.

The history of an uncomplicated duodenal ulcer, as obtained from some two hundred cases personally observed, has in the great majority of them elicited four pre-eminent factors: First, the chronicity of the complaint; second, the periodicity of the exacerbations of epigastric distress; third, the occurrence of *pain* of a peculiar character with precise time of onset; and fourth, the *control* of this discomfort by the ingestion of food or alkalis.

The average duration of the complaint in the earlier cases was well over ten years, while it is encouraging to note that lately this long period has been markedly reduced, owing without doubt to our growing familiarity with the condition and its symptomatology.

Indeed, one should seldom, with our present knowledge of duodenal ulcer, be led astray in the diagnosis of the patient, usually male, who remarks that in the beginning of his trouble he noticed the onset of pain or burning in the pit of the stomach accompanied by sour eructations, belching and possibly regurgitation at times of small quantities of acrid material, frequently termed *water brash*, which condition at first lasted from a few days to several weeks, when suddenly, whether without medication or in spite of it, his distress ceased, and was followed by a varying interval of complete health, when the same syndrome was repeated. In many cases probably the interval of relief was not so complete and he merely had his good and bad days, with exacerbations at varying intervals of time. Either of these phases may continue for years, but finally the periods of remission become shortened and those of distress longer, until a stage is reached where there may not be complete relief at any time. Such an anamnesis is in itself sufficient to warrant the examiner in forming a tentative diagnosis, at least, of a duodenal ulceration. It typifies well the factors of chronicity and periodicity previously referred to.

Possibly, however, the most corroborative subjective symptom to be elicited is the peculiar effect that ingestion of food has on the epigastric distress, which act will almost without exception be found to give immediate relief, at least in the earlier stages of the condition before

complications have arisen. We have been able to show experimentally that the reason for this phenomenon is because the mechanical stimulus thus given to the stomach excites a reflex flow of the alkaline duodenal secretion which thus neutralizes the irritating hydrochloric acid present in the duodenum.

The pain complained of is usually characterized as a burning or gnawing, frequently as an intense hunger, amounting to an actual ache. One also hears it described as an "all gone" sensation.

Its character remains fairly constant until the chronic thickening has produced a moderate stenosis or crippling adhesions have formed involving the gall bladder or other adjacent structures.

The most important point regarding it, however, is to ascertain the time of its occurrence, which averages usually between two and one-half to four hours after meals. This time element recurs with the most remarkable precision and exactitude; and while differing in different patients, practically never changes in an individual case until other processes are engrafted on the original lesion. We have noted that the nearer the pylorus the ulceration is the earlier seems to be the onset of the distress.

We must also realize that we have in the duodenum two distinct pathologic processes to deal with. It is to be noted that ulcers on the anterior superior surface differ very markedly in character from those on the posterior wall, in that the former as a rule have a very slight defect of the mucous membrane in no way corresponding to the area of infiltration felt from the outside, the orifice seldom exceeding the size of a B.B. shot, frequently being recognized as a mere slit; while those on the posterior wall approach in character the typical punched-out round gastric ulcer. The latter seem to perforate rapidly through the several coats of the intestine and are usually found to have their base formed by the pancreas, which is frequently deeply invaded by them. The surgical significance which these different pathologic processes offer has been lately pointed out admirably by W. J. Mayo. The variation in the symptomatology evidenced by these two types of duodenal ulceration offers also to the diagnostician further data for differential diagnosis, since in analyzing carefully the series forming the basis of these remarks it was noted that those cases showing the callous round posterior ulcer gave much longer histories, were not so acute in the differentiation of the cardinal diagnostic factors, did not suffer so much acute distress, but complained of a more continued discomfort which in turn was not affected so definitely by the intake of food and usually caused the maximum of duodenal deformity, and, consequently, the greater degrees of stenosis. Further, they are much more easily demonstrable in a radiograph, while the anterior small ulcerations evidenced

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

the more typical syndrome, seldom caused much deformity or stenosis, usually bled more easily, continuously and freely, and were seldom diagnosed by X-ray.

There have been many accessory aids to the diagnosis of duodenal ulcer heralded from time to time. Of these the X-ray is undoubtedly the most important and when plates are obtained showing constant and unchanging deformity of the pyloric cap, one is safe in assuming that there must be present some factor causing a disturbance of the muscular functions of the parts, and this, if adhesions can be excluded, is in most probability an ulcer. But the writer feels that the greater one's experience is with X-ray examinations the less he believes the examiner will be apt to base too positive a diagnosis on the findings thus procured, other than in a corroborative sense.

Gastric analysis shows us that there exists in a great majority of cases a definite hyperacidity. This, however, is found in many other intra-abdominal conditions other than duodenal ulcer, which likewise reflexly stimulate the gastric secretion. Its presence is very suggestive, however, particularly if an analysis is also made during an interval free from distress, at which time we have repeatedly noted that the acidity of the stomach is usually normal and frequently sub-normal.

Blood in the stools is another corroborative finding, but the factor of error, which is particularly unavoidable in ambulatory cases, is so great as to practically remove it from a position of any real diagnostic importance.

Corroborative evidence may also be obtained from the use of the string impregnation test, both as to the presence and cure of an ulceration. When one sees the various and bizarre forms and positions of these stomachs as portrayed by the radiographer, the more exact location of an ulcer by the aid of such a definite localizing procedure is always important.

Thus, one would think that, taking everything into consideration, the diagnosis of a duodenal ulceration should prove a relatively easy task, and it is in many cases. But the really important factor has as yet not been mentioned, viz.: What has caused the ulceration?

In referring to the ulceration may we not at the same time classify it by prefixing a surname indicative of its etiologic factor, suggestive likewise of an accessory symptomatology and the method to be employed to relieve the condition, whether treated medically or surgically? Thus the terminology: jejunal duodenal ulcer, ileocecal, appendical, colonic, membranous pericolic, static, or ptotic duodenal ulcer might prove advantageous as well as instructive.

Many people undoubtedly carry about potential factors of an impending abdominal catastrophe without its ever being recognized, the symptoms being so mild that they have long since been disregarded by both themselves and their physi-

cians. But in many of these cases we must feel that it is only the limitations of our diagnostic acumen, or possibly the defects in the proper examination which allows them to slip by unrecognized, unsuspected and improperly treated.

The prognosis in many instances is, of course, a relative question. Yet personal experiences with some fifteen acutely perforated ulcers of the duodenum and observations on a great many more chronically perforated cases certainly leads one to think that the consideration of repairing these conditions, either surgically or medically, is surely one of great importance.

The anterior ulcers are the ones that perforate more frequently. Such perforations are usually of the blown-out character. They are unfortunately the more frequent in occurrence and therefore lead one to make a rather unfavorable prognosis, if such ulcers are allowed to continue their course. The posterior ulcers, on the other hand, seldom perforate into the abdominal cavity; but are prone to inaugurate complications which in the end may prove quite as dangerous as an acute perforation, namely, pancreatitis, common duct obstruction and duodenal stenosis.

The engraftment of carcinoma on the base of a duodenal ulcer is of so relatively rare occurrence that it may be disregarded.

In many instances the prognosis has to be determined by that of the etiologic condition, as in death from a ruptured appendix in whom a duodenal ulcer is found post-mortem.

Many cases enter into a state of chronic invalidism, if untreated, although the local condition remains unchanged. Notwithstanding the fact that the recurrent attacks have become more frequent and increased in their severity, the patient usually experiencing a progressively lessening degree of relief from the measures previously employed with benefit.

Others, and this must represent a large class, suffer but slight discomfort, or none at all.

In our experience cases properly chosen for medical or surgical treatment appear to have remained fairly comfortable. Using them and reports from other clinics of cases similarly treated as criteria, one may be justified in saying that the prognosis in the very great majority of cases is good.

COMPLICATIONS OF DUODENAL ULCER.*

By J. B. HARVIE, M.D.,
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DUODENAL ulcer constitutes an important factor in pathological conditions involving the upper abdomen which physicians and surgeons are called upon to treat.

It is not so many years ago that this region

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was considered more or less an undiscovered territory, but, thanks to the operating room, post mortem findings, and the X-ray, the atmosphere has been clarified, and we are now enabled in most cases to determine the presence of such lesions.

That there are instances, however, in which duodenal ulcer may escape the most vigilant and astute observer is sufficient proof of the difficulties that may be encountered in forming correct conclusions.

A duodenal ulcer may give rise to few symptoms until the final break occurs and we are confronted with perforation or hemorrhage. That a large percentage of those cases result in an explosive way is well borne out by statistics, but that a still larger percentage remain undiscovered, the patient enjoying good health and few suggestive symptoms, is also quite well known. The more closely the lesion is situated to the stomach, the more likely is it to assume some of the prominent symptoms of gastric ulcer and less likely to be overlooked.

Of the complications: Cancer, hemorrhage and perforation will call for the most vigorous and energetic treatment. Obstruction due to contraction will permit of greater deliberation.

Unfortunately malignant disease has usually passed far beyond all likelihood of successful intervention when the diagnosis is made. Its insidiousness in escaping detection in hidden areas from any physical examination will result in many failures of its recognition until too late. It has been my privilege to meet a number of inoperable carcinomas occurring at the pylorus and upper part of the duodenum, apparently having their starting point at the base of an old ulcer, and, while a careful analysis of the symptom-complex might have lead to an early diagnosis, I am free to say that I am not usually fortunate enough to have those cases referred to me at the time when I can be of material benefit to the patient, and I think this statement will apply pretty generally to most intra-abdominal malignant growths. Resection when practicable is usually satisfactory from a surgical standpoint but unsatisfactory clinically, inasmuch as early recurrence is the rule.

Hemorrhage may be the very earliest symptom, and if profuse and lasting may require direct interference. It may occur as any ordinary hematemesis or may appear in the stools, but altogether likely, if profuse, we shall find it traveling in both directions, so that this complication will not aid us positively as to the real seat of the trouble.

Monyihan reports 71 patients, or 38 per cent. of those observed, which gave a history of bleeding at one time or another. Of these: 17 had hematemesis alone, 24 had melina alone, and 30 had both hematemesis and

melina. If the ulcer is easily reached its excision goes without saying, but a simple gastroenterostomy alone will seldom accomplish a cure. Although the duodenal ulcer expresses a preference for the anterior wall and its upper part, the difficulty in locating and dealing safely with certain duodenal ulcers will constitute the most difficult and perplexing problem in surgery.

If the hemorrhage has been excessive, the patient's condition anxious, the ulcer hidden and perhaps of the acute variety, with few or no external manifestations to guide one in its location, the search may possibly be a fruitless one. It may not be amiss to state that most ulcers of the duodenum will bleed more or less and if a very careful daily examination of the stools should be made that this fact would be substantiated.

Haudeck, who had diagnosed an ulcer in the descending part of the duodenum by means of the X-ray, at operation failed to locate it, showing that it is not always palpable exteriorly. This case was followed the day after operation by profuse hematemesis of two liters.

The perforating ulcer always demands prompt intervention. The operating table offers the only hope and should claim the patient at the earliest possible moment. Delay in such conditions is responsible for most of the deaths. Unfortunately those cases are often treated for acute indigestion, and surgical treatment is thought of when the patient has passed beyond the limit of help. This may be due to the fact that many perforations occur in persons who are following actively their ordinary avocations, perhaps consulting their physician for the first time when the accident occurs. This in itself is misleading and will often lead up to fatal delay. The hypodermic syringe is freely resorted to and the patient rendered oblivious to pain. After the period of reaction the individual expresses such a sense of relief that further postponement is the rule, until the abdominal symptoms become so patent that they are unmistakable.

If there is one department of medicine in which a diagnosis is called for more promptly than another it is at the right time to interpret correctly the significance of serious abdominal lesions.

The differential diagnosis between perforation of the duodenal ulcer and perforation of any other hollow viscus will present difficulties surrounding a true interpretation of the seat of the lesion when general peritonitis is established and the abdomen is distended with escaped contents, making any attempt at localization largely speculative. The duodenal ulcer, however, on account of its location and anatomical relations is more apt to be insidious and free from symptoms unusual in form

or intensity preceding perforation than a gastric ulcer, acute appendicitis, or a ruptured gall bladder. Acute pancreatitis and thrombosis of the mesenteric vessels are entitled to consideration.

Another condition, and one which has led up to embarrassment more than once, is basal pleuropneumonia, particularly when associated with tympany. Only a careful physical examination will obviate unnecessary surgery in such cases. Too much attention is paid to the clinical thermometer when a high temperature is recorded and not enough when the temperature is little above normal.

So that we have an array of possibilities in the case, any one of which may well be considered an important factor and the diagnosis may necessarily be cleared up on the operating table.

There seems to be no period in the lifetime of a person when this accident may not occur, but the greatest number of victims possibly belong between the fortieth and fiftieth years. Males suffer more frequently than females.

J. A. Struthers, in the *Edinburgh Medical Journal*, December, 1912, reported 27 cases of perforative duodenal ulcer occurring between 14 and 68 years of age, 26 of which were of the male sex, 17 had shown for months or years marked symptoms, in some cases so severe that they carried on their occupations with difficulty; generally, they suffered with flatulency and epigastric pain, seldom vomiting; so-called hunger pain was noted in many of the cases, coming on from an hour and a half to three hours after ingestion of food. The other ten cases in this group possessed no notable symptoms, not even finding it necessary to seek medical advice.

Moynihan reports 11 cases, which he operated, at an average age of 29 years, 8 of which had been under treatment for periods varying from one to eighteen months, the remaining 3 had never consulted a medical man.

F. M. Caird, in the *Scottish Medical and Surgical Journal*, September, 1906, reports 3 cases of duodenal ulcer operated 10, 26 and 31 hours, respectively, after perforation. All recovering. In the same issue of the *Journal* he reports 22 perforated gastric ulcers, with 9 deaths.

Dr. H. H. M. Lisle, *Annals of Surgery*, April, 1911: Male, 32 years, with pin-point perforation in the upper posterior part of the duodenum, temporarily sealed by the liver. Perforation closed with purse-string suture, reinforced by tacking a portion of gastrohepatic omentum over it. Recovery without drainage.

Dr. George G. Ross, in the same number of *Annals of Surgery*: Male, 50 years, operated one and one-half hours after the onset of pain. A perforation in the stomach was sutured. The patient seemed in a dying condition and

the abdomen was closed with drainage. No gastroenterostomy. The patient lived one week. The autopsy showed an ulcer, horse-shoe-shaped, one and one-half inch long at the upper part of the duodenum, perforated.

Wilkie, in the *British Medical Journal*, November 9, 1912, reports the following post mortem findings: A male, 26, was operated for appendicitis. At autopsy a typical punched-out chronic ulcer was found on the anterior wall of the duodenum, half an inch from the pylorus.

Male, 21 years, operated for general peritonitis and perforative appendicitis. Post mortem revealed chronic duodenal ulcer, size of a three-penny piece, on the posterior wall of the duodenum.

A male, 16 years, operated for general peritonitis, secondary to acute appendicitis. The post mortem revealed a scar on the anterior surface of the duodenum, covered by omentum.

A male advanced in years died from mediastinal lymphosarcoma. Autopsy showed sloughing and spontaneous amputation of the appendix. Two chronic and kissing ulcers were found in the first part of the duodenum.

A male, 62. No operation. Post mortem revealed death, caused by a perforating duodenal ulcer. The appendix showed signs of chronic inflammation, the distal end club-shaped and buried in old adhesions.

In this same article he publishes seven other autopsies, in which a duodenal ulcer was associated either with appendicular inflammation or inflammatory trouble in the colon.

These reports by Wilkie substantiate in a striking way the prevalence of the co-existence of duodenal ulcer and inflammation about the cæcum.

My own experience with cholecystitis, gastric and duodenal ulcers, tends to confirm the opinion that this association is far from uncommon.

The following are reports from my own cases:

M. F. Machinist. Age 22. Well-built young man. Good habits. Never consulted a medical man prior to present illness. Was taken ill at midnight, with pain in the upper abdomen, and sent for a physician, who gave morphia hypodermically. This treatment was continued for 3½ days, and he entered the Samaritan Hospital May 4, 1911, at 5.35 P. M. The patient's expression was anxious; pulse uncountable, and rectal temperature 100 deg. F. There was marked abdominal distension. The abdomen was absolutely solid from escaped product, and liver dullness gone. The abdominal wall was cocainized with ¼ of 1% solution and a few whiffs of ether given. On opening the peritoneal cavity, considerable free gas and a large quantity of odorless mate-

rial escaped. Very angry general peritonitis, with fibroplastic exudate covering peritoneum generally. Appendix normal. A drain in right loin and glass tube with capillary drain in lower angle of abdominal incision. The patient lived seven hours. No autopsy.

Inasmuch as this patient had always enjoyed perfect health, with no symptoms preceding the acute onset of this illness, I think we may assume that we were dealing with a perforating duodenal ulcer.

CASE 2.—J. F. C. A male. Age 67. Patient of Dr. H. L. Waldo. Was taken ill in the early morning, October 29, 1911, with pain in the upper abdomen, requiring large doses of morphia hypodermically. I saw him the following day, about 28 hours after the first symptoms. He entered the Samaritan Hospital at 11.30 A. M., October 30th. Rectal temperature, 97. Pulse, 140. Expression anxious. Color cyanotic. Abdominal distention very marked, distinct splash—due to free fluid, great tenderness but little pain. Liver dullness absent. Rectal examination showed a distinct fullness in the pelvis. Incision to the right of median line through the sheath of right rectus muscle. Gas and a large quantity of odorless bile-stained fluid escaped on opening peritoneal cavity. There was general peritonitis. A perforating round ulcer about 1 cm. in diameter on the anterior wall of the duodenum, near the pylorus, was disclosed. The duodenum was much thickened and its diameter lessened. Stomach empty and dilated. Ligature of catgut was passed around duodenum above the ulcer, shutting off the pylorus, and posterior gastroenterostomy was done. Loin and abdominal drain. Death occurred 13 hours after the operation.

Although the patient had been a so-called dispeptic for many years, he had nevertheless attended faithfully to business, which required close attention and rather long hours. He was seemingly a well-preserved man, and I had occasion to meet him three days before his fatal illness at a business meeting, when he expressed himself as being unusually well.

CASE 3.—A. P. Male. Age 61. Farmer. Was taken ill about 6 A. M., October 17, 1912, while walking from his house to his barn. There was no previous illness. He had difficulty in returning to his house on account of the very acute pain which practically doubled him up. Dr. Lothridge, Watervliet, saw him within a short time. Found him much collapsed—cyanotic—very rapid pulse, and sub-normal temperature. He complained of great pain in the upper abdomen. Abdominal muscles rigid. The abdomen scaphoid. Thighs flexed firmly on the abdomen. He made an immediate diagnosis of perforating ulcer of the stomach or duodenum, and asked me to see him, which diagnosis I confirmed.

At the time of my visit the patient had reacted considerably and refused operation, but later on he became considerably worse, and entered the Samaritan Hospital at 7 P. M., and was operated two hours later, or 15 hours after the perforation. The abdomen by this time had become well distended—the liver dullness much diminished—pulse rapid and feeble. The patient took the anesthetic badly. The usual incision, through the sheath of the right rectus muscle. The escaped contents represented a large quantity of watery material mixed with food. A round ulcer was disclosed, with clean-cut edges, just below the pylorus, about 1 cm. in diameter, which was excised and mattress sutures placed transversely to the long axis of the bowel. Posterior gastroenterostomy. Glass drain in abdominal incision and rubber drain in right loin. The patient died 23 hours after the operation.

CASE 4.—L. P. Age 23. Teamster. A well-built man. Uses intoxicants to excess. Was seen by a physician at a cheap boarding house, having been ill between two and three days. He entered the general service of the Samaritan Hospital, February 16, 1912, at 8 P. M. Illness began with pain in the upper abdomen—nausea and vomiting—no blood in vomits. Bowels obstinately constipated.

Examination.—The abdomen was enormously distended. Dullness in each flank. Dullness in median line of abdomen, extending to the umbilicus. The liver dullness was gone. Distinct splash in abdomen—due to free fluid. Face flushed and somewhat cyanosed. Expression exceedingly anxious. Temperature, 99.1 degrees F. Pulse irregular, ranging between 130 and 140. Incision to the right of median line, high up. Appendicectomy. Peri-appendicitis. The peritoneum was generally inflamed, with large quantities of pus lying free in the abdominal cavity. Abdominal and loin drainage. No diagnosis at this time. The patient dragged along in an unsatisfactory way, losing strength daily, running a typical septic temperature with occasional rigors. There was moderate drainage. On March the 22d the patient was anesthetized and the original incision considerably enlarged. There was no gastric or duodenal perforation in sight. Considerable pus was seen oozing from an opening in the gastrocolic omentum. This opening was enlarged sufficient to admit the index finger, and in the third part of the duodenum, just in front of the spinal column, an area of induration was distinctly felt. A large quantity of bile-stained pus escaped from the lesser peritoneum. The loin drain was carried over into lesser peritoneal cavity and iodoform gauze packed through the opening in the gastrocolic omentum. The condition of the patient improved rapidly. He left the hos-

pital on May 14, 1912, having made a satisfactory recovery. My assistant, Dr. David Kidd, saw this patient April 22, 1913. He was free from all discomforts, no distress after taking food, well nourished and following his ordinary employment.

CASE 5.—H. I. Female. Age 33. Single. Domestic. Was taken suddenly ill Saturday evening, August 24, 1912, in a store. The ambulance was called and she was taken to the Troy Hospital at 9.40 P. M.

The following notes were made by my interne, Dr. Baker: Patient lying in dorsal decubitus. Fairly well nourished. Complains of great pain in the upper abdomen. Muscular rigidity marked. Respiration rapid and shallow. Marked increase of pain in deep inspiration. Absolutely unable to relax abdominal muscles. The point of greatest tenderness between xiphoid and umbilicus. Liver dullness normal.

This patient had suffered for over one year with flatulency; pain after taking food, occasional nausea, seldom vomiting, never vomited blood; no visible blood in stools. She was laid up with an acute attack, lasting several weeks, about six months prior to present illness. I saw the patient for the first time the 26th and made a diagnosis of gastric ulcer. The patient was prepared for operation. Was operated the following morning. On opening the abdomen a moderate amount of exudate was walled off between the transverse colon, which was adherent to the parietal peritoneum, the stomach and lower border of the liver. Adhesions were carefully separated, escaped product mopped away, and a perforation was discovered in the anterior wall of the duodenum, very close to the pylorus. The ulcer was excised, mattress sutures inserted at right angles to the long axis of the bowel. Posterior gastroenterostomy. The appendix was swollen, contained liquid products. Appendicectomy. An iodoform gauze drain placed in lower angle of the incision.

The patient left the hospital September 21, 1912, 23 days after operation.

CASE 6.—J. C. Male. Age 43. Blacksmith. Always used intoxicants to excess. General health has been excellent except when recovering from effects of too much drink. He worked until noontime December 7, 1912, and on his way home took his usual allowance of beer. About midnight he was seized with a sharp pain midway between the umbilicus and xiphoid cartilage, and was seen by Dr. E. J. Gravatt, who found him in a state of collapse. Temperature subnormal. Very rapid pulse. Constant nausea, with vomiting. No visible blood in the vomits. I saw him at 5 P. M. in consultation. There was marked general peritonitis. Abdomen distended. Dullness well

marked in the right flank. Liver dullness gone.

He entered the Troy Hospital at 8 P. M. Subnormal temperature. Pulse, 100. Very weak. He was operated one hour later. Incision through right rectus sheath. A normal appendix removed. No perforation found in stomach, and no evidence of induration at any point suggesting an ulcer. There was no perforation or induration in the first and second parts of the duodenum so far as could be made out. A large amount of thick slimy material filled the right upper quadrant of the abdomen and right subrenal space. Material was distributed more or less throughout the abdominal cavity and angry, general peritonitis was present. The operation terminated by running rubber drain of large caliber from the right loin into the lesser peritoneum, glass drain in the lower angle of abdominal incision. The diagnosis of a probable duodenal ulcer was made. The patient made an uninterrupted recovery. Was discharged from the hospital January 9, 1913.

THE MEDICAL TREATMENT OF DUODENAL ULCER.*

By CHARLES G. STOCKTON, M.D.,
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THE medical treatment of peptic ulcer, whether the ulcer is located in the stomach or duodenum, consists in providing to the part involved the greatest practicable physiologic rest. The principle underlying medical treatment is identical to that on which surgical treatment is based; in each the attempt is made to spare the diseased area from the incessant irritation excited by the acid, enzyme-bearing chyme and the motor disturbance occasioned by peristalsis, tonic contraction and pyloric spasm. An exception to this statement occurs in the instance of resection of the ulcer-bearing area when the disease is limited to the pyloric region of the stomach. This exception does not apply to the duodenum. Surgeon and physician alike, so far as relates to duodenal ulcer, seek to favor recovery by inducing physiologic rest, so far as that can be made available. The treatment, therefore, is not directed toward curing the ulcer; it is aimed so to control the patient and so to manage his digestive tract that the ulcer may heal spontaneously. More specifically, the indications for treatment are: (a) To require the patient to remain continuously in bed for several weeks, for it is known that by assuming the upright position, bending the trunk, or making movements that involve the action of the abdominal muscles, the relations of the duodenum to other parts are changed and undue tension may

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thereby strain the walls of the ulcer. (b) To manage the patient so that involuntary motion of the pylorus and duodenum may be minimized, that the elements of over-tonicity and spasticity of the parts may be avoided. (c) To lessen the amount of gastric secretion and to decrease the acidity and the enzyme activity of the gastric juice before it passes the pylorus.

How may these indications best be met?

First.—Measures for attaining general rest. To require him to go to bed is not sufficient; the patient must be made comfortable and if possible contented in bed. Therefore the mattress must be soft and elastic, the sheets often freshened, the covering of light weight. The room should be well ventilated, and the bed so placed that the light does not strike in the patient's face. A sponge bath or alcohol rub with massage should be given daily, avoiding manipulation of the abdomen. Thus a prolonged rest in bed may be made tolerable if not enjoyable. Mental calm is in importance almost equal to bodily rest, therefore it is far better that the treatment be followed in an institution, removed from the interests and responsibilities of home.

Second.—Physiologic rest of the duodenum. This is not easily attainable, yet a state of comparative calm in functional activity is possible. This cannot be procured except by taking into consideration the third indication for treatment, viz.: a controlled or decreased gastric secretion. The even, rhythmic, staltic waves of stomach, pylorus and duodenum cannot be obviated if nourishment is taken in the usual manner, although this moderate peristalsis is far less harmful than is spasm or excessive tonus, yet it would be better were peristalsis entirely excluded.

A means of procuring practically this desirable end will be considered presently. As regards the compromise that results in lessened gastroduodenal motility, it can be reached best by confining the patient to an unstimulating fluid or pultaceous diet, and by feeding at intervals of two and a half hours. Milk, milk porridge containing malto-dextrose, rice, gruel, sugar, raw egg yolks, uncooked butter, cream and oil may be given in such proportion that 2,000 to 2,500 calories are taken daily. The heartier forms of food are unfitted for cases of duodenal ulcer. The gastric acidity must be reduced; the colon should be cleared by bowel washes, assisted by magnesia usta or milk of magnesia. Ordinary purgatives are not required; the conventional taking of Carlsbad salts, etc., seems to be undesirable.

An over tonic state of the pylorus and of the lower part of the stomach is usually in response to irritation at the site of the ulcer. When it is possible to relieve this irritation by large doses of bismuth and by controlling gastric acidity it should be done. At times it is best to require a fast for twenty-four hours, only bismuth, antacids and warm water being allowed. Relief

may follow the taking of purified vaseline or olive oil every two or four hours.

At times the tonicity is persistent and may be accompanied by spasm at the pylorus or antrum, as shown by palpable tumor or resistance, and by pain or vomiting. This spasticity is owing to vagotonic irritability and hence immediate relief may follow the hypodermic injection of atropine, at first, in full doses. Following this the patient should fast for a day or two and rectal alimentation should be practiced.

In research work, pharmacologists have discovered that the subcutaneous injection of adrenaline leads at once to the disappearance of the normal gastric tonus. This agent seemed to leave the pylorus unaffected.

It occurred to me to try adrenaline both in painful gastric spasm and pyloric spasm. So far I have used this agent in six cases. In four out of these six cases the result was most favorable. In one case there was marked pyloric spasm, making a palpable tumor, accompanied with severe pain and retching. The tumor disappeared and the symptoms ceased after the injection of 1 c.c. of 1/1000 adrenaline solution. Doubtless in this case gastric spasm was also in evidence; perhaps by stimulation of the sympathetics, thus relaxing the overtonic state of the stomach, the pylorus was indirectly relieved. At any rate, I am convinced that in adrenaline we have a fresh means of relieving a proportion of cases of gastric and pyloric spasm.

A time-honored method of relieving the distress of gastric and duodenal ulcer is the application of hot poultices or hot fomentations. The benefit following these measures depends upon the antispasmodic effect of heat and moisture. Properly and systematically carried out, the method meets with at least partial success in a great majority of cases. It constitutes an important feature of the von Leube method of treatment of ulcer. In a proportion of cases the relief of symptoms follows the local application of ice. Here the sedative effect of cold appears to overcome spasm and at the same time it decreases the tendency to hemorrhage. Topical use of either heat or cold is advisable in the thorough-going treatment of most cases of peptic ulcer.

Third.—The control of gastric secretion and the decrease of gastric hyperacidity. To succeed in accomplishing this, perhaps it is necessary to obtain relief from an over-spastic state of the pylorus and lower part of the stomach; in other words, resorting to some of the methods just described. Granting that abnormal spasticity has been overcome, very much can be accomplished by the use of antacids to favor normal relaxation of the pylorus. Antacid preparations operate by lessening stimulation to exposed nerve endings at the ulcer, and they also act to lessen the stimulus to the stomach as a whole. It is understood that the pain of duodenal ulcer depends largely upon spasm, and it is doubtful to

what extent pain is produced merely from chemic irritation of nerve filaments. Experimentation and clinical observation alike indicate that the chemic effect would produce little pain but for the over-tonicity and spasticity to which its presence leads. Antacid drugs assist in relieving spasm and their administration is usually followed by at least temporary disappearance or mitigation of the pain and vomiting. The most successful of these antacids are light calcined magnesia, bismuth subcarbonate and lime water. The bismuth seems to have a sedative effect in addition to its slight antacid properties. This sedative effect probably arises from the protective action of the bismuth as it spreads over the irritated surface of the stomach and duodenum. Occasionally this bismuth, as shown by X-ray shadows, accumulates at the site of the ulcer where it doubtless exercises a local protective effect. Vaseline and olive oil afford relief in cases of over-acidity, both by diminishing the secretion and by protecting the surfaces. The well-known cessation of pain which follows the taking of food in certain types of ulcer is apparently produced primarily by the brief relaxation of the stomach which follows deglutition and the passage of aliment through the cardia of the stomach and, in part, from the combination of suitable liquid food with the gastric juice. The gastric secretion is not only diluted by this means, but also a proportion of free acid is combined with proteids, thus rendering the gastric contents less irritating. Warm milk, or warm gruel, in my experience, is most efficacious in the relief of symptoms. The animal broths and extracts, inasmuch as they lead to an increase in gastric secretion, should be excluded from the diet. Their ingestion is followed by a momentary cessation of pain which soon recurs, often with increased violence.

The vago-depressing action of atropine is shown not only in relieving pyloric spasm, but in lessening gastric secretion. It is unfortunate that the other effects of atropine, that is mydriasis, cerebral confusion and abolition of the salivary secretion cannot be excluded, for otherwise atropine would be resorted to for its effect upon the stomach and duodenum much more extensively than is now deemed advisable.

Fourth.—I have intimated that there is another method which acts to diminish the gastric secretion and to overcome pyloric spasm, and that is the method of duodenal alimentation which we owe to Dr. Max Einhorn. It is true that in some cases of marked pyloric spasm the duodenal tube is not made to pass without some difficulty and delay. It is also true that unless watchfulness to see that the rules for practicing the method are carried out minutely, there is likely to ensue intolerance and sometimes even superficial inflammatory reaction on the part of the duodenum. Nevertheless, my own moderate experience and my observation of Dr. Einhorn's patients convince me that in duodenal

alimentation we have a new and important means for the treatment both of gastric and duodenal ulcer. I believe that the time is near when this plan of treatment will supersede operative intervention in a proportion of cases where the need of operation is now felt to be imperative.

Fifth.—For the relief of hemorrhage in duodenal ulcer, there should be the most complete bodily and mental rest procurable, the practice of fasting for two or three days, and the slow, most deliberate introduction of normal saline solution per rectum, for the relief of thirst. Not more than 30 c.c. of water should be introduced during an hour. Enteroclysis, as commonly practiced, is likely to re-excite the hemorrhage. Some benefit apparently follows the introduction of calcium lactate dissolved in the water, to be introduced per rectum for the relief of thirst. Of all measures which I have employed and seen employed for the relief of hemorrhage in peptic ulcer, the most efficient is the subcutaneous injection of the preparation of serum devised by Clowes and Busch and now offered on the market under the name of "Coagulo-se," a preparation which is the subject of a contribution to this meeting by Dr. Clowes.

Discussion.

DR. W. L. WALLACE, of Syracuse, N. Y., said: "Shall we pass a stomach tube in case of probable or possible perforation of duodenal or stomach ulcer? I have seen a tube used under these conditions for diagnosis and for treatment.

"Would the stomach tube help make the diagnosis? At first thought one might expect that the tube would find that a stomach with an extra hole in it had emptied itself into the peritoneal cavity. Such, however, is not the case. The perforation of stomach and duodenum comes usually when they are distended with food and drink. And if the stomach happens to be comparatively empty, nevertheless there will be enough escaping contents to soil the peritoneum and set up sufficient peritonitis to produce a reversed peristalsis into the stomach. At operation we therefore find the stomach full of food, or bile, or brown bowel fluid. The stomach tube will not clear up the diagnosis by finding a perforated stomach empty.

"The stomach, then, being usually found full, would the stomach tube diminish the danger of escape of contents through the perforation?

"The man with a perforated ulcer does all in his power to prevent soiling the peritoneum. By his posture he gets the hole at the top, and he plugs it with mucous or omentum. At reasonably early operation the stomach may be found to contain one or two quarts, and yet comparatively little may be found outside in the peritoneal cavity.

"The stomach tube would be ideal to siphon off the contents, if it could be passed without straining, and if no washing fluid were used; but the combination of straining and irrigating

breaks out the plug and floods the abdomen with infection.

"I have several times seen the effort made to wash out the stomach in cases of perforation of duodenal or stomach ulcer. Very little of the water was returned and at operation the washings were found in the peritoneal cavity.

"I therefore arrive at the conclusion that the stomach tube will not help either in diagnosis or in treatment of perforation. If there must be delay before operation, give a large hypodermic of morphine to hold the stomach still and prevent the ejection of contents, as seen at operation, from the straining efforts to vomit. In the pain and shock following a probable perforation, the stomach tube should not be used. Operate at once and pass the stomach tube after stopping the leak."

DR. ROBT. T. MORRIS, of New York City, said: "At the present time we are not to look upon duodenal ulceration as a diagnostic entity so much as we are to look upon it as merely one expression of a general condition—one flower upon a bush of flowers. In cases of duodenal ulceration the patient as a whole is to be considered in the problem.

"These cases seem to belong largely to the neurasthenic group of patients, or at least to those with defective ductless glands, and presenting various stigmata indicating that physical decline which belongs to all of the civilized races at this stage in our cultural period.

"It seems to be a tenable hypothesis that ulcer of the duodenum, like other ulcers so common near the junction of the embryonic foregut and midgut, is dependent upon small localized anemic areas (normally supplied with blood from the terminal arteries). No matter whether toxins cause spasm of the blood vessels of the terminal branches, or whether we have thrombosis of toxic origin, there must result small anemic areas which have lost their ability to meet inimical bacteria, which prey upon anemic tissues. Small anemic areas, having lost the protection given by the circulatory apparatus, are exposed also to digestive processes as well as to saprophytic attack. There is little doubt but toxins are excreted freely in the vicinity of the duodenum. Further than that, unmetabolized toxins are poured into this region with the bile in large quantity. Such toxins having caused disturbance of the terminal arteries, and anemic areas having lost protection, followed by saprophytic or digestive processes, there is a disturbance of hormone secretion, so that the entire secreting glandular area of the stomach and bowel may be given wrong messages by morbid hormones.

"Our treatment of these cases as a whole, it seems to me, is primarily medical, and deals with methods for lessening the proportion of inimical bowel bacteria and increasing the patient's ability to oxidize his toxins in a general way.

"Concerning the operative work, I have only one point to make, but it seems to be an important one. In cases of acute perforation of ulcer in the vicinity of the duodenum, where the patient is in shock or in collapse, we are to avoid adding any of the shocking ideal operations. Instead of that, we are to do expediency work which will more quickly turn the patient over to his own protective factors. In other words, give the patient Home Rule.

"We have been too much inclined to follow ideal operative procedures, but in three cases recently I have followed an expediency plan of quickly opening down to the point of perforation, without stopping to wipe out escaped stomach or bowel contents that are free in the peritoneal cavity, and have simply carried one large drainage tube directly down to or through the perforation, and have placed alongside—but not entering the bowel opening—another drainage tube which is split throughout its entire length, carrying loosely a wick of absorbent gauze. The first drainage tube allows stomach or bowel contents to escape freely, and the second drainage tube, by its capillarity, gives direction to the foreign material in the peritoneal cavity, which follows the line of least resistance to the surface. In addition to this we may employ, if we wish, the Ochsner starvation method of treatment.

"In the three cases in which I employed this expediency method for patients who were in shock or collapse, all of the patients recovered. It was my intention to do a secondary operation later, but two of the patients are so well that they would not think of having any operative work done. In the third case I may have to do a gastroenterostomy later, because of adhesion interference with motility of the pylorus and duodenum, although the patient is now traveling and in fairly good health. The next three patients treated by this method may all die, but the fact that three have recovered under 'treatment of neglect' which completed the operative work in a few minutes, adding little or no shock, is significant."

This sort of treatment is in accordance with the principles of the fourth or physiologic era of surgery, as opposed to the method of the third or pathologic era in which conscientious detail work killed the patient.

DR. CHARLES L. GIBSON, of New York City, said: "The most important feature of acute perforations of duodenal ulcer is the question of diagnosis in order that treatment may be instituted at once. For many practitioners, confusion exists because they are carrying in their minds the picture of a terminal lesion with far advanced peritonitis. We should not ask for too many symptoms at the outset; what we have is perfectly clear if a proper interpretation is given. If a patient has very sudden, sharp, agonizing pain in the epigastrium, feels faint or actually has collapse, and he is found an hour

or two later with a boardlike abdomen, retracted particularly in the epigastrium, and exquisitely sensitive to the touch, that is all that is necessary. Further evidences are a luxury, not a necessity.

"The patient may or may not vomit with the outset of the attack; vomiting of blood is very exceptional. In a few cases a transitory pain coming in the first hour is noted in either supra clavicular fossa.

"Several pitfalls exist to trap the unwary. One must remember the insidious character of duodenal ulcer, and in my experience it is the *exception* that the cases of acute perforation give a definite history of previous gastric disturbance.

"A sign that I have never seen in some fifteen perforations is the obliteration of the liver dullness. For it to be present, a very large amount of air must accumulate, and it would represent a terminal symptom. And yet this misleading sign sounds so attractive that many practitioners cannot convince themselves that a perforation exists in the absence of this sign. If the unfortunate victim of a perforation happens to be a painter or typesetter, his hard, retracted abdomen is always ascribed to lead colic.

"With the establishment of a spreading or generalized peritonitis (that is, when too late to help the patient), the picture changes and we have the general distension and vomiting that follows. Without a clear history of the onset it may be difficult before operation to distinguish the condition from a bad appendicitis, especially as the gravitation of the extravasation along the right 'gutter' causes an accentuation of the pain over the region of the appendix. If the surgeon, however, is on the lookout for a perforation, he will realize so soon as the peritoneum is entered what the condition is and at once make an incision in the upper abdomen.

"Infolding of the ulcer has always been efficient in my hands, and the apparent narrowing has never led me to do a primary gastroenterostomy, an operation that I believe should be reserved only for very unusual conditions. Recently I had to invert two contiguous perforations of the duodenum, seemingly producing marked stenosis, but the patient has remained well ever since February and indeed was eating 'hospital diet' before his discharge two weeks after operation.

"Gastroenterostomy is not necessarily a cure-all for every chronic duodenal ulcer, and I am inclined to think that in the future we shall resort to more direct methods, such as obliteration or exclusion of the pylorus."

DR. JAMES T. PILCHER, of Brooklyn, in closing the discussion, said that although Dr. Murphy disparages the use of hypodermics of morphine in cases of acute duodenal perforation, still the fact remains that this procedure will be persisted in by the general practitioner, in which case it may be used in reality as a point

in differential diagnosis, as there is no other known intraabdominal condition which is less relieved by morphine than duodenal perforation.

The speaker fully agreed with the remarks of Dr. Gibson relative to the majority of practitioners requiring too many signs and symptoms upon which to make a diagnosis and believes that the excruciating pain which is invariably present and the extreme board-like rigidity of the upper right rectus are of sufficient value to warrant an immediate exploration. The reason why a greater number of recoveries have been noted to occur when operative interference has been instituted early is because upper abdominal irritation, such as occurs in cases of perforation, immediately paralyzes the peristalsis of the stomach and intestine and this condition remains for, in all probability, between 12 and 18 hours. The fluid, therefore, escaping through the perforation remains localized in the beginning and early is practically sterile, due to the excess of hydrochloric acid which is usually present in these cases and which in itself is a very effective germicide.

Dr. Pilcher feels that in the next few years the condition of chronic duodenal ulcer will be treated similarly to the present-day treatment of chronic appendicitis and that operation will be advised and accepted more generally during the free interval, as in cases of chronic appendicitis, and that the general practitioner will impress his patients with the necessity of having to remedy a potential factor of danger quite if not more important than that present in cases of appendicitis.

Dr. Einhorn's remarks with reference to hunger pain in conditions other than duodenal ulcer Dr. Pilcher wished to agree with, and stated that in many instances gall bladders had given a symptomatology identical with that portrayed by chronic duodenal ulcer, and believe that, if the other factors of the case be taken into consideration, that one after a careful examination should be able to so correlate his findings that the diagnosis may be in all probability correctly made. Unfortunately the speaker was unable to go into the differential diagnoses owing to the limitation of the time for presentation of his subject.

STIGMATA OF DECADENCE IN GYNECOLOGY.*

By ROBERT T. MORRIS, M.D.,
NEW YORK CITY.

IN considering the matter of sterility in women it is necessary to look far beyond the pelvis and to make note of influences belonging to the stage of decadence which we are now approaching in this cultural period.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

The oak tree is not allowed by nature to grow beyond a certain height, and the human species is not allowed by nature to go beyond certain limits in development. This belongs to nature's plan, and while we may not be able to read the meaning, we may at least observe the fact.

The stigmata of decadence which come under the observation of the gynecologist may be classified under two chief heads: primary anatomic defects, belonging to hereditary entailment; and secondary anatomic defects symptomatic of reflex disturbance from peripheral irritations, and also from lack of control, hereditary or acquired, of structures which are under the guidance of the sympathetic nervous system.

The first group I will not bring forward for discussion on this occasion. It includes such definite anatomic defects as hermaphroditism, double uterus, fibro-nodosis of the oviducts, and ovaries containing few or no ova. In these cases we often find the glans clitoridis buried among adhesions, possibly signifying that nature, in the course of development of the species, is trying to dispose of the clitoris by evolution, although it is more probably an atavistic sign. The endometrium in these cases may appear to be well enough developed, so far as microscopic evidence goes, but it does not resist infection by the colon bacillus and other bacteria which prey upon the protoplasm of the cells of the endometrium, introducing one cause for sterility. In these latter cases also, we find "one child sterility," where the uterus carries one child to term but the generative apparatus is unduly damaged at parturition and there is a tendency for no more children to be born. The endometrium in these cases sometimes fails to develop the impregnated ovum.

The second group of cases is the one to which I wish to draw attention today. The central nervous system irritated by various peripheral disturbances gives demonstration in reflex disturbances of the sensory and trophic nerves of the pelvic organs. It seems as though nature, in limiting the development of the species, strikes first at the point of vital importance—the generative organs of women. In these cases (commonly patients of neuro-pathic habit) we often find relaxation of peritoneal supports, loose kidney, sagging colons, and defective ductless glands, which may make demonstration in the pelvis of women in the form of cystic degeneration of the ovary, varicocele of the broad ligament, and various flexions and versions of the uterus. I have seen cases in which the ovaries had been removed for ovarian neuralgia and yet the patient had just as much ovarian neuralgia afterward as before. In some of these cases the symptoms were relieved by correcting eye strain and

balancing badly balanced eye muscles, which had precipitated symptoms referable to distant points, including the pelvis, in susceptible patients. In other cases pelvic symptoms have been relieved by the treatment of mechanotherapists and various hygienic fad-dists.

In the treatment of cases of uterine flexion or version, of ovarian neuralgia, and cystic degeneration of the ovaries, we must look far away from the pelvis when beginning treatment. In the words of Herr Bebel, in the Reichstag, "Wir müssen zum Grunde gehen." I see many cases, in which fibroid degeneration of the appendix seems to irritate the pelvic ganglia in such a way as to lead to disturbances of the sexual apparatus, which has been treated at great length by gynecologists, and patients have been subjected to curetting and the introduction of various stems and pessaries interminably. The conditions calling for treatment in the female pelvis commonly belong to the stigmata of decadence, even when there are no primary anatomic defects, and the gynecologist must be a whole physician before taking up the details of work in his special field, in relation to these cases.

Discussion.

DR. E. GUSTAV ZINKE, Cincinnati, said that in cases of sterility blame is to be placed upon the man quite as often as upon the woman. If we accept the phraseology I agree, if it is a question of blame. Using the term in moral sense, the man is perhaps more frequently at fault than the woman; but from the physical basis we find that nature, in efforts at limiting development of the species, hits more often at that vital point—the sexual organs of women.

DR. GEORGE W. KOSMAK, New York City, thought that if the unfit are to disappear, people on the lower east side of New York would not have such large families of children. This introduces a question relating to the variety of our species. These people of whom he speaks are mostly Jews. The Jews are better adapted to urban conditions than are the Anglo-Saxons. They resist tuberculosis far better during the early years, and, in fact, most of the diseases which carry off the children of other races more rapidly. It would appear to be evidence that the instinctive and acquired habits of our species toward urban life is one of those habits which have led to the extinction of other races, and of other species of animals and of plants, at various times in the past.

DR. MORRIS, in closing the discussion, said: A speaker referred to cases in which something seemed to be wrong with the metabolism of the patient. Sometimes the thyroid gland is defective, and patients are benefited by the use of thyroid extract. He is quite right about

this, but the subject is such a large one that the use of thyroid extract cannot be given rationally, although in a certain proportion of cases it would no doubt make up for a defect of the adrenal group of ductless glands. We are just upon the verge of the study of medicine. During all of the past centuries we have not accomplished as much as has been accomplished in the past twenty-five years, and our new vistas indicate that we have barely entered the subject of the study of medicine.

POSSIBLE ERRORS IN THE DIAGNOSIS OF ABDOMINAL CANCER—A PLEA FOR EXPLORATORY LAPAROTOMY—ILLUSTRATIVE CASES.*

By WM. SEAMAN BAINBRIDGE, Sc.D., M.D.,
NEW YORK.

NOT so many years have elapsed since the abdominal cavity was a veritable *terra incognita*. In many respects, and to some physicians and surgeons, it is still a world of mystery. It has furnished a convenient hiding place for many of the budgets of diagnostic error which have made so large a part of the history of medicine and surgery. And yet, within its hidden recesses have been performed some of the most brilliant and daring feats of surgery.

With the general progress in medicine and surgery which has marked the last quarter-century, modern methods of diagnosis, chemical, bacteriological, physical, and electrical, have brought us into more intimate acquaintance with the abdominal cavity and the diseases to which its contents are subject, enabling us, with a fair degree of accuracy, to predict what will be revealed by operation. In many cases, however, it is impossible, by any external diagnostic methods, to ascertain the exact conditions to be dealt with, and consequently we are unable to apply effectual remedial agencies. In such cases exploratory laparotomy comes into requisition.

The purpose of this brief paper is to emphasize, not by statistics, but by illustrative cases, the importance of exploratory laparotomy, not as a last resort, but as an early means of making an absolutely correct diagnosis, not only as to the presence and extent, but as to the *site* of cancer. The most telling argument in favor of opening the abdomen and seeing and feeling the actual state of affairs, are cases in which patients have been allowed to go untreated, or to be incorrectly treated, until it is too late for curative surgical intervention, and cases in which, through inexperience, perhaps, the surgeon is unable to make the

correct diagnosis even when the abdomen is opened. More frequent resort to exploratory laparotomy, and the development of skill in differential diagnosis when this is done, would be the means of saving many lives, and of prolonging the span of many more, where otherwise mistakes in diagnosis must inevitably lead to disastrous results, as some of the appended histories show.

The following cases, the number of which might be multiplied many times, from the experience of the abdominal surgeon, are selected to illustrate the six most common sources of error in the diagnosis of abdominal cancer.

TYPE I. *Cases Diagnosed as Cancer, with no Cancer Present.*—This is not an uncommon class of cases, for the reason that there are so many conditions which, without exploratory laparotomy, may be so easily mistaken for cancer of some portion of the abdominal contents. The real condition may be easily amenable to surgical intervention and cure, yet the patient may be considered incurable and operation of too little avail to warrant the supposed contingent risks.

The following are the conditions which are most commonly mistaken for abdominal cancer:

1. Appendicitis with abscess formation (Case 1, Type I).
2. Tuberculosis of kidney, liver, spleen, etc. (Case 2, Type I).
3. "Stomach trouble"—healed ulcer, with pyloric stenosis (Case 3, Type I).
4. Stone in kidney, with cachexia, etc. (Case 4, Type I).
5. Gallstones.
6. *Apparent Tumors of Stomach.* (Kemp.)

Conditions mistaken for:

7. Prolapse of left lobe of liver.
8. Pulsating aorta.
9. Thickening of abdominal muscles (recti).

Gastroptosis is usually associated with these conditions consequently there is generally a long history of *emaciation*.

10. Simple adhesions of the stomach, generally following gall-bladder disease, gastric ulcer, or localized peritonitis.

11. *Syphilis*, according to Kemp, may present symptoms which simulate carcinoma of the stomach, unless very careful examination is made. He cites three cases. (Case 5, Type I, illustrates this point.)

Kemp's cases: (1) Sclerosis of stomach; (2) Cirrhosis of liver; (3) Stenosis of pylorus, due to gummatous tumor, stimulating malignancy.

12. Aneurysm of celiac axis simulating carcinoma of pylorus.

13. Chronic gastritis.

14. Nervous gastralgia.

The following cases illustrate this class of mistakes:

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

TYPE I.

CASE 1.—M. E. F., female, widow, aged 56, ten children.

Previous History.—Two years previous to consulting me, October 21, 1912, was operated upon for right inguinal hernia. A large sinus formed in the hernia wound. Had been losing strength and flesh for a year when first seen. Considerable apparent cachexia. Large abdominal tumor, which had increased in size, occupying the center of the abdomen, seemingly connected with the stomach and intestine. This had been diagnosed by several as irremovable cancer and the patient told that she was incurable. Sought relief by some form of serum treatment, going for this purpose to several dispensaries and hospitals, from which she was sent away with no hope.

Physical Examination.—Careful physical examination raised a grave doubt in my mind as to the presence of cancer. Exploratory laparotomy advised.

Operation, New York Skin and Cancer Hospital, November 16, 1912. A mass the size of a child's head was found in the lower portion of the abdomen. It was made up of great omentum enveloping a large abscess, in the center of which was the appendix. The appendix was removed, adhesions broken up, and abscess drained. There was no evidence of cancer—merely subacute appendicitis, with abscess in the omentum. The sinus in the right side, which led down to an unabsorbed stitch, was curetted.

Subsequent History.—Uneventful recovery. The cachexia, which was due to low-grade sepsis, not cancer, disappeared. April 1, 1913, perfectly well and strong.

TYPE I.

CASE 2.—Mrs. G. A. A., aged 50. One child. Referred by Dr. Cora M. Ballard, of Brooklyn, February 15, 1909.

Previous History.—Pain in left side of long duration, with gradually growing tumor in same region. Loss of strength and flesh, with chills. Marked cachexia. Urine negative. Consulted a number of physicians and surgeons, some of whom made the diagnosis of irremovable cancer, involving kidney, spleen and liver. Dr. Ballard was called and doubted the utter hopelessness of the condition, and the writer saw the patient as a last effort for relief, with no thought of cure.

Physical Examination.—Mass in left upper quadrant of abdomen, size of liver.

Diagnosis.—Abscess of left kidney.

Operation, New York Medical College and Hospital for Women, February 22, 1909. Uretero-nephrectomy for pyelo-nephrolithiasis, with perinephric and peri-ureteral abscesses. Evacuation of about a quart of pus.

Pathological Report, Dr. Louis Rene Kauf-

man.—“Acute pyonephritis. Abscess of pelvis of kidney, due probably to the bacillus coli communis, with multiple calculi of urates and uric acid.

“Miliary abscesses are present in both medulla and cortex among remnants of kidney tissue, with advanced necrosis and hemorrhage; very little kidney substance is left and none is normal in sections examined.”

Subsequent History, Uneventful recovery. March 30, 1910, a sinus formed in the scar, which was curetted. It healed, but later formed again. In November, 1911, a new sinus started, whereupon the patient was given an autogenous colon bacillus vaccine. Perfectly well ever since.

TYPE I.

CASE 3.—W. H. B., male, aged 46. Referred by Dr. C. R. Woods, of Hamden, N. Y., February 12, 1909.

Previous History.—“Stomach trouble” for six years, growing steadily worse. For two years vomited “by spells.” Coffee-ground material for the past year. Loss of flesh and strength.

X-ray Examination, by Dr. Lewis Gregory Cole: “Hour-glass contraction of stomach, with dilatation of the upper segment of the hook, just above the constriction on the lesser curvature. . . . Whether this is from an old ulcer or a new growth I do not feel justified in stating.”

Diagnosis.—Chronic indurated ulcer, with probable malignant change. Impossible to determine the exact nature by other means than exploratory laparotomy. All other usual diagnostic methods employed.

Operation, New York Polyclinic Hospital, April 5, 1909. Large mass found at pyloric end of stomach, causing considerable pyloric stenosis. The diseased area was so large, and the glands so enlarged that if the condition were malignant it seemed hardly warranted to remove the mass and the diseased glands. However, believing it to be benign, it was decided to resort to posterior gastro-enterostomy.

Subsequent History.—Uneventful recovery. Marked gain in flesh and strength. Pains slowly disappeared. Perfectly well and strong April 1, 1913.

TYPE I.

CASE 4.—L. C., male, railway engineer, aged 69 years. First seen at one of the suburban hospitals, May 7, 1909.

Previous History.—Had had stone in the bladder twenty-five years before. For many months had been slowly losing flesh and strength, with pain in the abdomen, and the appearance of a slowly growing tumor, which was diagnosed as cancer of the stomach, involving the left kidney and other abdominal

organs. Pronounced inoperable, and patient sent to hospital, January 8, 1909, for palliative treatment.

Physical Examination.—May 2, 1909. Markedly cachectic, very weak and emaciated. Made the diagnosis of stone in the kidney, with abscess, but no malignancy. Advised exploratory operation.

Operation, May 7, 1909. Diagnosis verified. Large stone found, with abscess formation within and around the left kidney, but absolutely no cancer. Stone removed and abscess drained.

Subsequent History.—On account of the patient's weakened condition, despite saline infusion and all other available measures, he failed to rally from the operation, dying during the same day.

NOTE.—The cachexia in this case, which was mistaken for that of cancer, was evidently of non-malignant origin. An exploratory laparotomy several months earlier would have revealed the true cause of the patient's failing health, and would undoubtedly have saved his life.

TYPE I.

CASE 5.—S. C. S., male, butcher, aged 33. Referred by Dr. W. B. Thompson, of Brooklyn, November 28, 1909.

Previous History.—History of "stomach trouble" and pain at times in the right side. Would vomit for days at a time. Pain very great after eating. Absolutely no specific history obtainable. Patient consulted several physicians, with varying results as to diagnosis. By some the trouble was pronounced ulcer of the stomach, by others locomotor ataxia, hyperchlorhydria, chronic appendicitis, and early malignancy. Received medical treatment but without relief.

Physical Examination.—No evidence of a tumor, but a distinct area of epigastric resistance. There was pain and tenderness upon palpation.

X-ray Examination, by Dr. Lewis Gregory Cole, showed constriction on the greater curvature of the stomach, very close to the pylorus. This constriction, although not very extensive, was persistent in all the plates, and was quite suggestive of carcinoma.

Operation, New York Polyclinic Hospital, January 14, 1910. Laparotomy. Appendix markedly diseased, containing two large stones as large and longer than the phalanx of the index finger. Some adhesions around the appendix and also around the outer side of the gall-bladder. No evidence of cancer of stomach, although wall congested and thickened.

Subsequent History.—Uneventful recovery from operation. Symptoms relieved for a time but soon returned, becoming as severe as before surgical treatment. Symptoms con-

tinuing, early in 1912 a Wassermann test was made, with positive findings. He was given "606," followed by inunctions of mercury, with relief of all symptoms. Well April 1, 1913.

NOTE.—It may be of interest in connection with this case to note that in a series of cases examined by one of the Fellows of the Research Department of the New York Skin and Cancer Hospital,* Wassermann test has been positive in only two out of 212 cases of cancer. In one of these it was weak, in the other strong, and in both specific disease was a possibility. In over 1,400 control cases of syphilis the test has been positive in each instance.

The case under consideration is an excellent illustration, in obscure abdominal cases, of the need of resort to all modern diagnostic measures, including those for syphilis. It is known that syphilis may cause various gastric disorders as well as constriction of the pylorus or other part of the stomach. The resulting symptoms may be easily confounded with those of carcinoma.

That this man had a badly diseased appendix and needed its removal was undoubtedly true, but appendectomy did not cure him. Anti-syphilitic treatment did. It would be interesting to know what would have happened if the appendix had been left.

TYPE II.

Cases of Cancer, not recognized as such, but diagnosed and treated as something else. Just as in the foregoing type the various conditions mentioned might be mistaken for cancer, so in this type, cancer may be mistaken for the various conditions named. Even upon exploratory operation the cancer may be overlooked, because of the presumptive existence of some other condition. Cases of this type call for the most careful observation of the entire field of exploration, in order that no focus of malignancy, however small, may be overlooked.

TYPE II.

CASE 6.—G. D., female, married, aged 45. Admitted to the New York Skin and Cancer Hospital.

Previous History.—History of chronic intestinal stasis, with what seemed to be repeated attacks of appendicitis. Had been ill for many months with pain in right side; diagnosed as chronic appendicitis. Three weeks before admission was operated upon and a mass confined to the head of the cecum and appendix was found. Cut into and drained.

Physical Examination.—Cancerous sinus as the site of the scar from the "appendicitis" operation. This was discharging mixed infection pus. Mass in right iliac fossa.

* Fox, Frederick J., "The Wassermann Reaction in Cancer," *Medical Record*, August 16, 1913.

Operation. December 12, 1912, exploratory laparotomy. The cancerous sinus was found surrounded by large and small intestine, which had become part of the sinus wall. The original growth was easily removable, and there were no glands which could not have been removed with ease. But the extension by contiguity to two feet of small intestine, cecum and ascending colon, made it impossible to thoroughly eradicate the disease.

Subsequent History.—Patient died a few days after operation.

NOTE.—This case emphasizes very strongly not only the importance of careful diagnosis, previous to laparotomy operation, but also the importance of the *careful exploration* of the field involved. It is an excellent illustration of the danger of breaking down the barriers by means of which nature endeavors to protect the rest of the organism from invasion by cancer. When this patient was operated upon for presumptive appendicitis, it is quite probable that the diseased tissue could have been entirely removed, without danger of the auto-infection of the other parts. Three weeks later extension had taken place so rapidly that complete eradication was impossible.

TYPE II.

CASE 7.—D. Le R., female, married, aged 62 years. Admitted to the New York Skin and Cancer Hospital, April 3, 1912.

Previous History.—For a year and a half before admission had had the usual symptoms of chronic constipation, gastric disorder, vomiting, with typical symptoms of "biliousness," and a slowly growing mass in the right iliac region. Later, diarrhea. Diagnosis of gallstones, with fecal retention in the ascending colon. Treated medically. Lost 12 pounds in weight. Diarrhea and cachexia had become quite marked by the time we first saw the patient.

Physical Examination.—Large mass in right iliac fossa, extending upwards almost to the liver.

Operation, exploratory laparotomy, April 26, 1913. Cauliflower-like cancer of caput coli, extending up to the ascending colon, and acting as a valve, flapping against the ileocecal opening. Small intestine secondarily involved. Irremovable.

NOTE.—Exploratory laparotomy at an earlier stage, when the diagnosis of gallstones was first made, would doubtless have rendered possible the thorough eradication of the disease. There was over a year of delay from the time of the appearance of the growth until the possibility of cancer was considered and surgical treatment instituted.

TYPE II.

CASE 8.—A. H., female, widow, aged 48, three children. Admitted to the New York Skin and Cancer Hospital, November 27, 1908.

Previous History.—Seventeen months before admission patient began to suffer from "indigestion"—a constant burning behind the sternum, sometimes relieved by vomiting. Never vomited blood. Diagnosis of "nervous dyspepsia" made, and symptomatic treatment instituted. Vomiting increased in frequency. Great loss of flesh and strength. Upon admission to the hospital, when I first saw the patient, she had been unable to retain any food for many weeks.

Physical Examination.—Mass in pyloric region, size of an orange.

Operation.—December 4, 1908. An irremovable mass, with enlarged glands way up behind the stomach and liver. Pylorus occluded. Retro-colic gastro-jejunostomy performed.

Subsequent History.—Patient returned to the hospital June 11, 1909, complaining of vomiting after eating sweets—the first trouble after the operation. She was kept in bed for a time, on restricted diet. Continued in good health until May, 1911, when, after exposure, she contracted a severe cough, tuberculosis developed, and the patient died, in Bellevue Hospital, August 6, 1911.

NOTE.—This case emphasizes the importance of exploratory laparotomy in obscure abdominal conditions which, to the superficial clinician, appear to be "indigestion," "nervous dyspepsia," etc. An early operation would doubtless have enabled the patient to live out her allotted span. As it was, by the palliative measure employed, she lived 2½ years in fair health and comfort, and died of an entirely different condition.

TYPE III.

Cases of Small Cancer, diagnosed as Cancer, but having far more of something else present, the latter condition or conditions being mistaken for malignancy, or being considered too serious, in conjunction with the cancer, to warrant operative interference. Neglect in such cases allows an early and removable cancer to become advanced and perhaps irremovable, whereas, by exploration, it would be easily determined that the entire condition, including the small cancer, could be corrected by surgical procedure. Cases of this class are not so common as those of the first and second type, but undoubtedly many more would be found if exploratory laparotomy were more commonly and more carefully employed.

TYPE III.

CASE 9.*—J. L., female, married, aged 46 years. Admitted to the New York Skin and Cancer Hospital, April 29, 1907, referred by Dr. Henry McCastline, New York City.

* Reported, with illustrations, in "Irremovable Cancer," *New York Medical Journal*, October 3, 1908, being an abstract of the Fourth Annual Clinical Lecture, delivered at the New York Skin and Cancer Hospital, April 22, 1908.

Previous History.—Headache, pain in the back, dragging sensation on walking or standing, occasional vomiting. Enlargement of abdomen. Gradual loss of flesh and strength. Diagnosed as gallstones, with an ovarian cyst probably undergoing cancerous degeneration.

Physical Examination.—Enormous enlargement of abdomen.

Operation, April 30, 1907. Laparotomy. Removal of right ovarian cyst, which weighed twenty-six and one-half pounds. Left ovary contained small cysts, and was the seat of a tumor the size of a hickory nut, which suggested beginning carcinoma and proved such upon microscopic examination. The left ovary and tube were excised. The appendix, which was bound down by adhesions, was removed. The gall-bladder was found much distended and containing gallstones. The gall-bladder was stitched into a vertical cholecystostomy wound just below the edge of the ninth costal cartilage. Two days later it was opened and fifty gallstones removed. Free drainage was allowed. No cancer found elsewhere than in the left ovary.

Subsequent History.—Uneventful recovery. Perfectly well, April 1, 1913.

NOTE.—Upon the belief that cancerous degeneration of the ovarian cyst, and perhaps of the gall-bladder and ducts, operation was not undertaken by the surgeon first consulted. Exploratory laparotomy, however, revealed the fact that the very small cancer of the other ovary, and the gallstones which were the real cause of the patient's discomfort, were also amenable to surgical treatment. Without exploratory laparotomy these facts could not be ascertained. Without the knowledge of the real condition, gained by such procedure, the patient would have been left to her fate.

TYPE IV.

Cases of Advanced Cancer, diagnosed as such, but made seemingly hopeless by an added condition which, in itself, is not of serious moment so far as prognosis is concerned. Correction of the complications, in this type of cases, is a matter of surgical technic, as is likewise the removal of the cancer.

TYPE IV.

CASE 10.—G. H., married, female, aged 54. Referred by Dr. Henry Hughes, W. Long Branch, N. J., November 10, 1909.

Previous History.—Rectal trouble, with chronic constipation, for three years. In May, 1909, laparotomy was performed by another surgeon, with the purpose of removing a cancer of the lower bowel, but so many adhesions were found that nothing was done, the case being considered one of inoperable cancer, with general visceral extension.

Physical Examination.—Chronic intestinal stasis. Marked cachexia. Great loss of flesh and strength. Lower pelvic colon almost

totally obstructed by advanced cancer of rectum.

Operation, November 22, 1909. With the hope that the first operator had been mistaken in the extent of the disease, and believing that if this were not the case, a colostomy would give relief, exploratory laparotomy was performed. Extensive adhesions found, but they were clearly from an old peritonitis following childbirth years before, and from the operation in May. These were separated. Diseased left ovary and tube found, salpingo-oophorectomy performed. By the combined operation, using the vaginal outlet, 2½ feet of intestine, with meso-rectum and meso-sigmoid, removed. Cut end of rectum was brought into the pelvis. Sphincter, with last two inches of rectum, saved.

Subsequent History.—Uninterrupted recovery. Has at present some abdominal adhesions, necessitating the taking of cathartics, but has perfect control of bowel. Has gained 38 pounds in weight, and is perfectly well, April 1, 1913.

NOTE.—This case emphasizes the importance of differentiating between malignant and non-malignant adhesion, between an inflammatory condition of tubes and ovaries (which pathological examination proved to be the case here, with no malignancy present), and cancer. Valuable time was lost by the failure to recognize these differences, and the patient was nearly sacrificed.

TYPE V.

Cases in which the Error in Diagnosis Concerns the Stage of Extent of the Cancer.—Seemingly inoperable and incurable cases may be operable and curable by resort to special methods, an example of which is the operation of arterial ligation, with "lymphatic block," which I have successfully employed in over fifty cases, twenty-four of which, with the technic of the operation, I have reported.*

TYPE V.

CASE 11.—C. U. S., female, widow, aged 44. Referred by Dr. Eliza M. Mosher, of Brooklyn, November 19, 1910.

Previous History.—Leucorrhœa, sometimes tinged with blood, for several years, especially since laceration of cervix at birth of fourth child. Diagnosis of irremovable cancer of uterus made by two surgeons.

Physical Examination.—Evidence of advanced cancer of uterus, with apparent involvement of broad ligaments and pelvic glands.

Operation, Alston's Private Sanitarium, November 15, 1910. Arterial ligation of pelvic vessels, with "lymphatic block," panhysterectomy, with vaginectomy (Wertheim).

* "Arterial Ligation for Irremovable Cancer of the Pelvic Organs: Technic Adapted and Amplified," *Woman's Medical Journal*, April, 1911.

Subsequent History.—Uneventful recovery. April 1, 1913, strong and perfectly well.

NOTE.—Had the dictum expressed before this society by one of its distinguished members last year, to the effect that when the glands are palpable it is too late for even a Wertheim operation, been followed in this case, the patient would have been left to her fate. As it was, by tying off blood vessels and removing the glands along the ureters, from the obturator foramen to the receptaculum chyli, it became possible to do what seemed impossible before and a complete removal of all disease was effected.

TYPE VI.

Cases of Cancer in which the Error in Diagnosis concerns the type of malignant growth.—One type, of a given stage of development, or of a given extent, may be incurable; another, of a corresponding stage or extent, may be curable. It is fair to assume that such cases are not of very common occurrence, but they are none the less important, and should always be borne in mind.

TYPE VI.

CASE 12.—R. V.,* female, married, aged 29 years. First consulted me May 18, 1907.

Previous History.—Patient had had an exploratory laparotomy in another city, the clinical diagnosis of round-celled sarcoma being made at that time, the growth being pronounced irremovable.

Physical Examination, and the history of the case did not warrant, in my opinion, the diagnosis of irremovable sarcoma, and another exploratory laparotomy was advised.

Operation, June 12, 1907, at the New York Skin and Cancer Hospital. Papillomatous degeneration of the uterus, tubes, and ovaries found, extending to the intestines and well up onto the liver. A detached portion was removed for microscopical examination, the report being "malignant papilloma." Ten days later panhysterectomy was performed, and a large amount of fluid evacuated. A large papillomatous mass in the pelvis was also removed.

Subsequent History.—Since the above operations patient has undergone ten laparotomies, making twelve, by me, in addition to one by the other surgeon, and forty-nine tapplings for the evacuation of sero-sanguinous fluid. Every six months the abdomen is opened, more of the papillomatous material removed, and oxygen introduced by the method which I have described elsewhere.† The disease is much

less extensive than it was six years ago. The fluid still collects in the abdomen, necessitating tapping. The patient remains in the hospital two or three weeks after each laparotomy, and two or three hours after each paracentesis abdominalis. She has no cachexia, her bowels move regularly, her color is good, she weighs forty pounds more than she did six years ago, is able to do her housework, and, except for the discomfort experienced when the abdomen fills up with fluid, feels perfectly well.

NOTE.—This case emphasizes the importance of differentiating the type of malignant neoplasm. Had this patient been the victim of sarcoma or adeno-carcinoma of a corresponding degree of extension when we first saw her, she would have been dead years ago. Had she been left without surgical intervention the malignant papilloma would have proved fatal long ago.

Moynihan, Rodman, Mayo, Kemp, Syms, Paterson, and many others, have called attention to the necessity for early exploratory laparotomy. The statistics of many hospitals are illustrative of the frequency of mistaken diagnosis in abdominal conditions. The proportion of cases of abdominal cancer in which this disease is first recognized on the operating table or at autopsy, is variously estimated, according to the part involved, at from twenty to sixty per cent.

It is not to be inferred that exploratory laparotomy is advocated indiscriminately, without a careful examination by all the diagnostic methods at our command, extending over a reasonable length of time. It is undeniable, however, that test meals, gastroscopic examinations, X-ray exposures, and the various other nonsurgical diagnostic measures, with periods of trial treatment, may be the means, by virtue of the delay entailed, of plunging the patient into the slough of despondency—the irremovable stage of cancer, when only palliative measures can be employed.

We may not all be in accord with reference to the important question of the education of the layman concerning cancer. Let us, then, compensate for this lack of unity, and for the ignorance concerning cancer on the part of the laity which the campaign of education presupposes, by giving our patients the benefit of careful history-taking and thorough examination by all the methods applicable to the individual case. If, after this, the diagnosis is still in doubt, or if, after the institution for a *reasonable time* of such treatment as the case may seem to require, the symptoms still persist, the question of exploratory laparotomy should certainly take precedence over the abandonment of the patient to the hopelessness of "palliative medication."

* (1) "Irremovable Cancer," *New York Medical Journal*, October 3, 1908.

(2) "Oxygen in Medicine and Surgery: A Contribution, with Report of Cases," *New York State Journal of Medicine*, June, 1908.

† *Loc. cit.* (2). Also: "The Intra-Abdominal Administration of Oxygen," *Annals of Surgery*, March, 1909.

CONTRACTION RING DYSTOCIA.*

By PAUL T. HARPER, M.D.,

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IT is the purpose of the writer to consider Bandl's ring in tonic and isolated contraction as a cause of dystocia. The condition is not to be confused with the tonic contraction of the structure occurring in tetanus uteri. The clinical picture of the latter is familiar, its dangers and treatment generally understood, and its occurrence undisputed; but that the structure is ever found in tonic and isolated contraction is both doubted and claimed impossible by certain obstetric authorities. Firmly convinced that such a clinical entity not only exists but that it occurs with relative frequency, the following paragraphs are written in the hope of inspiring increased interest in an important and readily recognized complication of labor.

The literature will not be reviewed. It is not extensive. A careful summary made within three years revealed a record of less than one hundred cases. The scarcity of reported cases may be due to infrequency of the condition; it may be due to lack of routine search for obstruction in cases where the commonly-considered causes have been eliminated.

Tonic and isolated contraction of the ring must be accepted as an entity if its presence can be demonstrated in the absence of tonic contraction of the upper segment, or body, of the uterus. It must be acknowledged an essential cause of obstruction if, upon its removal, labor terminates or can be made to terminate without further incident. In three cases, reports of which are appended, the foregoing conditions have been satisfied.

What may be termed the mechanism of tonic contraction of the ring is well considered in connection with the physiology of this structure. The functioning contraction ring is a phenomenon of normal labor. It becomes most conspicuous at the height of a uterine contraction, when it is an important factor in securing satisfactory retraction of the uterine walls about the irregularly-outlined foetal body, and disappears between the pains. It is essentially a feature of the second, or expulsive, stage of labor.

Let the physiological contraction ring become overactive or irregularly active and it can retard labor. Let its action be continuous and it becomes a definite obstruction. With the ring under the latter circumstances, we are concerned.

The transition from excessive retraction to tetanus uteri in cases of marked pelvic deformity, impacted shoulder presentations and the like is readily appreciated; that from moderate retraction, the commonest causes of which are malposition, moderate disproportion, premature rupture of the membranes and the irritating effects

of internal manipulations and of oxytocic agents, to tonic contraction of the ring (representing a single zone of uterine muscle) is as easily understood. But the appearance of the condition in normal presentations, where no disproportion exists and before or soon after rupture of the membranes is not so readily to be explained upon the basis of undue retraction unless the latter condition be the result of faulty innervation of the uterine musculature or of irregular stimulation of an orderly nerve supply. In this connection, the fact that tonic contraction of the ring is noted in cases where the pains, often from the onset of labor, have been atypical in frequency or severity, or in the amount of suffering occasioned seems significant.

The characteristics of the ring in tonic contraction are as follows: it completely surrounds as a circle the interior of the uterine cavity, or stands out as a transverse or oblique crescentic ledge along one or more of the walls as more or less of the circular fibres are involved; its prominence and the ease with which it can naturally or artificially be overcome depend upon the intensity of contraction of the fibres composing it; as far as the uterus is concerned, its location is between the active upper and passive lower segments; its location along the child's body varies with the part of the latter in relation with the ring at the time of the latter's appearance; and, when once set up, its position, both as far as uterus and child are concerned, remains fixed.

It is obvious that the ring will usually be found encircling the child's neck; rarely it will form in advance of the presenting part. With the structure in its fixed position and persisting, labor becomes obstructed. Ordinarily, under such circumstances, tetanus uteri is expected. Why it is not to be looked for here will be apparent when the mechanism of the later condition is considered. The walls of the upper segment of the uterus in tonic contraction are thickened; those of the lower correspondingly thinned and drawn out; a furrow marks the division between these segments; and more or less of the child's body has been delivered into or beyond the lower segment. These features are the results of retraction and do not begin to appear until the latter condition has become excessive. With the tonically-contracted ring in advance of the presenting part or encircling its lower pole, neither does advance of the child occur nor is retraction of the uterus upward over it possible; therefore, tetany, the result of excessive retraction, does not appear. On the contrary, in the interval between contractions the walls are thin; even when moderately retracted, they are not thick. If, because of higher location of the ring or of unusual strength to the contraction of the longitudinal fibres, more marked retraction were to occur, the possibility of tetanus uteri would be even more remote, for the ring would be forcibly dilated and obliterated

* Read by title at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 29, 1913.

as it was drawn over the child and, as a cause of obstruction, would disappear.

The contractions accompanying the condition are intermittent. In practically all other respects they are atypical. Almost invariably they are unusually "painful." This characteristic is noted not only after obstruction to advance is apparent but also, on occasion, from the onset of labor. The same can be said of the irregularities in the frequency, intensity and the duration of the contractions. The apprehension, rising maternal pulse-rate and reflex nausea and vomiting often noted are to be interpreted more as manifestations of the patient's nervous reaction to the unwelcome delay in advance, of which she is aware, than as definite symptoms of the condition causing the obstruction.

The physical signs vary with the position of the ring. Whether or not the structure can be felt as a tender furrow through the lower abdominal wall depends upon its formation in advance of or behind the presenting part and upon the location of the latter above or below the superior strait. When the obstruction is located along the posterior uterine wall only, abdominal palpation will be negative irrespective of its situation along the genital canal. With the head in the mid- or in the lower pelvis and with the ring encircling the neck, the external findings usually are negative; for the structure is on a level with or below the symphysis, and the upper uterine segment is relaxed between the pains and non tender. Upon vaginal examination, its board-like resistance is quite readily felt when the structure is located in front of the presenting part; when behind it, the examining fingers detect the tonically-contracted ring only as they are carried well upward and beyond the presenting part. To carry out the latter procedure, considerable relaxation of the soft parts, the result either of manual dilation or of anæsthesia, is required. At the height of a contraction, pressure against the presenting part detects no advance; nor is the not-fully-dilated external os distended as the result of it. In low positions of the ring, dilation of the external os will proceed slowly if at all after the obstruction has been well set up.

Tonic and isolated contraction of Bandl's ring is to be suspected in cases of second stage delay when all other causes of obstructed labor can be eliminated, when the uterus is not inert and when pains are in any respect atypical. Under the foregoing conditions, careful external and internal examination rarely fails to reveal the contraction ring as the cause of obstruction.

Labor so obstructed should not be confused with tetanus uteri, where the continuous pain, the thickened and firm upper uterine segment and the presence of one or more other causes of obstruction are characteristic. When the pains are infrequent and not severe, the lack of advance definitely suggests uterine inertia; but in the latter condition, the vaginal findings, as far

as the ring is concerned, are negative. Because treatment of the muscular underaction in inertia differs so radically from that of the overaction in contraction ring obstruction, it is imperative that the two conditions be differentiated. Without careful physical examination, the differential diagnosis is difficult if not impossible.

Greater difficulty arises in cases where the tonically-contracted ring appears late in labor already prolonged because of premature rupture of the membranes, moderate disproportion, the less serious malpresentations and -positions and the like. Only keen judgment and experience can tell in the given case how much importance should be attached to any one of the irregularities mentioned as the real cause of delay in labor; and even the knowledge that they exist is of less value than the definite information that tonic contraction of the ring does not obtain. But the pains of prolonged labor commonly are not atypical and such attempts at operative delivery as traction by the finger in the groin in breech and by forceps upon the head in vertex presentations are usually successful when timely and correctly made. However, should the presenting part fail to advance as the result of conservative operative efforts, an additional or possibly the essential cause of delay must be sought for and the region of the ring explored for evidence of its tonic contraction. If found, attention first must be directed to its relief.

The spasm of the ring is overcome spontaneously as the overactive muscle relaxes with rest, or artificially as the result of dilating force applied to its interior. In that this force may be applied too suddenly and too energetically, lies an essential danger of the condition. Since retraction is not excessive, the possibility of intrauterine asphyxia of the child is not great; it is much less than those of traumatism to the head to which traction may have been applied and of asphyxia from compression of the body and delay in delivery of the after-coming head in breech extraction. The same can be said of the danger of spontaneous rupture of the uterus compared with that arising from untimely and vigorous operative attempts at overcoming the obstruction.

Rest for tonically-contracted muscle can be secured by the use of morphia and chloral and by the administration of anæsthetics. Because of the tendency of all vaginal and intrauterine manipulations to increase the muscular spasm, it is apparent that attempts at artificial dilation of the ring should not be made until the simpler methods have been employed and failed and then only as complete, general muscular relaxation has been secured by the use of deep obstetrical or, possibly, surgical anæsthesia.

Under these conditions, the manual or digital dilatation of the tonically-contracted ring is no more difficult than that of the obliterated but not fully-dilated cervix; the greater ease with which the former structure can be made to relax com-

pensating for the added difficulty in reaching it because of its higher position. Because of the length of labor and the possibility of its artificial termination, narcotics and anæsthetics, in the interests of the child, must be administered with great care.

In view of the danger of recurrence, it is advisable that delivery follow the disappearance of the ring as the cause of obstruction. Because of the usual association of the condition with dystocia from one or more other causes, the termination of labor rarely is spontaneous. The final treatment is that suited to the primary cause of the difficult or prolonged labor. Artificial dilatation of the ring predisposes in no way toward subsequent atony and postpartum hemorrhage.

The employment of hydrostatic dilatation and of gauze packing is not only slow and uncertain but also impossible except in the rare ring-in-front cases. Elective abdominal Cæsarean section has been employed with success. The operation seems especially applicable to cases where the ring has formed in advance of the presenting part, but entails greatly increased risk when the patient has been subjected to previous though careful examination and instrumentation.

The reports of three cases which follow illustrate several features of the etiology and symptomatology of this interesting condition.

CASE A.—Age 35, gravida 1, full term; past history and that of her pregnancy negative; pelvic measurements ample; well above average weight but leading a more active life than might be supposed from her size and comfortable circumstances; presentation determined and foetal heart heard at thirtieth week; position not made out.

Onset of labor insidious; until ninth hour patient slept at intervals.

During that hour, pains increased so in frequency and severity and became so "propulsive" that a competent nurse urged early presence of physician; cervix 1+, obliterated (*i. e.*, external os dilated 1+ fingers' breadth, internal os obliterated).

At seventeenth hour, contractions frequent, markedly "painful" though inefficient; morphia made possible eight hours of comparative comfort; during period membranes ruptured spontaneously.

At twenty-fifth hour, pains again frequent and fairly efficient; moderate nausea and vomiting.

At twenty-ninth hour, cervix 2+, obliterated and readily dilatable; noted that head did not distend external os during a contraction as at earlier examinations; patient discouraged and moderately apprehensive; abdominal examination negative; foetal heart, 140; maternal pulse, 90-100 when lying down; examination under anæsthesia and the possibility of operative delivery suggested; since not thought imperative, consent not given.

Pains soon irregular, with intervals of from ten to forty-five minutes and varying markedly in intensity; morphia given without benefit; abdominal examination negative.

Determined either to terminate labor by forceps if condition proved one of secondary inertia or to ascertain cause of obstruction to progress of labor if such existed; patient was placed in lithotomy, catheterized and ether to the obstetrical degree+ given continuously.

At forty-first hour, following procedures carried out:

(1) Manual dilatation of outlet and vagina; positive diagnosis of R. O. P. made.

(2) Digital dilatation of cervix; structure 2+, obliterated, readily dilatable.

(3) Manual rotation of occiput; plenty of room in vagina to grasp and turn head but R. O. P. at once resumed.

(4) Medium forceps; cephalic application of Tucker-McLane instrument; firm, intermittent traction with pains but with no apparent advance; no bony obstruction to progress absolutely determined and further attempt with forceps not made; exploration of vagina and tonic contraction of the ring about neck and shoulders of child discovered; upper uterine segment perfectly relaxed; anæsthetic pushed to surgical degree without lessening spasm of ring.

(5) Digital dilatation of ring; with little difficulty two fingers forced through ring and cord felt pulsating feebly at 170; doubtful prognosis as to living child given; complete dilatation of ring impossible. Believing gradual dilatation of ring by breech extraction safer for mother than its more forcible dilatation by shoulders (as result of traction by forceps on head), even though chances of already feeble child were rendered less favorable thereby, following procedures were determined upon:

(6) Internal podalic version; by increasing its flexion, head easily pushed up through ring; version readily carried out with aid of slight pressure at fundus.

(7) Breech extraction; most difficult; ring grasped chest and shoulders so firmly that finger could not be slipped by to determine whether or not arms were expended; meconium passed five minutes after delivery of breech; hold on shoulders not overcome and same delivered for ten or twelve minutes; delivery of after-coming head simple.

Child could not be revived. It bore no marks of definite injury. Unfortunately measurements and weight were not taken; the child was well nourished and above average size.

Persistent, gentle massage practiced during third stage with no more than normal bleeding resulting; placenta delivered in twenty minutes after an easy Credé; prophylactic dose of ergot followed by very scant lochia for three days;

puerperium in all other respects negative; cervix and perineum were uninjured.

CASE B.—Age 30, gravida 1, full term; housework; personal and past histories and that of pregnancy negative; slender frame, below average weight and height; pelvic measurements not taken.

"Regular" pains persisted for first twelve hours of labor, then became "severe and practically continuous," but were accompanied by no apparent progress; time of rupture of membranes not known; with purpose of advancing labor, quinine, strychnia and pituitrin (1 c.c. hypodermatically) were administered within three hours but without benefit; nor was any definite effect upon character of pains apparent.

When seen in consultation after twenty-three hours of labor, foregoing history was obtained; physical signs were as follows: presentation breech (frank); position L. S. P. in mid pelvis; foetal heart 130 and loud, heard with greater intensity in lower left than in lower right quadrant; contractions recurring every two or three minutes, lasting one minute and "severe;" cervix fully dilated; firm, tonic contraction of Bandl's ring grasping child's body and extended legs between knees and ankles; uterus retracted, though irregularities of foetal outline readily palpable.

Believing contracted ring the cause of obstruction, following treatment carried out:

(1) Digital dilatation of ring; under chloroform to obstetrical degree+, two fingers soon introduced into upper uterine segment; cord felt pulsating at about 70; sufficient dilatation readily secured to allow extended legs to be flexed and drawn down.

(2) Breech extraction; extended arms were anticipated, found and quickly remedied.

(3) Low forceps; readily applied to after-coming head to prevent possible delay in delivery.

Child manifested moderate asphyxia pallida, which was readily recovered from; it was well nourished and developed and weighed nine pounds; third stage of labor terminated in an easy Credé; haste in delivery resulted in an incomplete laceration of the perineum otherwise avoidable; puerperium was uneventful.

CASE C.—Age 29, gravida 1, full term; history negative; well nourished and developed, large frame; pelvic measurements ample.

Pains for first twelve hours of labor were "satisfactory." Membranes then ruptured spontaneously; cervix was fully dilated and diagnosis of face presentation was made. Pains soon increased in frequency, recurring every two or three minutes, their duration was prolonged and they became propulsive. With moderate variations, like contractions continued for eighteen

hours. At that time, under anæsthesia, an unsuccessful attempt at delivery by forceps was made.

Two hours later patient was seen in consultation when physical findings were as follows: presentation face, position L. M. P. in mid pelvis; cervix fully dilated; foetal heart not heard; upper uterine segment relaxed between contractions; vaginal exploration revealed presence of tonically contracted ring encircling child's neck.

Recognizing structure mentioned as essential obstruction to progress of labor, since treatment of posterior position of chin by version was rendered impossible because of it, following procedures were carried out:

(1) Digital dilatation of ring; under surgical anæsthesia, structure gradually enlarged until occiput could be delivered upward through it.

(2) Internal podalic version; readily accomplished with aid of slight pressure at fundus, cord did not pulsate.

(3) Breech extraction; craniotomy to after-coming head employed as a conservative measure.

Child was well nourished and developed and weighed eight and three-quarters pounds; post-mortem ecchymosis was moderate; third stage of labor and puerperium were uneventful.

The foregoing are manifestly cases of true contraction ring dystocia, for in each of them the ring appeared in tonic contraction in the absence of a like condition of the upper uterine segment; it was the essential obstruction because only by its elimination could labor be made to terminate without further incident. The patient in each case was a primipara of 29 or more years who presented no apparent pelvic deformity. In two of the three there existed additional causes, either of prolonged or obstructed labor; *e. g.*, frank breech and face presentation with the chin posterior. In at least two of the cases the membranes did not rupture until labor had progressed beyond 12 hours. The maternal mortality was nil. Two out of three of the children were lost. The child was saved where delivery was accomplished within 24 hours after the onset of labor; in the other cases labor was terminated at the ends of 44 and 36 hours respectively. Internal podalic version, performed subsequently to digital dilatation of the ring, was readily carried out in each case.

In connection with Case A., the regression of the presenting part noted at an examination made 8 hours after rupture of the membranes is possibly significant of the time of appearance of the obstruction and of its location about the neck—and encroaching upon the shoulders—of the child. The particular location of the ring and the intensity of its contraction without doubt explains the immediate resumption of the R. O. P. after the occiput had been easily rotated anteriorly. Delayed attempt at stretching the ring

possibly explains the inability to dilate it fully. The etiology of the dystocia in this case is obscure.

In Case B, the breech presentation would seem a more logical predisposing or exciting cause of the contraction ring dystocia than the use of pituitrin, for pains were atypical before administration of the drug and subsequently were influenced in no apparent way by it. That the child, part of whose body had been subjected to prolonged pressure by the tonic ring, is not a good risk is apparent from the fact that the fetal heart rate fell rapidly from 130 to 70 under just enough obstetrical anæsthesia to permit of dilatation of the ring sufficient to accomplish a speedy delivery.

Case C is of especial interest in that, with a definite primary cause of obstructed labor (namely the L. M. P.), tonic uterus did not develop though labor was not terminated until quite 24 hours after the probable onset of its second stage. Nothing so effectively could have prevented the progressive retraction of the uterus over the child's body—and the gradual approach of the tetanic state of the upper uterine segment—as the firmly and tonically contracted ring encircling the child's neck soon after the onset of the second stage of labor. The ineffectual attempt at delivery by forceps undoubtedly aggravated rather than occasioned the obstruction that required relief before labor could be terminated.

Conclusions: Tonic and isolated contraction of Bandl's ring is not only a possible but also a not infrequent cause of dystocia.

It is usually associated with and secondary to other causes of prolonged and obstructed labor. The etiology may be obscure.

The dangers to the child are those of intra-uterine asphyxia from continued pressure when the condition is unrecognized or allowed to persist indefinitely, and shock and asphyxia from attempts at operative delivery. The fetal mortality is high. The dangers to the mother are those common to all operative obstetrical procedures. The maternal mortality should be low. The dangers of tetanus uteri are remote.

The only positive physical signs are those obtained as a result of careful vaginal and lower uterine segment exploration.

Contraction ring dystocia is to be suspected in cases of second stage delay where all other causes of dystocia have been eliminated or where those that may persist cannot of themselves explain the obstruction, and search for the ring made at once.

Success in treatment depends upon the early recognition of the tonically contracted ring, upon the early disappearance of the structure, and upon the early application of conservative methods of operative delivery.

REPORT OF A CASE OF NEAR DEATH AFTER INTRAVENOUS INJECTION OF SALVARSAN.

By VICTOR C. PEDERSEN, A.M., M.D.,
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THE following case report is of importance and interest in so far that a patient in imminent danger of death was restored and has been greatly benefited by the administration of the medicine.

M., United States, white, 50 years old, merchant.

Diagnosis.—Acquired syphilis, tertiary stage. Family history negative. In fact, the majority of his relatives lived in good health to advanced years.

Former personal history states that he has never had any serious sickness, either constitutional or infectious. His health was always excellent until he became infected with syphilis and thereafter unusually good, all conditions considered.

He has a marked alcoholic habit, never intoxicated, but always drinking from six to twelve or even more whiskeys a day. This habit, in my opinion, is the crucial point of the case. The man bears no visible signs of alcoholism and would hardly be selected as an alcoholic, as he has very slowly and steadily through lifetime acquired this degree of tolerance.

His sexual history is one of excesses. He acquired syphilis twenty-eight years ago. Was treated by Professor White, of Philadelphia, for a few months with internal measures. After his symptoms disappeared the patient ceased treatment. This has always been his mental attitude, one of more or less indifference to his syphilis, consequently I have never been able to control permanently either the patient or his lesions. He was first seen by me in September, 1905, at which time he presented a gumma of the left tibia, surrounded by an extensive zone of periostitis. He also had tertiary ulcerations of the scalp. White mercurial salve was applied to the scalp and blue to the skin. Intramuscular injections of salicylate of mercury and large doses of the iodide of potash were at once begun. Benefit appeared immediately, but after this had reached a moderate degree the patient broke away from treatment. On several occasions during the past six years this patient's gumma and periostitis have been cured only to relapse after three or four months of neglect by the patient, in the same manner. Upon hearing of salvarsan, the patient suggested treatment therewith.

Serodiagnosis showed a strongly positive reaction. The urinalysis was negative excepting for a slight trace of albumin and a few scattered hyaline casts. This patient is a victim of a mild nephritis with periods of moderate exacerbation. The quantity of albumin ranges from mod-

erate to marked and the casts are various and numerous, sometimes almost absent.

Analysis just prior to the injection of salvarsan was better than the vast majority and about as nearly normal as I have ever seen with this patient.

Examination of the lungs and heart three weeks prior to the injection showed a normal blood pressure and apparently normal heart, good blood vessels and negative lungs.

On the 20th day of March, 1911, the patient, more or less against advice went to business until noon and then was admitted to a sanitarium about three o'clock and the injection was given about four o'clock the same day. For reasons unexplained the patient abstained more or less completely from alcohol.

The intravenous injection was made with the assistance and advice of Dr. W. B. Brouner, was nearly 300 c.c. in quantity and contained 0.6 of a gram of salvarsan and was run into the vein of the arm slowly through ten or twelve minutes of time. The patient was unaffected by the injection except that he asked for a drink of whiskey while in the operating room, which was given. He suffered no other immediate effect. Was returned to his room in good spirits and bodily condition. An examination of the pulse showed the same to be undisturbed except for a slight acceleration up to about 90. He was seen and examined again about 9 P. M. and was found in the following condition:

Good spirits, intensely nervous, which is a normal characteristic, suffering severe pains in the gumma and referred pain in the knee of same extremity. The pain in the knee was rapidly dispelled by the local use of oil of wintergreen. The gumma was dressed anew with blue ointment. It was very much reddened and disturbed. The patient had had no chills, and his pulse was as when last seen, about 90, and no other features of the case were noted. On account of the pain in his shin the patient, against advice, insisted on walking up and down the room like a caged animal, energetically. He was advised to lie in bed, especially when the oil of wintergreen had dispelled the pain in the knee. I left the man with the reasonable assurance to his brother that all had been and would be well.

At 11.30 P. M. (or thereabouts) I received a telephone message from the patient's nurse, verified by the night superintending nurse, that the patient had collapsed and showed a pulse barely perceptible in one wrist, absent in the other, great pallor and profuse perspiration. I hurriedly summoned Dr. Brouner, because he had been with me at the injection, and Dr. Harlow Brooks as a cardiac expert. We took a taxicab, breaking all speed laws, reached the sanitarium in less than ten minutes for a distance of about fifty-four blocks. I think it was this taxicab that saved

the man's life, as he would hardly have survived ten minutes longer, unassisted.

Upon arrival we found the condition as described by the nurse, if anything, worse. The man was fully conscious, asked if he was about to die and stated that he did not care whether he did or not. Likely it was this spirit of fearlessness that aided in the recovery. I did not tell him I believed he was going to die, which may have picked up his native courage. Not only was the pulse absent in one wrist and barely perceptible in the other, but the heart sounds were hard to make out. We immediately began the best possible stimulation. Strychnine, which had been ordered by me, was repeated until the total of 1/10 of a grain was given. Camphor and ether were also repeated. A hot stimulating enema of coffee and whiskey was administered. Nothing could be taken by the stomach, as the patient began to vomit just before the collapse appeared. Fifteen minims of 1 in 1000 adrenaline chloride were given every fifteen minutes by hypo. In about a half hour the patient began to improve and in two hours reasonable hope appeared that he would pull through. It was at this time that digitalis was given in moderate doses.

Dr. Brooks and I remained all night with the patient and at seven o'clock next morning he was himself again, except for nervous and physical exhaustion. The kidneys during the following twenty-four hours excreted a greatly reduced quantity of urine containing much albumin and every known form of casts except pus casts. In a few days, however, the urine cleared so as to assume the condition prior to the injection, namely, as nearly normal as this patient ever showed. The heart regained its strength reasonably and the patient was discharged with his gumma in better condition than it ever had been before. Examination of the blood, however, about two months after the injection showed the result unchanged. For this reason the patient has requested and I have determined to give him another injection, similar in amount, after he has had twenty-four hours moderate stimulation of his heart and rest in bed. This second injection, if given, will be administered in the morning, so as to make it possible to watch him at frequent intervals before nightfall.

The difficulty in this case, in my opinion, is one of obscure alcoholic myocarditis. In this opinion, Dr. Harlow Brooks concurs. The element of nephritis should also be borne in mind.

Dr. John A. Fordyce, of this city, in the *Journal of the American Medical Association*, October 5, 1912, reports two similar cases as follows:

"The most alarming symptoms I have seen after the administration of salvarsan intravenously occurred in an alcoholic, who developed stertorous breathing, became cyanotic and almost

pulseless. He required very active stimulation, under which he shortly recovered. As similar experience has taken place in the practice of some of my colleagues, it would seem that salvarsan must be administered with extreme caution in patients who are chronic alcoholics.

"Occasionally by-effects, as headache, nausea and depression, are complained of. These symptoms appear within a few hours of the administration or may be delayed two or three days, and must be imputed to the drug itself. They are probably dependent on the rate of elimination or a direct action of the arsenic, as in those cases of transient albuminuria or icterus which have developed a few days after treatment. In these patients the symptoms are usually of short duration, the tonic effect of the remedy soon manifesting itself.

"Twice I have noted the development of nephritis after salvarsan; in the one case the condition was transient only, in the other the issue was fatal.

"CASE 3.—This patient was a woman, aged 25, with a severe secondary eruption, for which she was admitted to the City Hospital in the spring of 1911. She was given on May 8th, 0.4 gm. intravenously, which was followed by a sharp reaction. Twenty-four hours later her urine showed a trace of albumin, hyaline casts and red blood cells; May 11th it was normal. On May 23d, the patient was given another injection of 0.4 gm. In two hours her temperature had risen to 106 F. She vomited frequently that night and continued to vomit all the next day. The urine was suppressed and the blood pressure fell to 60. The patient gradually grew worse in spite of the most energetic measures and succumbed on the second day after the injection. Autopsy revealed an acute nephritis and hemorrhagic foci in the liver.

"This case was treated before the importance of using absolutely fresh distilled water was appreciated and it is possible that the toxicity of the drug was increased by the water. Then, too, in the light of further experience a smaller dose should have been administered and a much longer interval allowed to elapse before repetition in view of the marked reaction she showed after the first injection.

"On the other hand, I have given salvarsan in a number of cases of chronic nephritis without any consequence. In fact, the albumin has become progressively less. In a case recently treated the patient has taken four injections without any reaction whatever. When the nephritis is luetic in origin, the albumin at times disappears rapidly. The possibility of the irritant effect of the drug on the renal epithelium can be eliminated or at least minimized by careful examination before treatment and by the cautious testing of the susceptibility of the patient in administering a small initial dose."

INFANT FEEDING WITH UNDILUTED COW'S MILK.*

By WILLIAM B. HANBIDGE, M.D.,

OGDENSBURG, N. Y.

INFANT feeding with undiluted cow's milk was brought to my attention about twenty-one years ago, by a sister of charity, who refused to be instructed in modern methods and persisted in feeding infants whole milk. The results were so good in ten cases, that I decided to discard all preconceived ideas and try some experiments in whole milk feeding.

In 1910 I felt that I had a number of cases of sufficient interest to embody in a paper which was read before the St. Lawrence County Medical Society. This paper induced two of our physicians, Drs. Elkins and Mason, of Massena, to try whole milk with a number of infants that were not doing well on other foods.

By November, 1912, the writer was able to report a series of thirty-nine cases, collected from various sources, in thirty-five of which the results were very satisfactory and, in several of which various foods had been tried and whole milk was a last resort.

However, I will not dwell longer on these cases, as the paper referred to was published in the April number, 1912, of the *NEW YORK STATE JOURNAL OF MEDICINE*, but will proceed to report a recent series of fifty cases that I have been able to collect from various sources. Fifteen of these were in my own practice. Four were fed from birth, the ages of the others varied from three weeks to five months. Five were suffering from digestive disturbance, the other ten were healthy. Whole milk disagreed with one of the ten healthy children and, as it was passing curds, a mixture of milk and cream was given, which agreed with it. Four of the sick children did well, while the fifth, who had been improperly fed on milk and water and who had gastric catarrh, did not. Two of the sick infants, who were about three months old, had been improperly fed, and were so emaciated that they seemed almost hopeless when given whole milk. One improved rapidly, while the other gained but little for two months, although it did not vomit or have diarrhoea; then it commenced to gain rapidly.

In another the mother gave the following history: weight at birth six and one-half pounds; fed malted milk for four weeks but did not gain; Eskay's food was given for a week but disagreed. Child was taken to dispensary in Boston where laboratory milk was prescribed, upon which it gained a little, but vomiting, which had existed from birth, continued. After two weeks, malted milk was again tried for four weeks but there was still some vomiting. When first seen by the writer child was four months old and weighed eight and one-half pounds.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

Two and one-half ounces of whole milk, with a small amount of sugar, were prescribed for each feeding, intervals of feeding to be never less than two and one-half hours, and longer, if the baby was asleep or quiet. There was very little vomiting the first week and then food was retained. She cried very little and became a good baby. At seventh month she weighed twelve pounds, looked healthy and strong. Mother stated it consumed about thirty ounces of whole milk in a day, taking four ounces at each feeding, with one-half teaspoonful of sugar.

I am indebted to Dr. W. Grant Cooper for the privilege of reporting the following case:

Premature infant, seventh month, born June 7, 1912; weight, with clothing, two and one-half pounds; unable to nurse but was fed with mother's milk for three weeks, then modified milk for five weeks when it weighed exactly the same as at birth. The doctor then prescribed three teaspoonfuls of whole milk every two hours, gradually increasing the amount and lengthening the intervals between feedings. Child gained rapidly and November 29, when a little over five and a half months old, it weighed 12 pounds, a gain of one-half a pound a week for sixteenth weeks. This infant is now about ten months old, weighs fifteen pounds and consumes, according to mother's statement, three pints of milk a day.

Dr. Mary Bryan, who has charge of the infants in the United Helpers Home at Ogdensburg, has kindly given me permission to report her experience with whole milk feeding. There were ten children and they all did well. Their ages were one, two days old; two, three weeks; one, five weeks; three, three months; one, four months and two, five months old. The doctor reports they did better than babies fed by any other method.

Dr. Quain, of Madrid, has been good enough to allow me to incorporate in this paper his experience with whole milk.

He writes me that he has tried this method in seven cases and all successfully. Five were fed from birth, one from sixth week and another from third month. He had no trouble with any of them, except one, who had some digestive disturbance and was put on a commercial food for a couple of weeks and then again on whole milk.

Dr. Elkins, of Massena, has favored me with his experience with four cases since he last reported to me eighteen months ago.

Case I. Baby two and a half months old, had taken many of the commercial foods and was losing weight and strength on modified milk. Put baby on whole milk, two ounces every two hours. Food was retained and baby began to improve in a few days. Is now a strong healthy child fourteen months old.

Case II. Born April 6, 1912, of a tubercular mother who since died. Baby was given whole milk at its first feeding. It is now strong and

apparently healthy. It has never had a sick day since birth.

Case III. Infant six months old when first seen. Very much emaciated, vomiting and restless. Gave whole milk; retained part of milk; added a little lime water after a few days; vomiting ceased entirely, but child died later of exhaustion and lack of care.

Case IV. Baby ten months old, very weak, could not sit alone. It had been on modified milk since birth. Gave regular feedings of whole milk. Gained four pounds in a month and begins to look like a real baby.

Dr. Mason, of Massena, has also been good enough to send me a report of his experience during the last two years.

He reports thirteen cases in which undiluted cows milk has been tried in young infants. Eight were quite successful while five were failures. Three of the five failures had tried a great variety of foods, including modified milk before whole milk given, and did not seem to be able to digest cow's milk in any form.

In two cases whole milk which was tried at birth disagreed, but they did fairly well on modified milk.

The doctor said that he had several children that had been breast-fed until four to six months old and then thrived on whole milk.

An analysis of so many cases of vigorous infants that were fed on whole milk has induced me to arrive at some positive conclusions which, however, may be erroneous. I believe that children on a concentrated food like whole milk should be fed only when hungry. If they are asleep do not disturb them. If they do get behind with nourishment they can easily make up lost time. It is nature's way to feed only when hungry. It is no doubt the craving of hunger that suggests feeding time to the young of the lower animals. If the digestion is good and appetite keen they look for food often, if not so, less frequently. In the human family, from the remotest time, no doubt children were fed when they cried, just as they are to-day by ignorant mothers. If they were sick they suffered from over-feeding; but if they were well, they were, as a rule, fed only when hungry.

In feeding experiments the important thing is to arrive at the truth, irrespective of theories. Perhaps we are too apt to think that a result cannot be accurate unless we can give good reasons for its being so. John Hunter's plan of experimenting first and theorizing afterwards is the correct one with which to approach the subject under consideration. I have, however, thought of various reasons in favor of whole milk and will repeat substantially what I have said before.

Is it possible that in trying to get a food that chemically resembles mother's milk we have been led astray? The process of digestion is too complicated for chemistry to be the final judge. The stomach does not seem to occupy

the dominant position in the digestive process that we thought it did some years ago. Of one thing we are certain, and that is, that food must not be retained for too long a time in the stomach. Large portions of the stomach have been removed and if a free opening be left between it and the intestines the digestion may not be impaired.

The muscles of the infant's stomach at birth are poorly developed and in giving a highly diluted food may we not be producing dilatation and atony of that organ and consequently interfering with the proper emptying of the stomach, which is essential to good digestion? May we not be diluting the gastric secretion so that the process of digestion will be slow? May not every cell of absorption and secretion be taxed to its fullest capacity; may not the bowels be distended and their muscles weakened, hence colic?

Experiments have convinced me that from one and a half to two or two and a quarter ounces of whole milk for each pound that an infant weighs contains enough nutriment for each twenty-four hours.

One of our most popular works on pediatrics considers thirty-two ounces about the proper amount of modified milk for an infant eight weeks old, weighing about ten pounds, the same child on whole milk would require only from one-half to two-thirds that amount. If an infant weighing ten pounds takes thirty-two ounces of liquid in twenty-four hours, an adult weighing one hundred and fifty pounds, in order to consume an equal amount according to weight would take four hundred and eighty ounces or almost a quart every hour he is awake, allowing eight hours for sleep. What would we say to a doctor who insisted on our taking so much liquid? Perhaps the infant when taking an equal amount of fluid in proportion to size in the absence of speech expresses its feelings by crying. We must, however, remember that infants, no doubt, can absorb more liquid in proportion to weight than adults.

ABSCESS OF THE LUNG—A CASE STUDY.

By FRANK BETHEL CROSS, M.D.,

and
HENRY FLACK GRAHAM, M.D.,
BROOKLYN, N. Y.

F. B. Age 29, male, seaman, U. S. N. on shore leave.

Father was a Cuban, mother a Virginian negress. No history of tuberculosis or cancer in the family. Two brothers and one sister alive and well. Has always been perfectly well up to the time of his present illness. The past 12 years have been spent in the United States Navy. All venereal diseases were emphatically denied.

Two months before the time of his first examination he suddenly became hoarse and coughed a little at times, but otherwise felt perfectly well.

During the ensuing weeks there was a gradual loss of flesh and strength—at least 20 pounds.

Shortly before his first examination by one of us he began to suffer from marked weakness and severe dyspnoea and became feverish. The dyspnoea came on rather suddenly and remained constant, being increased by the slightest exertion and prolonged or rapid talking. In a few days he began to have pain in the lower left anterior chest and præcordium. The appetite was poor, and while there was no dysphagia, swallowing increased the dyspnoea. The cough became more frequent and was of a short catchy character.

At this time an examination of the larynx by Dr. Sturges—to whom we are indebted for this case—revealed a paralysis of the left vocal cord. Physical examination of the patient at this time showed what seemed to be a left lower chest full of fluid.

A diagnosis of pleurisy with effusion was made (Dr. Graham) and the left chest aspirated. The only fluid obtained resembled pure blood and it was impossible to move the point of the needle freely sideways as in a pleural cavity full of fluid. The consistency of the tissue traversed by the needle was similar to that of firm cheese. The needle was inserted about three inches.

Hospital treatment now seemed indicated, and the patient was admitted to the service of Dr. Cross at the Methodist Episcopal Hospital.

On admission he appeared to be in good general condition; his muscles were large and firm, his color was but slightly pale and his physical appearance such that it was difficult to accept his statement that he had lost thirty pounds in weight so recently. He presented a moderate dyspnoea but was comfortable with three pillows under his head. His hoarse voice has been referred to. His temperature was 102°, pulse 120, respiration 40. The mouth, teeth and fauces negative.

On inspection of his chest, the respiratory movement was seen to be restricted on the left side and the intercostal spaces were less evident on deep inspiration. On palpation vocal fremitus was absent over the entire left chest and slightly increased over the right upper pectoral region as far as the fourth rib. Over the *left chest* there was dullness posteriorly from the apex to the level of the fourth rib and flatness from that point downward. Anteriorly there was Skodaic resonance over the upper three interspaces. Over the left chest anteriorly and posteriorly breath and voice sounds were either absent or very distant. There were a few moist râles heard indistinctly. Over the area of Skodaic resonance, the respiratory murmur was roughened. Over the *right chest* pulmonary resonance was increased and the breath sounds were exaggerated. Vocal fremitus was increased. Above the level of the second rib posteriorly on this side the percussion note

was of diminished resonance, suggesting the quality of dullness: anteriorly this difference was not noted.

The left margin of the area of cardiac dullness could not be determined in the presence of the flat note everywhere present on percussion of the left chest. The heart was not enlarged to the right. The apex beat was located in the fifth interspace $3\frac{1}{2}$ inches to the left of the mid-sternal line: it was distinctly not displaced.

There was nothing of note in the abdomen. The von Pirquet test was negative. The Wassermann reaction was absent. The pneumococcus was reported in the sputum. The eye examination (Dr. Place) showed the right eye normal; the fundus of the left presented one fairly large patch of old pigmented chorioiditis in its central portion.

The urine was passed freely: 2,190 c.c. in 24 hours, amber color, of acid reaction, sp. gr. 1.014; it contained no sugar but a faint trace of albumen; a flocculent deposit under the microscope showed scattered epithelial and white blood cells.



Left AS SEEN FROM THE REAR. Right

The blood count revealed 5,248,000 red cells, 80 per cent. hemoglobin, and 16,400 leucocytes, 79 per cent. of which were polymorphonuclear and 21 per cent. mononuclear. The X-ray photograph, which is shown herewith, exhibited on the left side a shadow completely filling

that side of the chest and pushing the diaphragm downward to some extent. It furthermore gave confirmatory evidence that the heart was not displaced to the right.

So we had here a patient presenting practically all signs of a large amount of fluid in the left pleural cavity except displacement of the cardiac apex and Grocco's sign. He was subjected to a second thoracentesis, the needle being inserted in the eighth interspace $4\frac{1}{2}$ inches from the spine. No fluid was found and as, with the needle in situ, its free end was observed to move to and fro synchronously with the cardiac pulsations, it was withdrawn in some haste and no further attempts at aspiration made.

During the next five days the patient was fairly comfortable: the dyspnoea did not increase and the only complaint was of inability to sleep o'nights. The general condition remained the same, but his temperature showed greater remissions, 98.4 in the mornings and 102 to 104 degrees at night. Correspondingly his leucocytes increased to 36,000 and the relative polymorphonuclears rose to 95 per cent.

The *diagnosis* was in doubt. The physical signs without question pointed to the presence of a collection of fluid in the left chest and the blood findings were such as to make it quite evident that the fluid was purulent, yet, if this were a case of *empyema*, why these results on aspiration? *Neoplasm of the pleura* was not entirely excluded, as it would have accounted for the sanguineous fluid aspirated at the first thoracentesis, the rapid loss of flesh, the cough and, through glandular involvement of the mediastinum, the recurrent laryngeal paralysis. Against this diagnosis lay the blood count and the absence of signs of irregular pleural growth. *Tuberculosis of the mediastinal glands* with tuberculous pleurisy would have explained the throat paralysis and the bloody pleural fluid, but not the high leucocyte count. *Aneurism of the thoracic aorta* would have accounted for the laryngeal paralysis and the bloody tap, but there were evident none of the signs of aneurismal disease. *Abscess of the lung* was considered, but there was an absence of the usual history of previous pulmonary disease. We felt furthermore that this diagnosis did not account for the laryngeal disturbance.

With the diagnosis in doubt and the patient showing more temperature, greater prostration and increased blood findings, it was thought wise to recommend to him an exploratory thoracotomy, despite two indeterminate aspirations. So he was operated upon by Dr. Graham.

Under 1 per cent. eucaïne, assisted by a few drops of chloroform during elevation of the periosteum, a portion of the ninth rib was resected in the scapular line. There was no fluid in the pleural cavity and no adhesions were

present on costal or diaphragmatic surface, as far as the finger could reach. As the examining finger irritated the pleural surface and excited a spasmodic cough, the lung expanded and filled the entire left side of the thorax, obliterating the space between costal and pulmonary pleura. The lung was firm, tense, and almost incompressible. With difficulty the finger was bored into the lower lobe opposite to the thoracotomy wound for a distance of about 1½ inches. No pus was obtained. There was slight bleeding. A tube was inserted and the muscles and skin sutured.

Following this operation conditions remained unchanged. The temperature, pulse and respiration still shot up and down with the greatest height usually at 4 P. M. or 8 P. M.

Van Cott's vaccine was given without apparent effect on three different days.

On the fourteenth day following operation there was a slight amount of pus on the dressings, and on the seventeenth day a purulent river flowed through the opening where the tube had been and inundated the bed and pillow. Immediately following this the temperature ceased to soar, the appetite improved, and everything seemed favorable. At this time, however, it was impossible to find any opening leading into the lung for more than an inch, although a careful search was made.

Several days of normal temperature were followed by a slight afternoon rise, indicating imperfect drainage but seemingly of no alarming import.

Suddenly near midnight the patient had a profuse hæmorrhage which ran from the mouth; he became pulseless, and died.

Post-mortem Examination.—There was no fluid present in either pleural cavity. The lower lobe of the left lung was firmly adherent to the chest wall at the site of drainage, while this entire lung was fibrous, hard, dark in color, contracted down toward the mediastinum and, upon removal from the body, was practically airless.

On section, an empty cavity about the size of an egg lined with a pyogenic membrane was found in the center of the left lower lobe. The air vesicles surrounding this cavity for a distance of an inch in all directions were full of pus, which exuded forth as a minute drop from each vesicle separate and distinct from the others. A culture from this pus showed pneumococci. The left mediastinal lymph nodes were enlarged to the size of an almond. On cut section the gross appearance did not suggest tuberculosis. Nor were any areas found in either lung that seemed suspicious of either an active or healed tuberculosis.

The right lung extended well over to the left side of the thorax, nearly covering the heart and reaching to the mid-clavicular line. The

air vesicles were much dilated as a result of compensatory emphysema and a mottled appearance was present, due to the aspiration of blood into some of the air vesicles. The exact point from which the fatal hæmorrhage occurred could not be identified.

There was no fluid in the pericardium, which was smooth and glistening. The heart was of normal size and appearance, and the endocardium gave no evidence of disease.

Abdominal examination showed organs which were practically normal, with the exception of the liver, which was enlarged and congested.

Section of liver, spleen and kidneys was devoid of interest. The stomach and intestines were not opened, but their external surfaces had the usual appearance.

A microscopic examination of a section of tissue was made by Dr. Dexter, who reported as follows: "The abscess wall is suggestive of tuberculous inflammatory tissue, and although there are no giant cells and no anatomic tubercles, there is a tendency in several places toward such an arrangement. The picture is that of a hyperplasia of connective tissue with a generous round cell and leucocytic infiltration."

Here then is the story of an abscess occurring in the center of one lobe of a lung without any antecedent pneumonia, so far as could be learned by careful questioning of an intelligent patient. A negative Von Pirquet examination and absence of tubercle bacilli from the sputum considered in conjunction with an absence of gross tuberculosis of the lungs and only a suggestive microscopic appearance convince us that this was not a broken down area of tuberculous consolidation.

We regret that the post-mortem examination was not so minute as to exclude, beyond the shadow of a doubt, all other possible sources of such an infection, but we feel justified in suggesting, at least, the possibility that this may have been a primary abscess of the lung.

We would consider it advisable to care for similar cases in the future as follows:

After locating the seat of trouble as definitely as possible, the patient is anesthetized by the intratracheal method and a small piece of rib resected to admit an exploring finger. If the localization is not very definite, it is probably preferable to expose the ninth rib in the scapular line.

An examination is now made for adhesions, areas of induration or for undue softness. If adhesions are found at some distance from the primary incision, a portion of another rib should be removed over the adhesions and a needle passed through the area in an effort to locate pus. If this is successful and the adhesions are firm, drainage may be instituted

at once by means of the actual cautery or the insertion of a blunt instrument, such as an artery clamp, which may be gently opened and withdrawn, a tube being next inserted and the wound closed. If no adhesions are found and it is decided that the incision is placed in as favorable a position as possible, about two inches more of rib should be excised to expose a generous surface of the pulmonary pleura. If the lung has contracted down away from the thoracic wall the pressure within it should now be gradually increased until parietal and visceral pleura are brought together. No definite pressure in millimeters can be given because, as Meltzer has shown, the intrapulmonary pressure will vary, not only with the pressure at which the anæsthetic is delivered into the trachea, but also, according to the size of the catheter used.

In our case, irritation of the pleura by the examining finger caused a violent cough, which forcibly expanded the lung each time until it filled the entire space. Hence distension would have been a safe procedure.

Next the entire wound is packed with gauze, without suturing, and an air-tight dressing of rubber tissue fastened at its edges with adhesive plaster and held in place by a firm bandage surrounding the thorax, is applied.

The pressure, which has been maintained until this time, is now lowered and the anæsthesia is discontinued.

After an interval of four days or more the dressings are removed and a needle may then be passed in any desired direction until the pus is located. Then the cautery or clamp, passed along the needle, provide a passage for the tube, which is next inserted. If desired, an attempt may now be made to suture the wound and hasten healing.

Further treatment will be along the usual lines.

A. LOOSE SACRO-ILIAC SYNCHRONDRISIS AND ITS TREATMENT.

By CHARLES C. ZACHARIE, M.D.

WHITE PLAINS, N. Y.

THIS peculiar, if not rare injury, which I am about to describe, its etiology, symptoms, diagnosis, prognosis, and treatment, seems to me quite interesting, especially at the present time on account of the number of injuries due to the use of automobiles. The most common injury one receives while cranking a car is a Colles' or chauffeur's fracture at the wrist joint.

Mr. C. came to my office seven weeks after his injury, which he received on March 1, 1913. He stated that while cranking his car he was obliged to spin his motor. He stood facing his engine and on cranking, the engine kicked back.

Fearing to let go of the handle of the crank shaft he held on, his arm was thrown violently into the air and his back twisted. At first he was unable to move, so severe was the pain in his back. The next day the pain was intense, being relieved only by assuming a recumbent position. The pain extended from the waist line to the lower extremities.

He waited three days before consulting his physician, who made a diagnosis of rheumatism and muscular strain. The ordinary remedies failed to give relief. He took a trip to Virginia, thinking the warm climate might do him good. On returning he consulted me, as he was not feeling any better, this being seven weeks after receiving the injury.

On examination in standing position I found he had quite a tender spot over left sacro-iliac joint. I placed him on a table on his back and had him flex his left thigh with his knee in an extended position. This caused him intense pain, which he referred to the left sacro-iliac joint. When standing, the flexion of his body upon his thighs was very much restricted by pain. All his symptoms of pain seemed to radiate from his seat of injury, which in my opinion was due to an injury of the ganglia of his sacral plexus.

The X-Ray Findings showed the contour and structure of the lumbar vertebræ sacrum and part of the ilium distinctly.

The bodies of the third and fourth lumbar vertebræ were normal in size, shape and alignment, and the spacing between them was adequate. There was an irregularity between the fourth and fifth lumbar vertebræ, which was more marked on the left side than on the right, definitely located at the articulation of the laminæ between these two vertebræ. Owing to the length of time which elapsed between the injury and the taking of the X-Ray photograph it seems to be impossible to state whether the picture shows a fracture or some pathological change in the structure of the bone at this point.

The diagnosis having been made I placed his pelvis in adhesive straps in a standing position, using a pad of felt about five inches square and one and a half inches thick over seat of injury, allowing the plaster then to pass around the sides of the pelvis just under the crest of the ilium, continuing them around toward the front part of his abdomen. Bandages were applied over the plaster and he was permitted to walk. This strapping was changed every two weeks for six weeks when a belt was substituted, which contained a similar pad, which was buckled about him and which he wore during the day and removed at night.

The prognosis in this case is good, for the joint has tightened itself. Pain in the back has disappeared. The patient is free from all pain and able to go about in perfect comfort.

THE FUTURE OF TRAINED NURSING IN SURGERY.*

By MARTIN B. TINKER, S.B., M.D.,
ITHACA, N. Y.

A GREAT deal has been said at nurses' commencements in recent years about the history of nursing; about Florence Nightingale; the pioneer nurses' training-school at Bellevue Hospital; and of the rapid spread of the idea that the sick should be cared for by those specially trained. You know of the great improvement in results of treating illnesses which have come to the world in this way. A year ago Doctor Hurd outlined at our commencement the important changes at present being introduced to add still further to the efficiency and helpfulness of the trained nurse. To-night, with some hesitation, I venture to leave the conventional topics for nurses' commencement addresses: the past struggle for existence and the present success of nurses, to consider with you the possible future of the trained nurse in surgery.

The growth of surgery has been rapid in recent years, but I think there are reasons for believing that the field of surgery will be still further extended and far more rapidly in the future. The trained nurse is indispensable in the surgery of the present, and she will be more so in the progressive surgery of the future. Her field will be not only in the preparation of patients for operation and in their aftercare, but as assistant in the operating room, anæsthetist and executive in charge of the management of hospitals in smaller cities and towns.

To form an intelligent idea of probable conditions in the future, it will be necessary to consider briefly the growth of surgery in the past. Modern operative surgery has come into existence since the introduction of ether anæsthesia in 1846. Before that time, the few operations were performed without any means for relief of pain, and the field of the work was necessarily very limited. Almost equally important was the discovery that bacteria are the most frequent cause of disease and the application of antisepsis to the prevention of the growth of bacteria, by Lister. We may fairly place the real beginning of modern surgery in this country about thirty years ago when Lister's teachings about antisepsis were being introduced. But this was only the beginning. One of our best known teachers of surgery has said: "The majority of the operations which are done to-day were not only not attempted but were not known fifteen years ago. Indeed, many of them were unthinkable before the introduction of antiseptic surgery." The growth since the introduction of ether and antisepsis is perhaps best shown in the records of certain of our great hospitals. The records of the Massachusetts General Hospital at Boston,

show that in ten years before the use of ether 385 patients were operated upon, while in the single year of 1903 the number has increased to 3,109. At the Roosevelt Hospital, New York City, in 1878 only 132 operations were performed; in 1903, 2,719. The New York Hospital in 1878 had 142 operations; in 1903, 1,680. These are old established hospitals of great centers of population, yet every year we have many more major operations in the surgical department of the sanitarium than were performed in large city hospitals thirty years ago. But more important than the *number*, is the fact that most of the operations of thirty years ago would now be classed as minor affairs, yet the death rate was then very high. Now we do much that was then unheard of and in spite of the increased gravity of the work the death rate is nearly zero. Many forms of quackery have had a phenomenal growth for a few years, but only kinds of treatment that give real permanent relief stand the test of fifty years.

Safety Influencing Increased Resort to Surgery.—Among the reasons to predict still greater increase of surgery in the future I would mention: spread of knowledge of the uses and safety of surgery. The general public and even many medical men do not fully realize the possibilities of surgery in the treatment of disease. How many persons there are who do not know that rupture can be safely and permanently cured by surgery; people are just learning that surgery offers relief for goiters; for many cases of chronic dyspepsia; for all tumors, even cancer if taken in the early stage; that not all lameness is rheumatism, and not all indigestion, stomach trouble. Few know how many forms of disease are treated successfully surgically and a large proportion still erroneously believe that surgery is dangerous to life. Thirty years ago all surgery was attended with great risk; ten years ago most major operations were dangerous; today no ordinary major operation, undertaken in suitable cases and under proper conditions, has as high a death rate as the average epidemic of typhoid fever. When the public really learn how free from danger modern surgery really is, the number of surgical cases will increase tenfold.

Growth of Population and Surgical Nursing.—Then, too, the natural growth of our country in the next decade will greatly increase the amount of surgery and call for a small army of trained nurses. But the increase in number of trained nurses and doctors must in the future, as in the past, be out of proportion to the growth of population, for our hundreds of thousands of immigrants belong, for the most part, to the working class, and the educated and trained caretakers for these people must be provided from our more fortunate native population. The increase of over 13,600,000

* Read at the Commencement of the Training School for Nurses, Clifton Springs, N. Y., 1912.

in the population shown by the census of 1900 over 1890 seems likely to be far exceeded in 1910 and 34.4 per cent. of our entire population of partial or wholly foreign parentage at least maintained.

Need for Surgery in Small Towns.—Not only will the possibilities of surgery become better known, not only will the population increase, but the field of usefulness of the trained nurse will be seen in many communities that have not known her in the past. In the past, and for the most part at present, only the larger centers of population have been adequately taken care of surgically. In the future, every town of over five thousand inhabitants should have a trained surgeon with his corps of assistant nurses around him, to take care of the illness which naturally develops in such a community. I am assuming, of course, that the small town has a population in the surrounding country more or less tributary and that in the future the public will be better educated as to the need for surgery and the advantages of hospital treatment over home care. The relative proportion of surgical diseases and accidents in small towns is quite as large as in large cities, yet in the past, surgical help has had to come to the people of smaller towns from great distances, and in many cases of urgent illness, lives have been needlessly sacrificed to the delay.

Advantages of the Smaller Centers.—Not only is surgery with its accompanying surgical nurses, necessary for emergencies, but much of the non-emergency surgery of the future is sure to be done in the country. The noise, dirt and dust of the crowded large cities are not conducive to speedy recovery after operation, to say nothing of the difficulty in obtaining milk supply, fresh eggs and other foods, and fresh air, so valuable for speedy convalescence. Then, too, the nurse and doctor are much affected by conditions of living. The rush of crowded streets, the mad speed of automobiles and subways, the luxurious, say nothing of the fast living of our great cities, do not fit men or women physically or mentally for the strain and responsibilities of the operating room. The value of wholesome living and a less swift pace, not only for the patient but for the nurse and doctor, will be more appreciated in the future.

To give you an idea of the possibilities of surgery in the small town I need only mention that during the past four years over 1,000 operations have been done in our little operating room across the street, with a death-rate less than one in five hundred major operations during the past two years. Of this number, a large proportion came from Clifton Springs and the immediate vicinity. With these facts before us, is it not fair to suppose that in twenty-five years from now not only large

cities but smaller towns throughout this country will be provided with a suitable hospital corps of trained nurses? At present, there are 916 towns in the United States with a population of over 5,000 inhabitants. In twenty-five years this number will be much larger. Estimating that each of these towns is provided with one hospital and a staff of ten trained nurses, at least ten thousand nurses will be needed in the smaller hospitals, to do the work.

Nurses as Specialists in Anesthesia.—This large army of nurses will be employed not only as caretakers of the sick, but as anesthetists and operative assistants, and as managers of the small hospitals. All those here present who have been obliged to take a general anesthetic appreciate the importance of care in its administration. Skill in anesthesia is gained only by much experience and the anesthetist should be in constant practice. The importance of the anesthetist's position has been estimated by several of our best-known surgeons as second only to that of the operating surgeon himself. Yet relatively few men are satisfied to specialize as anesthetists. Women are well adapted to act as anesthetists and I believe that there will be in the future many thousands of trained nurses in the smaller cities who will devote themselves to the administration of anesthetics alone. Already several prominent surgeons have women for their anesthetists. One of the most valuable papers which has recently appeared on the use of ether was a report of 14,000 anesthetics given by one trained nurse in one of our best American clinics.

The Operating Room Nurse.—The successful operating room nurse requires special qualities which relatively few women possess: absolute trustworthiness, no matter if worn out from lack of sleep, overwork, or even illness, trustworthiness in every minute detail; for the success of operative work at present depends to a greater degree upon care in details than upon speed or the spectacular work of the surgeon: physical endurance and the ability to work in a trying or even apparently hopeless situation; what is commonly called nerve is also needed in high degree of the operating room nurse. She should be cool, collected, quick to hear, quick to see, and quicker still to do in any emergency; quick to anticipate the wants of the surgeon without being told what to do. As the regular operating room assistant, the trained nurse has a great field in the future, I feel sure. Women have quicker intuition, are better mind-readers, and a thoroughly trained nurse is often a better operating room assistant than a graduate in medicine with months of experience. Women are usually more deft with their fingers than the average man, besides their hands

are smaller and less in the way of the surgeon in working in a small wound. The average man who graduates in medicine usually feels that he can do better than his surgeon after six months' experience, is dissatisfied with his surroundings, and ambitious to do something better. The trained nurse is not ambitious to become an operating surgeon and, barring matrimony, can be depended upon for several years of valuable service; while the hospital house officer is away and into practice on his own account by the time his services have really become of value. For certain work where great strength is required, the man will always have the advantage as an assistant, but in several of the best clinics in this country, the trained nurse is depended upon as the operating room assistant. For a thoroughly satisfactory operating room technique, such thorough and long-continued training is needed that every action becomes automatic. We all know how slowly and painfully the child beginning to write forms each line and curve. Even for the grown person, much practice is needed to obtain speed as a telegraph operator, or as a stenographer. Quite as essential is it, that every movement at the operating room table should be as nearly automatic as possible. To gain this power requires a long training, and the services of the nurse with such ability are correspondingly valuable. The operating room nurse should not be required to care for the sick. Her work is too exacting and requires long hours of rest for thorough recuperation from the terrific nerve stress and strain.

Nurses as Hospital Executives.—Quite a different kind of woman is needed to take charge of the smaller hospital, as superintendent of nurses or often superintendent and matron combined. The smaller hospitals find it impossible to get a man to do this work for the salary they are able to pay and in many places throughout the country trained nurses are filling such positions most satisfactorily. As positions for women go, the salaries paid are good, and as the number of hospitals in small towns increase, such opportunities for the trained nurse with executive ability will become more and more numerous.

These special fields of usefulness for the trained nurse, as anesthetists, as operating room assistants, and as matrons of the small hospitals will not lessen the relative number of nurses required to care for the surgically sick. Indeed, as the value of surgery as a means for the cure of disease becomes more appreciated, the importance of careful after-nursing will also be better appreciated. An eminent surgeon recently said in a clinic which I was visiting that the only medicine he was accustomed to prescribe for sick patients after severe abdominal operations was a good nurse.

Special training is desirable and necessary to understand the needs of patients after operations on various organs of the body, and the nurse who specializes in surgery will in the future be as much a matter of necessity as the graduate in medicine who specializes in surgery or some other branch.

Public Responsibility for Nurses' Training.—These wider fields of usefulness with the more thorough preparation required, place a responsibility not only on the nurse herself for faithful effort and thorough work in gaining the necessary experience, but responsibility also rests upon their teachers and those who shape the policy of the nurses' training school. All concerned in the management of such schools should always keep in mind that the primary object of a nurses' training school is to teach how to care for the sick. The training school should not be looked upon primarily as a matter of convenience for the institution in which they are taught, still less a source of profit. Already this higher ideal of the nurses' training is seen in the requirements of the Regents of the State of New York. I believe that the course outlined by the Regents is now lived up to by but few of the schools registered, but I feel equally confident that it will be more and more approximated in the future.

The public has a duty to our nurses' training schools. It is the people of the community who reap the real benefit of the more thorough training of the nurse. How many among you would be willing to sacrifice nights of sleep; to render the necessary but often disagreeable services of a nurse; or hardest of all to listen for days and weeks to the petulant complaints of the sick? It may be your turn next or that of one of your dear friends to occupy the sick bed. Are not all here present as likely to be affected by the training or lack of training of the future nurse as she is herself? Yet this institution, which through the generosity of its noble founder has given so freely to the sick, has long needed suitable quarters for its nurses. There is a splendid opportunity for a person of means to establish a permanent memorial to himself or to a friend by contributing the needed funds to build a nurses' home for our institution, and this opportunity may be found in many other places than in Clifton Springs. Not all of us have the means, unfortunately many have the inclination but not the money, to found a well-equipped nurses' home, but many here present must have influence or the possibility of influence in the management and policy of our hospitals, sanitariums, and other institutions for the care of the sick. Will you not use your influence whenever possible for the interests of the future nurse? Help to provide suitable books, apparatus, and teachers for her instruction.

Try to make possible the eight-hour schedule of duty, which is so desirable in order that there may be time for study. See that suitable food, room, rest and recreation when off duty are provided and so advance the standard of nursing in the future. Without nurses can be provided with such comforts, not many will easily be persuaded to undertake the work. And last, but far from least give the nurse the honor and appreciation which from the value of her services she deserves. No one knows how little gratitude there is in the world so well as the trained nurse and doctor. There are many noteworthy exceptions, yet how much oftener we hear criticism and complaint than a word or sign of appreciation. Intelligence and the highest character are indispensable for the successful nurse. No class more literally follows Christ's command to "heal the sick." If in the future an increased number of the world's noblest women are to be found in the nursing profession, you should have a care for the trained nurse and give her your respect and gratitude.

TUBERCULIN TREATMENT.*

By EDWARD R. BALDWIN, M.D.,

SARANAC LAKE, N. Y.

IN these latter days of therapeutic enthusiasm over vaccine therapy, tuberculin has returned to favor. Now and then it is well to stand aside from a current in medical thought or practice and consider it. This is what should be done with tuberculin treatment. Doctors are too busy to give much time to the study of this treatment, yet many ought to give more, if they will be successful or avoid harm.

Nature of Tuberculin.—First, let us inquire what is tuberculin. It is an extract of tubercle bacilli or an emulsion of the germs pulverized and preserved. It is a poison to all tuberculous subjects, but comparatively inert to those who never were infected. It does not act as a direct poison but becomes digested, or transformed, into a poison during digestion, especially by tuberculous tissue. The tuberculous patient produces tuberculin in his tubercles by the death and disintegration of the bacilli. It can act very much the same as that injected. This is known as autoinoculation, and has formed the basis of a successful but dangerous form of tuberculin treatment. Whatever the name under which tuberculin is sold, it is always the same in effect if the dose is large enough. If it is inert in producing reactions, it is no longer tuberculin, and of no value in a specific sense, though it may and often does produce a strong mental impression favorable to the patient. Real tuberculin treat-

ment is a poison treatment like strychnine, digitalis, or aconite, in that the good effects rest upon the right dose. More than enough is generally harmful, often dangerous. Less than enough is safe, but, as already stated, simply mind cure, and often fraudulent by replacing more important measures.

Object of Treatment.—Next, what objects have we in view in tuberculin treatment? In general, two. One to lower the sensitiveness of the patient to the poison, and that means to the tuberculin formed in his own tubercles as much as to that injected. The other to stimulate the tubercles to react intermittently and thus aid in absorbing and healing the tubercles and also the ulcers that are so sluggish. There are various opinions about these questions, but I believe the foregoing states the best modern views. The object of lowering the sensitiveness is to prevent the constant tendency to febrile attacks or exacerbations so common with tuberculous subjects. Frequently when there is no fever, the patient has lassitude, dyspepsia, and other symptoms of latent tuberculosis. This is especially applicable to scrofulous cases, with or without lung involvement.

When enough tuberculin is given to produce an evident reaction, there is danger of increasing the very thing that it is our object to avoid—that is, high sensitiveness. It is, therefore, not safe in many cases to use the stimulating method of rapidly increased doses, unless the patient has none of the symptoms, such as fever, high pulse, dyspepsia, and constitutional weakness.

Selection of Cases.—In selecting patients for this treatment a physician will not go far wrong if the fact be kept in mind that a patient already poisoned and having daily fever of 100 degrees or over is no subject for any kind of tuberculin treatment. I mean that progressive tuberculosis, where fever, sweats, lost weight and strength are present, form contraindications for the treatment. The patient already has more tuberculin of his own manufacture than he can stand. Harm is being done today by such treatment. The following letter illustrates what almost criminal ignorance there is in some instances. The father of the patient writes as follows:

"His temperature ranges around 101 degrees and at 3 P. M. it goes to 102 or 103 degrees *altogether owing to the exertion (sic!)* he has been under. . . . Our doctor has used Koch's tuberculin on him, but after a consultation it was decided that he had a mixed infection," etc., etc.

Obviously this patient was being badly handled; probably he was being walked two miles a day for the air!

It is true that some patients have improved after such treatment but—I fain would believe—in spite of it. Fortunately in many instances the tuberculin employed is almost inert in the doses given.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., May 1, 1913.

The proper indications for tuberculin treatment are hard to lay down. Most patients when first seen are certainly unsuitable, since they usually go to a physician only when ill with a fresh outbreak of the disease. The patient needs rest, feeding and air first; then may take tuberculin with advantage if he becomes stationary after improved nutrition, lowered temperature, infrequent sweats or none. The most suitable cases for the treatment are those who stand still after reaching a fair degree of improvement, and also, of course, truly incipient cases. Those who have had complications, such as diarrhoea, marked laryngitis with ulceration, rapid breathing and heart action, are wholly unsuited. It is often forgotten that in tuberculin treatment, as in all other vaccines, there must be some resistance to build upon or harm will be done.

Reactions.—There are three important ways in which this treatment may act. (a) It may cause local effects at the site of injection. (b) It may cause reactions in the diseased tissues—focal reactions. (c) It may cause constitutional effects with or without fever.

It is probable that any specific effect that a given dose may have is always first at the place injected. If enough is injected the tubercles are also reached and become inflamed. If the absorption from these is sufficient a general reaction follows. This is not always fever but may simply be increased pulse rate, headache, dyspepsia, or loss of appetite and fatigue. These are signs of overdosage and usually there will be tenderness or swelling at the site of injection and increased sputum, if in a pulmonary case. They are danger signs.

Methods.—There are many opinions as to the best way of administering tuberculin and the dosage. It is practically reduced to the subcutaneous method as safest and most effective, and to an experiment with each separate patient as to the dosage. Any cut and dried rules as to increasing the doses by a system, are liable to fail when the patient is on the border-line of a reacting dose.

So, it is important to study each individual, and the use of the cutaneous or intradermic test at the beginning will aid in testing the sensitiveness to guide the physician in inaugurating the treatment. If but slight reaction occurs it is possible to double the doses at first then to go on by decimal increases.

When marked skin reactions occur the first doses should be small and the increase by tenths or less. A very safe method is advocated by Dr. Brown, formerly Resident Physician at the Adirondack Cottage Sanitarium.¹ It provides for a regular rate of increase. Professor Sahli² advocates another scale based on multiples of two, while Denys uses multiples of ten.

Results.—If tuberculin treatment as thus out-

lined is tolerated well, symptomatic improvement should be looked for in from one to three months. If fever attacks continue, weight is stationary or lost, and sputum increases, there is something wrong and the treatment should be stopped. Either the case is unsuitable or the method is faulty. Should the reverse occur, the treatment should be continued with occasional interruptions of one or two months for a year, or even two years, so long as improvement lasts. Cures are not made by tuberculin alone, but cures may be assisted by it, or as previously shown, may be retarded by it.

In conclusion, let it be understood that the foregoing is only a survey. Few details can be mentioned in a ten-minute talk, but I hope the following ideas are clear: First, tuberculin may work much good in some patients by lessening the sensitiveness to itself. Second, it may act as a stimulant to healing, or third, it may aggravate the disease.

BLOOD PLATELETS.*

By J. W. W. DIMON, M.D.,
UTICA, N. Y.

THE subject of blood platelets is one that seems to have taken a rather inconspicuous part in current medical literature. Indeed I believe that many medical men know very little about these so-called "third corpuscles" of the blood, and therefore it did not seem amiss to me to sum up our present knowledge of the physiology and pathology of these elements; the more so as recent work is beginning to make their study of considerable value to the general practitioner. The blood platelet is very fragile, degenerating in a few moments after blood has been shed. It is necessary to use special technique and fluids properly to preserve it, and the old method of platelet counting was slow and tedious. It is on account of these difficulties, probably, that more attention has not been paid to them heretofore.

In a fresh preparation the platelets are seen as small bluish bodies about three to five microns in diameter, round, oval or rod-shaped, according to the viewpoint, and of a homogeneous or granular consistency. No nucleus can be seen in the fresh state, and they contain no hemoglobin. Very soon they take on a glassy, sticky appearance, and degenerate, forming small granular masses of debris from which radiate strands of fibrin. This degeneration can be retarded by the use of various preserving fluids, such as Pacini's fluid (mercuric chloride, 2 parts; sodium chloride, 4 parts; glycerine, 26 parts; distilled water, 226 parts). Kemp's fluid (0.9% sodium chloride solution in 2.5% formalin), or a 10% solution of sodium metaphosphate. To get

¹ The tables are to be found in Tuberculosis, Klebs, and also in the excellent book on Tuberculin in Diagnosis and Treatment by Hamman and Wolman.

² See Sahli's Tuberculin Treatment, English translation, 1912.

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oswego, N. Y., October 3, 1912.

the best results the skin should be pricked through a drop of the fluid.

For counting platelets the most satisfactory method is that devised by Wright and Kinnicutt of Boston. The blood is diluted 1-100 in an ordinary red blood pipette and counted directly on the usual ruled slide. For diluting fluid is used a mixture of two parts of a 1-300 aqueous solution of "brilliant cresyl blue" with 3 parts of a 1-1400 aqueous solution of potassium cyanid. These must be freshly made, filtered and accurately mixed, and the dilution of the blood must be quick and accurate. A good technique will show a clear fluid with the red cells decolorized and scarcely visible, the white cells with beautifully stained blue nuclei, and the platelets as oval bluish bodies. Their number shows marked variation, the normal lying between 200,000 and 400,000 per cubic mm. with an average 300,000. Under pathological conditions, however, the count may fall to a few thousand per mm., and on the other hand counts above 1,000,000 are not at all unusual.

It is probable that these elements of the blood are formed and used in enormous numbers, and that their life history is very short, perhaps only a few days. Their rapid generation under certain pathological conditions would tend to point toward this conclusion, and some recent experimental work by Duke would also lend strength to the view. By removing blood from dogs, defibrinating and reinjecting it, he succeeded in reducing the platelet count very considerably, in one case to 21,000 per cubic mm. After this reduction the count increased per day at a rate of one-fourth to one-fifth of the total normal number, so that the animals returned to their original count in a very short time. There have been numerous theories advanced from time to time as to how these elements are formed: that they are the extruded nuclei of the red blood cells, that they are very young red cells, that they are degenerated fragments of leucocytes, etc. By far the most plausible hypothesis, however, it seems to me, is that advanced by Wright of Boston. He believes that they have their origin from the megalocaryocytes of the bone marrow. These are large giant cells with a hyaline protoplasm similar to that of the platelets, which rapidly degenerates and is therefore rarely found in a stained specimen. The nucleus is large, irregular and coiled. In a leukocytosis they sometimes leave the bone marrow, going into the general circulation. They are too large, however, to get through the capillaries of the lungs and are therefore strained out there. The platelets are probably formed by a breaking off of the pseudopods of these cells. Bunting has made an interesting study of the relation of these cells and the platelets in Hodgkin's disease, and he has there found the following set of conditions which he considers pathognomonic: *First*.—An increase in the megalocaryocytes in the bone marrow. *Second*.—Great

numbers of these have made their way out and their nuclei are found in the lung capillaries. *Third*.—The protoplasm has evidently been stripped off from these nuclei and is found in the general circulation as large masses of a hyaline material, identical with that of the platelets in appearance, but sometimes obtaining a length even of fifty to sixty microns. When such masses are found in freshly prepared specimens, it is of great diagnostic significance. *Fourth*.—The platelet count is greatly increased.

The function of these blood elements is something that until comparatively recently has been rather in the dark. There has always been a tendency to connect them in an indefinite way with clot formation and hemorrhage. It was known that their degenerated fragments seemed to form nodal points from which fibrin strands are laid down. In the formation of thrombi it had been observed that these elements were the first to attach themselves to any little roughness in the vessel wall, and thus, in a way form the basis of the intra-vascular clot. That there was a very fundamental relation, however, between platelets and clotting was, I think, first brought out by the appearance of some work by Duke. He showed that certain cases, though not all of hemorrhagic disease were associated with very low platelet counts, and, on the other hand that platelet counts which were below 50,000 were invariably associated with a marked tendency toward bleeding. That all cases of hemorrhagic disease do not show low platelet counts is not to be wondered at, for this condition is, in reality, not a well marked disease at all, but a symptom complex, depending on the inefficient clotting of the blood, or other similar factor. Now blood clotting, as you know, is a complicated process, depending on many factors, any one of which may be abnormal, and therefore lead to this condition. In other words, hemorrhagic disease is not a pathological entity, but is rather a group of diseases having a similar expression but caused by any one of a number of different factors. Duke in his articles proved that the blood platelets were such a factor, that their lack caused a tendency toward hemorrhage, and that they were therefore one of the elements necessary for proper clot formation. He also brought out the following interesting fact, namely, that in the cases of hemorrhagic disease with a low platelet count, the coagulation time was always normal, that is that there was actually a clot formed in the normal time of 2-5 minutes. This clot, however, was of filmy consistency, and seemed to lack a certain power of contractility which made it practically useless, so that it could not stop the ends of bleeding capillaries. This fact showed itself in the lengthening of what he called the bleeding time. This bleeding time he measured by making a slight capillary wound, and at intervals of one-half minute collecting on an absorbent paper the blood which exuded. In a normal person such

wounds would stop bleeding in from 1-3 minutes, but in people with low platelet counts, the time was always prolonged, sometimes for hours, and that, although the coagulation time was normal. Now just what factor it is that the platelets furnish is not entirely apparent. Whether it is simply their quality of stickiness that makes the clot adhere to the vessel wall, or whether they furnish some substance that enters into the chemical formation of the clot, is hard to determine. The latter view is probably the correct one, as is suggested by Bayne-Jones in an article, "The Presence of Prothrombin and Thromboplastin in the Blood Platelets." I will spare you a discussion of this evidence, however, with its incidental theories of blood coagulation, and simply refer you to the original article in the *American Journal of Physiology*.

The number of platelets in the circulation is, as I have said, quite variable, and influenced by many conditions. The normal is generally placed as between 200,000 and 400,000 per cubic mm. In the newborn the count at first shows marked deviations, but after the first week is constant and almost invariably high, 350,000 to 450,000. There may be a slight rise even as much as 150,000 with menstruation, and during the puerperium, generally in the second week the count goes up to nearly 600,000. Certain poisons tend to greatly increase the number, namely, benzol, tuberculin and diphtheria toxin. If a lethal dose of any of them is given, however, the count is generally greatly reduced before death. In febrile disease the reaction is not very constant, but in general it may be said that the count is increased as the body begins to show signs of resistance and recuperation. Following severe hemorrhage there may be a temporarily lowered count, but a day or two later there is generally a very marked reaction, the count often rising to the million mark. In all secondary anæmias, indeed, and in chlorosis the count is high, or occasionally normal, and this is in marked contrast to primary pernicious anæmia in which very low counts are obtained, sometimes even 20,000. A certain amount of prognostic significance may be attached to the count in this condition, and as the patient improves, it tends to rise again to normal. In splenomyelogenous leukæmia the count is high (500,000-1,000,000), while in lymphatic leukæmia it is low (30-000-150,000), or occasionally normal. The relation to hemorrhagic disease has already been touched upon, and a count in this condition would seem to throw considerable light on many of these cases. When the number of platelets is found greatly reduced their count may be raised and temporary relief obtained by transfusion. This may be sufficient to tide the patient over the critical period and save his life. I have also mentioned the unique blood picture in Hodgkin's disease, and a properly prepared specimen may be a great diagnostic aid in this condition.

I have tried in this paper to make out a case for the blood platelets. It seems to me that they do not deserve the neglect that they are accustomed to receive. Recent work has brought out many interesting and valuable points in regard to them, and I believe that as attention is directed toward them many more will be discovered.

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A MEMORIAL TRIBUTE TO NATHAN JACOBSON, M.D.

By JOHN L. HEFFRON, A.M., M.D.

FOR thirty-five years there had been associated with us in the practice of medicine in this city of Syracuse a man whom all had learned to respect and many to love—Dr. Nathan Jacobson. Suddenly, without the slightest warning, at the height of his powers, he was stricken down by death September 16, 1913, while visiting a patient in an hospital. The tragic manner of his death has projected his personality upon the dull background of everyday life so vividly as to focus the attention of our entire community.

It is early to review calmly the events of his life, to analyze the sources of his power or to try to account for his success. We cannot forget our loss. Our hearts are yet sorely wounded by his untimely death, and grief has still dominion over us. But the suddenness of his transition has brought his character so clearly before us that it is as distinct as is a striking landscape revealed in the night by a lightning flash, and perhaps never could we with better effect take home the lesson of his life.

Nathan Jacobson was born June 26, 1857, in this city and was brought up in its schools. He was graduated from the high school in 1874 and in the fall of that year entered our medical college, from which he received the degree of M.D. in 1877, and so he was a representative Syracuse man. He was a brilliant student and was ambitious to excel in the profession to which he had devoted his life. The year following his

graduation in medicine he spent in study at the Vienna School of Medicine where he devoted himself largely to diagnosis, pathology, surgery and to the special study of the throat and nose. Here he came under such men as Stricker, Bamberger, Bilroth, Duchek, Hebra, Politzer, von Schroetter and Stoerck, men whose names are still revered as foremost in that earliest part of this present most progressive era of medicine. To study under these thorough investigators and inspiring teachers was a liberal education in itself and made a lasting impression upon his character. He returned to Syracuse in August, 1878 and opened an office on Montgomery street near that of the best friend of young physicians—Dr. R. W. Pease. He attracted a good patronage at the start, and in those early days of specialties he was soon known for his work in diseases of the upper respiratory tract. His first papers were devoted to the consideration of these subjects and to the report of cases of more than common interest and importance. The excellence of this work attracted the attention of his colleagues on the faculty of the College of Medicine and they made him instructor in laryngology in the college in 1885, lecturer on laryngology and clinical surgery in 1888 and professor of the same subjects in 1889. In the meantime the scope of his work was broadening. He became loath to limit himself to a narrow field and in 1892 he gave over the department of laryngology to a worthy successor and was made professor of clinical surgery. In 1906 he was elected professor of surgery, which chair he held and increased its fame up to the time of his death.

He identified himself with the Onondaga Medical Society and with the Syracuse Medical Society, later designated the Syracuse Academy of Medicine, upon commencing his practice. Later he became a member of The Medical Society of the State of New York, The Central New York Medical Association, The New York Academy of Medicine, The American Medical Association, and, in 1901, upon the presentation of a paper based on original work, he was honored by an election to The American Surgical Association, a society containing only the first surgeons of this continent. He served at different times as president of The Onondaga Medical Society, of The Syracuse Academy of Medicine, of The Central New York Medical Association and of The Fifth District Branch of The Medical Society of the State of New York, and was of great influence in the State Society and in The American Medical Association. The high character of his work was revealed in many papers and addresses delivered before various county, state and national medical organizations. His system of recording and classifying every case that he studied was so perfect that he had a vast storehouse of original observations from which to draw in the preparation of his papers. That and his profound knowledge of surgical literature made the presentation of his observations and opinions instructive and convincing. His latest papers, one to have

been read at the meeting of the Onondaga Medical Society on "The Relation of the General Practitioner to Surgery," and the other to the Fifth District Branch of The Medical Society of the State of New York on "Local Anæsthesia in Major Operations," lie completed on his desk, and he was just beginning an address to be delivered at the opening of the College of Medicine on September 30.

His interest in general education was always great. The circumstances of his parents did not allow him to have a college education, but instead of repining at his lot he commenced in earliest life to make up for it by reading and studying the best works of the great authors. He rarely went to bed, however late his professional duties kept him, without reading some masterpiece of literature in English, German or French. I doubt if there be many men who are more widely read on general subjects than was Nathan Jacobson.

Dr. Jacobson's broad attainments and his interest in all phases of life gave him an acquaintance with a large number of the alumni of the various colleges of Syracuse University. The Alumni Association of the university honored him by making him their president in 1900, and only last June expressed their confidence in him by electing him to serve as alumnus trustee of the university for six years.

His ability as a teacher of surgery was conceded. He was analytical, precise and persistent in his methods. His evident devotion to his work and his magnetism inspired his students, and it is acknowledged that he was able to secure better and more thorough work from them than probably any other man on the faculty.

He was a master of surgical diagnosis. His surgical judgment was sound and made him a valuable consultant. As an operator he was not brilliant, but he was always skillful and thorough and his technique was without a flaw. Recognizing that the object of surgical therapeutic measures is to save life, he was persistent and painstaking in the care of those whom he had operated and the unusual percentage of successes which attended his operations was due as much or more to the after-treatment as to the skill of the operation. In his work he was absolutely honest—honest with himself and honest with his patient. He never performed any operation without first convincing himself of its necessity and of the possibility of its accomplishment. As a result no pathologist has a record of a long list of sound organs removed unnecessarily or through ignorance by this conscientious surgeon.

His interest in the public welfare was constant. In his earliest days he was one of the organizers of the Jewish Orphan Asylum of Central and Western New York and he was a director of that great charitable institution from its inception. He was always foremost in every measure that would improve the public health of his native city, and in public health measures in general. He was a member of the public health committee of the Academy of Medicine, of the Onondaga Medical Society and of the Chamber of Com-

merce. He was appointed by the mayor on the commission to safeguard the waters of Skaneateles Lake and was made a member of the Advisory Board to the Commissioner of Public Safety. He was elected a director of the Chamber of Commerce last May. He was one of the most earnest and powerful advocates of the establishment of the tuberculosis hospital for the County of Onondaga and aided in securing that superb site for this hospital on the hill southwest of the city. He was broad-minded and could see the other man's point of view, and because of these traits, and without the appearance of antagonism, he was often of great influence in helping to secure a measure for the betterment of public health conditions which at first was opposed by those in power. It was in this way that his advocacy of the medical inspection of public schools helped to overcome numerous and serious objections, and the system which now no one would think of not supporting and of perfecting was put into force.

His services to the poor were freely and conscientiously given and probably a fourth of his time was given to the care of ward cases in the hospitals. He was given a position on the staff of St. Joseph's Hospital under his preceptor, Dr. R. W. Pease, upon his return to Syracuse in 1878, and was made a surgeon at that hospital. He was elected a trustee of that institution in 1882. Here daily he spent much of his time, and his skill and devoted service did much to increase the reputation of that hospital. In 1903 he was made consulting surgeon to the Syracuse Hospital for Women and Children, and for some years he was consultant to the New York State Hospital for Epileptics at Sonyea. In the campaign to remove the indebtedness of the hospitals of Syracuse he took an active part and made liberal contributions of money as well.

Such is the brief record of some of the achievements of this man. Others will speak of him as a citizen and a friend. If we analyze his character to determine the sources of his power we must commence at his birth. He inherited a vigorous constitution and a fund of energy that was so great as to be a matter of comment. He had a keen intellect and took advantage of every means of training it and of increasing his powers. His accuracy and quickness of observation, which were the legitimate result of long training, made him appear to have intuitive knowledge. His industry was so great that no one ever saw him idle, and the judgment which directed that industry was so sound that he was always guided to do the things best worth doing and to concentrate his activities solely upon the subject he had in hand. In this way he was saved from wasting time. Though not lacking in imagination, he was never tempted by vague theories or faddish notions, but considered thoroughly the ground-work of any new proposition, whether in science or in any other field, and rested his judgment upon the solid foundation of logical reasoning after knowing the cold facts.

His honesty of nature was inborn. He never deceived himself and was rarely deceived by others, for the habit of accurate personal observation dominated him. In this way he avoided error in diagnosis and in conduct. His justness was based upon his truthfulness and had the same ground-work, an innate love of the "square deal." He was kind of heart, considerate of others, compassionate, the most genial of men, bright and witty and responsive, and these qualities made him a most delightful companion.

He had great natural gifts. He never wasted one, but cultivated each to the utmost. He was not erratic. You could calculate his life with accuracy, as an astronomer calculates the orbit of a planet. Every day with him was but a repetition of duties well done. His life of uniform service, of uniform kindness, of steadfast devotion to duty reminds one of the saying, "Every day is a life; and our whole life is but a day repeated."

This, then, is the lesson of his life to us and to all men. His success is no mystery, for it was based upon everlasting fundamental principles. It was the sure result of well directed and indomitable industry, absolute integrity of character and love for all mankind.

STATE PEDIATRIC SECTIONS.

Through the courtesy of the New England Pediatric Society an invitation is extended to the registered members of the Pediatric Section of the Medical Society of the State of New York to attend the joint meeting of the allied Pediatric Societies and Sections to be held in Boston on Saturday, November 8th. The four organizations represented will be the New England, Philadelphia and New Jersey Pediatric Societies, and the Pediatric Section of the New York Academy of Medicine. Visitors are expected to arrive in Boston Friday night or early Saturday morning. Saturday morning and afternoon will be devoted to visiting the hospitals. The new Children's Hospital is nearly finished, and the Out Patient Department will probably be in working order. The new Infants' Hospital, though not entirely finished, will interest many from the viewpoint of construction. Clinics will probably be given at the Massachusetts Babies Hospital, at the Massachusetts General Hospital and at the Boston Dispensary. There will be a dinner in the evening for which, as usual, each visitor will pay for his own ticket. Following the dinner there is to be a scientific session, at which four papers upon pediatric subjects will be read and discussed. In view of the elaborate plans for clinical demonstrations in connection with the annual meeting of our State Medical Society in New York City next April, there will be no pediatric clinical day in New York City this fall. For such this Boston meeting offers a most agreeable substitute.

THOMAS S. SOUTHWORTH, *Chairman.*

IN MEMORIAM

JOHN RANDALL STIVERS, M.D.

To die in the full tide of activity means to be doubly mourned, both from the added pathos of an interrupted career and from the greater number of friendships at that period. In the case of the subject of this sketch, this was accentuated by a special degree of personal esteem.

Dr. Stivers was born at Ridgebury, Orange Co., N. Y., March 16, 1870, and died at Brooklyn, N. Y., Sept. 18, 1913. His early education was obtained in his native town. Subsequently he graduated at the Walkill Academy, Middletown. The next two years he taught at Ridgebury. His professional training and life from this time on were wholly in Brooklyn.

In 1891 he entered the Long Island College Hospital, taking his degree in 1894. He then served his internship at the Kings County Hospital, and his excellent record there formed the real starting point of his career. He settled permanently in Brooklyn in 1896, taking the practice of the late Dr. S. C. Griggs in the Hill section of the old city. Since then he has been so active in affairs that a mere outline must suffice.

For many years he has been treasurer, ex-officio trustee and member of the Council of the Medical Society of the County of Kings. He was long a member and in 1911-12 president of the Brooklyn Pathological Society; charter member, 1898- , of the Associated Physicians of Long Island; fellow of the American Medical Association; member, 1900- , of the Long Island Medical Society; delegate to the State Medical Society; attending physician, 1900- , at the Kings County Hospital; long secretary of its Staff Association and its Executive Committee, and member and past-president of the Hospital Alumni Society; attending and president of staff of the Samaritan Hospital; "Clinical Lecturer in Medicine" at his alma mater, the Long Island College Hospital; member of the Crescent Club, and for some years of the Union League; Past Master and present trustee of Acanthus Lodge, F. & A. M.

Other honors, professional and fraternal, were immediately before him. In his various relations he had gained a wide acquaintance, an unusual degree of affectionate regard, and that standing for absolute trustworthiness that makes a man sought for in any capacity.

His writings are to be found in the columns of the *Brooklyn* and the *Long Island Medical Journals* (a dozen articles and briefs), and in the formal reports of the various official positions he had held. In 1910 he delivered the address to the graduating class at the Samaritan Training School. Of his further personality space permits but a word. He represented a fine type of modesty without diffidence. He had that innate quality, the power of mental growth.

Though originally of somewhat frail physique, he developed with the years and succeeded in meeting the demands and carrying the confidence of a large and exacting clientele.

One lesson of his too brief life is that even in this age of competition a man may work out success and an honorary position by industry and conformity to the best standards of conduct.

By his request an autopsy was held. This verified the diagnosis of a tumor at the pontile angle, presumably initiated by a peculiar accident to the head six years previously.

Three of his cousins are physicians: Dr. M. A. Stivers and Dr. T. D. Mills, the surgeon, of Middletown, N. Y., and Dr. G. L. Stivers of New York City.

Dr. Stivers was married in 1903 to Susan M. Haven of Brooklyn. Besides the widow he left a brother and a sister, both residents of Orange County. The interment was "in the beautiful cemetery at Ridgebury," his old home.

W. B.

JOHN GREEN CURTIS, M.D.

Dr. John Green Curtis, a native of New York, a graduate of Harvard and the College of Physicians and Surgeons, New York, 1870, died at his summer residence, Chatham, Mass., on September 20, 1913.

After graduation he served as an interne at Bellevue Hospital and later as visiting surgeon to the same institution. When he became interested in physiology he resigned from Bellevue and for many years was the Professor of Physiology in his Alma Mater, succeeding the late Dr. John G. Dalton.

In 1882 Dr. Curtis was elected secretary and made the report of the Committee on Experimental Medicine of the Medical Society of the State of New York, which had been reconstituted by the President of the Society. Dr. Curtis served on the Committee as Chairman and Secretary until he retired from active work three years ago. The value of the services rendered the public and the profession by Dr. Curtis was very great. He was the leader and wise counselor of the Committee, appearing annually before the Legislature to argue against the restriction of animal experimentation, and it was largely due to his efforts that no changes have been made in Section 10 of the act approved April 12, 1867, for the more effectual prevention of cruelty to animals.

Dr. Curtis after his retirement from college work interested himself in the history of medicine and left a valuable manuscript which it is hoped will be published in the near future.

He was an earnest worker in his chosen specialty, a man respected and beloved by all who knew him.

W. R. T.

CORRESPONDENCE.

"Medical Record," 51 Fifth Ave., New York.
September 30, 1913.

To the Editor of the

NEW YORK STATE JOURNAL OF MEDICINE.

SIR: Will you permit me to correct a misstatement in the letter by Dr. Rambaud, published in your September issue. The writer says: "On the day I received your telephone message asking for my communication, I had received a similar request from the *New York Medical Journal* and the *Medical Record*." This is an error. The editor of the *Medical Record* has never had any communication whatever with Dr. Rambaud and has never asked him for information of any kind, although he has received from him a number of communications puffing the so-called Friedmann treatment.

THOMAS L. STEDMAN, M.D.

State Charities Aid Association.

September 25, 1913.

Dr. John Cowell MacEvitt,

Editor, NEW YORK STATE JOURNAL OF MEDICINE.

DEAR DOCTOR: I note with interest your editorial on "The Law in Its Relation to Public Health" in the current issue of the JOURNAL, and that you publish the law in full in your legislative notes. As one who has for some years been greatly interested in measures for the improvement of the public health, I thank you for giving full publicity to this law.

I wish to call your attention to the companion law (Chapter 619 of the laws of 1913, an act to amend the Public Health Law in relation to vital statistics), which was prepared and introduced to carry out the additional recommendations of the Public Health Commission. This became a law by the signature of the governor, May 21st, but does not take effect until January 1, 1914.

The standards of registration and report established by the United States Bureau of Census were taken as a basis from which this law was drafted, the Vital Statistics Law suggested by them being modified to conform with New York State conditions.

As Whipple so aptly says, "Vital statistics to be of benefit must be accurate and sufficiently complete. If properly used, there is no keener weapon at the service of the sanitarian in his fight against the forces of disease."

The Special Public Health Commission appointed by Governor Sulzer fully realized that accurate records of the vital statistics of New York State are of the greatest importance, and for this reason included in their report recommendations which resulted in the enactment of this law.

I feel that any publicity you may give this law will aid materially in bringing the attention of the physicians of the state to its provisions.

Very truly yours,

CHARLES S. PREST, M.D.,

Assistant Secretary, Hospitals Committee.

Editor, NEW YORK STATE JOURNAL OF MEDICINE.

MY DEAR DOCTOR: Might I trespass upon your time to bring to your editorial notice a growing menace to the success of our Society meetings, viz., the tremendously long programs which are prepared for each section. It is physically impossible to even rush through the average session's allotment, to say nothing of the fatigue

and mental inertia of those who listen to the long sessions.

Another point. The program is framed to give each participant a fixed time for his paper. No time is provided for discussion. And here is the rub. A man in the early part of the discussion takes twice the allotted time and is not called to account by the chair. Then several men follow with the discussion, usually more than is provided for on the schedule. The result is that those who are down for the last half of the session have only about one-fourth of the time they are entitled to and discussion must necessarily be throttled.

You may say that this is a fault of the Chairman and so it may be. But it is also a fault of the Program Committee in planning such a heavy program that it never could be covered in the time limit with credit or profit.

If you, as Editor, can bring about a change in this growing evil you will do more to build up the interest in the meetings than in any other way.

Pardon my long letter, but take it for what it is worth.

Yours very sincerely,

IRVING S. HAYNES.

[The points made by Dr. Haynes are well taken and have appealed to others. Within the near future the matter will be considered more in detail.—Ed.]

Medical Society of the State of
New York.

MEDICAL SOCIETY OF THE STATE OF NEW
YORK—SIXTH DISTRICT BRANCH.

ANNUAL MEETING, ITHACA, N. Y., TUESDAY, OCTOBER
21, 1913.

PROGRAM.

TUESDAY, OCTOBER 21ST, 10.30 A. M.

"Vesalius," Andrew D. White, LL.D., L.H.D., D.C.L.,
Ithaca.

"An Unusual Outbreak of Septic Sore Throat in
Cortland and Homer," Henry T. Dana, M.D., Cortland.
Discussion opened by Halsey J. Ball, M.D., Cortland.

"Pain Anomalously Distributed in Cardio-Vascular
Disease," Henry L. Elsner, M.D., Syracuse.

Discussion opened by William Brady, M.D., Elmira.

"Vaccine Therapy, Theory and Application," William
C. Thro, M.D., New York.

Discussion opened by Bertis R. Wakeman, M.D., Hor-
nell.

"Use of Salvarsan and Neo-Salvarsan, with Practical
Demonstration of Cases," Carl E. Muench, M.D., Syra-
cuse.

Discussion opened by Arthur S. Chittenden, M.D., and
George H. Fox, Binghamton.

"Lantern Demonstration of Optical Defects," Prof.
Simeon H. Gage, Ithaca.

Luncheon will be served at 1 P. M.

Meeting of the House of Delegates.

Election of Officers for 1914.

General Business.

2 P. M.—LABORATORY SESSION.

(Fifteen minute sections in groups.)

Series of Stomachs, Spleens, Models, Frozen Sections,
Abram T. Kerr, M.D., Ithaca, Department of Anatomy.

Series of Human Embryos, Embryological Models,
Benjamin F. Kingsbury, M.D., Ithaca, Department of
Embryology.

Demonstration of Blood Pressure Apparatus. Pitui-
trin as a Galactagogue—Demonstration, Sutherland
Simpson, M.D., Ithaca, Department of Physiology.

"Some Points in Urinalysis Methods," Andrew Hunter, M.D., Ithaca, Department of Bio-Chemistry.

"X-ray Apparatus, Plates, Processes, Methods," Prof. John S. Shearer, Ithaca, Department of Physics.

"The Ultra Microscope," Prof. Emile M. Chamot, Ithaca, Department of Sanitary Chemistry.

"Rabies: Determination by Demonstration of Negri Bodies from Fresh Dog's Brain," Veranus A. Moore, M.D., Ithaca, Department of Pathology.

There will be a reception for the ladies at 4 P. M.

At 5 P. M. there will be an organ recital.

ANNOUNCEMENT.

Automobiles will meet all trains and will be provided for neighborhood trips for those who desire during the afternoon. Out-of-town cars may be parked at Stimson Hall.

The Tompkins County Medical Society as hosts will provide refreshments for all, and entertainment for visiting members and ladies.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A MANUAL OF OTOLGY. By GORHAM BACON, A.M., M.D., Professor of Otolgy in the College of Physicians and Surgeons, Columbia University, New York. New (sixth) edition, thoroughly revised. 12mo, 536 pages, with 164 engravings and 12 plates. Lea & Febiger, Philadelphia and New York, 1913. Cloth, \$2.25, net.

MINOR AND OPERATIVE SURGERY, INCLUDING BANDAGING. By HENRY R. WHARTON, M.D., Professor of Clinical Surgery in the Woman's Medical College, Philadelphia. New (eighth) edition, enlarged and thoroughly revised. 12mo, 700 pages, with 570 illustrations. Lea & Febiger, Philadelphia and New York, 1913. Cloth, \$3.00, net.

PHYSICAL MEASUREMENTS. A Laboratory Manual by A. WILMER DUFF, A.M., Sc.D., Professor of Physics, Worcester Polytechnic Institute, and ARTHUR W. EWELL, Ph.D., Professor of Physics in the same Institution. Third edition, 80 illustrations, XII+242 pages. Cloth, \$1.50.

EXPERIMENTS. (Shorter Course.) Arranged for Students in General Chemistry. By EDGAR F. SMITH, M.A., Ph.D., Sc.D., Blanchard Professor of Chemistry, University of Pennsylvania, and DR. H. F. KELLER, Professor of Chemistry, Philadelphia High School. 8vo. Illus. Cloth, 60 cents.

MEDICAL AND SURGICAL REPORTS of the Hospital of the Protestant Episcopal Church in Philadelphia. Volume I. Philadelphia. Press of Wm. J. Dornan. 1913.

HEADACHE. Its varieties, their nature, recognition and treatment. A theoretical and practical treatise for students and practitioners. By DR. SIEGMUND AUERBACH, Chief of the Polyclinic for Nervous Diseases in Frankfurt, A. M. Translated by ERNEST PLAYFAIR, M.B., M.R.C.P. London. Henry Frowde, Oxford University Press. Hodder & Stoughton, Warwick Square, E. C. 1913. Price, \$1.50.

STUDIES CONCERNING GLYCOSURIA AND DIABETES. By FREDERICK M. ALLEN, A.B., M.D. Boston. W. M. Leonard, Publisher, 1913.

AN INTRODUCTION TO THE STUDY OF INFECTION AND IMMUNITY. Including Serum Therapy, Vaccine Therapy, Chemotherapy and Serum Diagnosis. By CHARLES E. SIMON, M.D., Professor of Clinical Pathology and Experimental Medicine, College of Physicians and Surgeons, Baltimore. New (second) edition, thoroughly revised. Octavo, 325 pages; illustrated. Lea & Febiger, Publishers, Philadelphia and New York, 1913. Cloth, \$3.25, net.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume II, No. 4, August, 1913. Published bi-monthly by W. B. Saunders Company, Philadelphia and London.

ANATOMY, DESCRIPTIVE AND APPLIED. By HENRY GRAY, F.R.S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. New (American) edition, thoroughly revised and re-edited, with the ordinary terminology followed by the Basle anatomical nomenclature, by EDWARD ANTHONY SPITZKA, M.D., Director of the Daniel Baugh Institute of Anatomy and Professor of General Anatomy in the Jefferson Medical College of Philadelphia. Imperial octavo, 1502 pages, with 1225 large and elaborate engravings. Lea & Febiger, Publishers, Philadelphia and New York, 1913. Cloth, \$6.00, net. Leather, \$7.00, net.

MARRIAGE AND GENETICS. Laws of Human Breeding and Applied Eugenics. By CHARLES A. L. REED, M.D., F.C.S. pp. 182. (5¼ x 7¼.) The Galton Press, Publishers, Cincinnati, Ohio. Price, including postage, \$1.00. Subscription only.

A TREATISE ON THE DISEASES OF WOMEN. For Students and Practitioners. By PALMER FINDLEY, B.S., M.D., Professor of Gynecology, College of Medicine, State University of Nebraska; Gynecologist to the Clark Memorial Hospital and Douglas County Hospital; Fellow of the American Gynecological Society; Fellow of the American Association of Obstetricians and Gynecologists; Fellow of the Chicago Gynecological Society. Octavo, 954 pages, illustrated with 632 engravings in the text and 38 plates in colors and monochrome. Lea & Febiger, Philadelphia and New York, 1913. Cloth, \$6.00, net.

THE PROTEIN SPLIT PRODUCTS IN RELATION TO IMMUNITY AND DISEASE. By VICTOR C. VAUGHAN, M.D., LL.D., Dean of the Department of Medicine and Surgery of the University of Michigan, VICTOR C. VAUGHAN, JR., M.D., A.B., in charge of the Tuberculosis Work of the Detroit Board of Health, and J. WALTER VAUGHAN, M.D., A.B., Junior Attending Surgeon to Harper Hospital, Detroit. 12mo, 476 pages, illustrated. Lea & Febiger, Publishers, Philadelphia and New York, 1913. Cloth, \$3.00, net.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY. For Students and Practitioners. By E. C. DUDLEY, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Sixth edition, thoroughly revised. Octavo, 795 pages, with 439 illustrations, of which many are in colors, and 24 full-page plates. Lea & Febiger, Publishers, Philadelphia and New York, 1913. Cloth, \$5.00, net.

BOOK REVIEWS.

A TREATISE ON DISEASES OF THE HAIR. By GEORGE THOMAS JACKSON, M.D., Professor of Dermatology in the College of Physicians and Surgeons, Columbia University, and CHARLES WOOD McMURTRY, M.D., Instructor in Dermatology in the College of Physicians and Surgeons, New York. Octavo, 366 pages, with 109 illustrations and 10 colored plates. Lea & Febiger, Philadelphia and New York, 1912. Cloth, \$3.75.

The physician generally considers that the diseases of the scalp and hair are of but very little consequence,

therefore when a patient chances to consult them about losing their hair he receives but little advice and much less encouragement.

This book of Professor Jackson and Dr. McMurtry should do much in the education of the physician, for it tells them that it is not beneath the dignity of the profession for them to prescribe for diseased scalps or broken and falling hair. This book also should "put the doctor wise" to the fact that nearly all of the so-called hair restorers lauded by the barber are often worse than useless, and that the self-styled "Scalp Specialists" are the most arrant of quacks.

This treatise is the joint work of Professor George T. Jackson, who has for many years preached a propaganda for the saving of the hair, and Dr. Charles Wood McMurtry, a skilled laboratory worker.

The work shows the skill that each of the authors have in their own particular line.

Professor Jackson has written the practical part of the treatise, it being a revision of Jackson's Diseases of the Hair and Scalp, published by E. B. Treat in 1887.

Dr. McMurtry has taken up the laboratory and more scientific side of the question.

The rich experience of Professor Jackson makes those chapters that discuss the particular diseases and their treatment of inestimable value to the general practitioner, while those written by Dr. McMurtry gives to the trained dermatologist many new points and in addition most of the older and well-known ideas have been rehabilitated, as it were, so that if the dermatologist wants to keep up with the subject he must needs read those chapters and learn.

The reviewer regrets that space will not allow of an extended and detailed discussion of all of the instructive points, but after carefully reading the book and a knowledge of the painstaking care of the authors, the reviewer feels justified in emphatically stating that every general practitioner would be adding a great deal to his general medical knowledge if he would carefully read the book, and that the dermatologist could learn more from this particular work than he could from any previous one by other authors.

W.

VAGINAL CELIOTOMY. By S. WYLLIS BANDLER, M.D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Octavo of 450 pages, with 148 illustrations. Philadelphia and London. W. B. Saunders Company, 1911. Cloth, \$5.00, net; half morocco, \$6.50, net.

This book is the only one dealing extensively with the newest gynecological methods of operating for cystocele, prolapsus, and procidentia. For that reason it stands alone. The author, whose long and wide experience in anterior and posterior celiotomy stamps him as an authority in the East, says: "I have often wondered at its almost complete neglect by a very large share of the surgical and gynecological world." This statement is open to discussion in that it is only partly true. It would seem that the gynecologists have given their time, during the past decade, to mastering the technique of vaginal celiotomy and applying the newer operative procedures, in combination with vaginal celiotomy, to the relief of cystocele and uterine descensus. General surgeons are the ones who have neglected this new method. Thanks to Goffe and Bandler, of this country, the operation for these two conditions has changed in a most radical manner. Simple mucous denudation for cystocele is now obsolete. An operation for procidentia has become a major proposition, and the proportion of cures has increased. We, now, are fairly certain of success, where old measures meant, usually, failure or only temporary relief.

The book is profusely illustrated, each successive step of the operation being shown in a series of well-executed drawings. The author has also included in the reading matter valuable personal ideas of real worth to the reader, showing just how to meet each condition as it arises.

A few of the operations described in detail, with their technique, are *posterior vaginal celiotomy* for differential diagnosis, examination, loosening adhesions, removal of ovarian cysts, correction of displacements, drainage of pelvic abscesses, and as a step in vaginal hysterectomy. Anterior vaginal celiotomy for cystocele, vaginofixation, conservative operations, prolapsus (partial and total), simple vaginal hysterectomy, and ectopic gestation. In the latter, the author distinctly states that his personal opinion is that all ectopics, *except old hematocoles*, should be approached by the abdominal route, except such early cases as are not definitely diagnosed, or have no bleeding through tubal abortion or tubal rupture, or such as are operated on vaginally for diagnostic reasons and then are completed vaginally because of ease of execution. Gynecologists, however, seemed agreed that *in all cases* the route, par excellence, the safest, and the one which allows the most complete peritoneal toilet, is the abdominal. Vaginal celiotomy for ectopic, except as a diagnostic measure, has not many devotees today. The question, however, is a mooted one and one which depends to a large extent on the experience, finished surgical ability, and the personal equation of the operator.

Vaginal Cæsarian section alone, and also with the metreurynter incision, receives a special chapter of interest to obstetricians.

The book bridges a gap in gynecological text-books long deficient and will prove a valuable addition to any medical library.

CLARENCE R. HYDE.

PRIVATE DUTY NURSING. By KATHARINE DEWITT, R.N. Philadelphia and London: J. B. Lippincott Co., 1913. 244 pp., 12mo. Cloth.

This book on private duty nursing, in contradistinction to the hospital work of the nurse, should make a useful manual for graduate nurses who are working in homes instead of institutions. Since it is the private duty nurse by whom the profession is chiefly judged, any contribution ought to be welcomed by her which is calculated to supplement her equipment and broaden her personality. This book, with its large amount of valuable information and wise counsel, ought to be well received by the allied profession.

A. C. J.

HOW TO COLLECT A DOCTOR BILL. By FRANK P. DAVIS, M.D., Newark, N. J. Physicians' Drug News Co., 1913. 98 pp., 12mo. Cloth.

This little book appears to be made up of editorial matter which originally appeared in an eclectic medical journal in the Oklahoma district, together with the Statutes of Limitations and Exemption Laws of the various states, which latter take up about three-fifths of the book. There is nothing unusual in the author's suggestions except his advice to loan more money to people who already owe you money for professional services—slow pay patrons. This plan of investing savings he has found successful. Most of these people are always ready to borrow money and they can generally secure the lender, as by getting good men to sign their notes. The amount of a bill owed for professional services is included by Dr. Davis in a note. There are few who cannot give suitable security, and Dr. Davis recommends that these few should be turned over to the other doctor who is practicing for the "love and honor" of the profession, and whom the author "pities from the bottom of his heart." The doctor very truly says that "no man can succeed in practice, nor can he be considered a safe medical adviser, so long as he is handicapped by poverty, a worried mind, or poor health, or if he is compelled to dodge around corners to escape his creditors." But neither can the man who makes his practice a "business" and his office a counting room. Such a man is not apt to be deeply interested in scientific progress and ought really to leave the ranks of the profession arm in arm with his improvident brother.

The "success" that Dr. Davis alludes to we take to refer to the results of money lending. We fear that in the person of Dr. Davis another Russell Sage was lost to finance.
A. C. J.

DISEASES OF WOMEN. By THOMAS GEORGE STEVENS, M.D., B.S. (Lond.), F.R.C.S. (Eng.), M.R.C.P. (Lond.). Obstetric Surgeon, St. Mary's Hospital, Paddington; Gynecological Surgeon, Hospital for Women, Soho Square; Physician to In-patients, Queen Charlotte's Lying-in Hospital; Examiner to the Central Midwives' Board. 202 illustrations. Oxford University Press, 35 West 32d Street, New York.

In reviewing this excellent little book, it is interesting to note that English gynecology, as regards treatment especially corresponds closely to the best American thought. It has commonly been said that the English were hedged in by insular prejudices against adopting ideas dissimilar from their own, but a critical analysis of the reading matter contained in this book fails to substantiate the claim. So far as can be determined, whatever differences exist are present only in minor points, such as the use of the Fergusson speculum (almost obsolete in this country), and Sims' position for vaginal examinations, the author stating that it is easier for the vaginal finger to reach higher in the lateral position. We are pleased to note that the use of the sound as an aid in gynecological diagnosis is discouraged. The use of the term "Carneous Mole," with its description, symptoms and treatment, is new.

The author's statement that pregnancy and labor constitute the most important factors, etiologically, in the production of disease in women, might be challenged. Neisserian infection plays a most important role, in our opinion.

The reading matter is excellent, good plain type, easily read, and each chapter treated in an interesting manner. The author believes that gynecology must be presented on a pathological basis, and that when so presented the theoretical side of gynecology is no more difficult to acquire than that of medicine and surgery. Details which are of no practical importance are excluded. The book can be recommended as a thorough text-book for students and teachers. It is a practical work, full of common-sense ideas, with the text following closely the standard American thought, especially in operative technique, yet accurate and scientific in every detail. It is profusely illustrated with photomicrographs produced by a new method.

CLARENCE R. HYDE.

OBSTETRICS FOR NURSES. By JOSEPH B. DELEE, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (4th) edition. 12mo, of 508 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$2.50 net.

All who are interested in the teaching of obstetric nursing will welcome the new edition of this most useful, practical, concise and interesting volume. Furthermore, the book may be read with profit by any practitioner of obstetrics.

The author combines the essentials of the principles of obstetrics, and an exceedingly practical system of obstetric nursing, in an engaging text-book. The addition of the new illustrations and plates greatly enhance the value of the work as a teaching medium. There has been sufficient material added on the latest scientific discoveries, and the advances in obstetric surgery, to bring the subject entirely up to date.

The chapter on the infant's layette is to be particularly commended. The list of articles to be sterilized by the nurse seems a little too elaborate.

Dr. F. X. Wall's chapter on infant feeding is a lucid, succinct exposition of the subject. Not all, however, will agree with his preference to sterilize "certified milk."

O. P. HUMPHSTONE.

MANUAL OF MEDICINE. By A. S. WOODWARK, M.D., M.R.C.P. pp. 409. 1912. Oxford University Press, 35 West 32d Street, New York.

As Dr. Woodwark has avowed in his preface and as is borne out by the arrangement of his text, he endeavored to compress into some four hundred 8vo pages the entire subject of the diagnosis and treatment of internal diseases. His declared purpose is to supply a *vade mecum* for students and a convenient reference for practitioners. With this end in view he has the courage to add to the overflowing abundance of works on medicine what amounts to a syllabus of general medicine, for in his arrangement the doctor has compressed and pruned and summarized until the appearance of his articles suggests the arrangement of a box of sardines, and as sardines without bread and butter make an overrich diet, so compressed facts supply a type of reading matter almost as interesting as a dictionary. For this reason we may say of the book that it is an excellent, well-arranged and comprehensive syllabus for such as feel the need for one.

HENRY GOODWIN WEBSTER.

HYGIENE AND SANITATION. A Text-Book for Nurses. By GEORGE M. PRICE, M.D., Director, Joint Board of Sanitary Control; Director of Investigation, New York State Factory Commission. 18 mo, 236 pages. Cloth, \$1.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Dr. Price's distinguished services as a sanitarian and as a writer on public health topics have eminently qualified him for the authorship of such a text-book as the one before us. The work is intended to meet the needs of the nurse who is attempting to fit herself for her new rôle—priestess of prophylaxis. It is not upon the care of the sick, but upon hygiene, that the book lays stress. The principles of hygiene are laid down for school, factory, milk station, and social service nurses. Price has written a most excellent text-book for that new figure in the nursing world personified by that pioneer in public health nursing, Lillian D. Wald, to whom the book is dedicated—the nurse who has become an important factor in social, municipal, and in public health work. In view of the wonderful expansion of the functions of the trained nurse of late years, and the great broadening of her scope of usefulness which the last decade has witnessed, such a work may be said to fill a real need. There is a vast field for ambitious nurses which in no sense usurps that of the physician, but which is merely auxiliary to the latter. Price's book surveys this field and maps its limits. It should lead to a more intelligent understanding on the part of the nurse of her read sphere and the vastness and importance of it—and also on the part of some physicians who regard the expanding figure of the nurse with the same qualms that the English regard the Germans, and with about as little reason.

A. C. J.

DEATHS.

ALBERT T. BIRDSALL, M.D., Brooklyn, died September 24, 1913.

JOHN GREEN CURTIS, M.D., New York City, died September 20, 1913.

NATHAN JACOBSON, M.D., Syracuse, died September 16, 1913.

ROBERT EMORY MOORE, M.D., Brooklyn, died September 13, 1913.

JOHN R. STIVERS, M.D., Brooklyn, died September 18, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

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JOHN COWELL MAC EVITT, M.D., Editor

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EDITORIAL DEPARTMENT

THE VEXED QUESTION—LODGE PRACTICE.

THE following communication, the author of which has modestly requested that his name be withheld from publication, is submitted to the readers of the JOURNAL as well worthy of thoughtful perusal, as it clearly defines what may be accomplished under favorable circumstances by a community of medical practitioners united by a fraternal covenant:

John Cowell MacEvitt, M. D.,

*Editor New York State Journal of Medicine,
New York City.*

MY DEAR DOCTOR:

I was much interested in your article on Lodge Practice in the June issue of the NEW YORK STATE JOURNAL OF MEDICINE. Just a few lines to tell you what we have done in this city of 10,000 people and fourteen active practitioners of medicine. It may interest many other physicians and may act as an incentive for other localities to do likewise.

Lodge practice has been flourishing here for the past ten years up to January 1, 1913. There are local lodges of the Eagles, Moose and Owls. These are the three leaders in this evil. The writer was one of three physicians who did this contract work. We are all members of the county, state and national societies, and in addition are members of a local club composed of all the Port Jervis physicians and called the Port Jervis Medical Club. Lodge contract practice was fully discussed at several of our monthly meetings and declared by unanimous opinion to

be unethical and not only detrimental to all physicians, whether lodge physicians or not, but to the public as well. This led to the signing by each member of a resolution, agreeing to give up this practice at once and to refuse in the future to accept or do it under any terms whatsoever. Furthermore, we all agreed that if the three lodges united and imported a physician from elsewhere to come here, which they threatened to do, and do this work (which contracts would insure a fixed income of over twelve hundred dollars a year, quite a nest egg to start with), we would all refuse to consult with him or assist him in any way or in any emergency whatever. In other words, none of us would have anything to do with any patient until this physician had been discharged. No lodge practice has been done here since January, 1913, and I am sure there will be none. The lodges are losing members and will undoubtedly be forced to surrender their charters, because the *free* physician was the chief incentive to induce men to join.

In my own case I still continue to treat many of the lodge families at regular fees and so am money ahead at the end of the month and have a clear conscience as to medical ethics as well. The other two men say their experience is the same, so we are all satisfied.

The argument you advance, that the lodge practice assists the poor beginner in getting a foothold, I consider very wrong. Let the young man, endowed with reasonable knowledge of his work, be energetic and honorable and attend

strictly to his practice and he is bound to succeed.

I trust you will find space in your valuable JOURNAL for these few crude thoughts and facts, and perhaps they may help some other locality struggling with the same proposition.

Most respectfully yours,

The writer tells his story well, but is in error when he states that we advanced the argument "that lodge practice assists the poor beginner to obtain a foothold." It was a contention offered by a lodge doctor in extenuation of lodge practice when seeking membership in a county society. What the Port Jervis physicians accomplished in respect to lodge practice is an ideal condition, a real living embodiment of medical fraternity beneficial to the community—beneficial and honorable to them as its servants. And yet, let us impartially admit that in smaller communities there does not exist that dire poverty inseparable from metropolitan centers. Lodges of the character mentioned in the letter are composed of members fairly prosperous in industrial pursuits who unite for social enjoyment, mutual assistance, life insurance and secondarily, medical attendance for the benefit of members who desire to avail themselves of its advantage. It is well known that at least 50 per cent. of the members of these societies retain their family medical attendants.

A different class of lodges or societies are those composed of the large foreign element who colonize in the poorest quarters of the city where rental and food are cheaper and less wholesome, and in consequence sickness more prevalent. It is this class which find the expense of employing a physician and purchasing medicines beyond their means and who combine primarily for medical and life insurance. We cannot escape from the fact that these poor people are not able to pay the most modest fee where continuous treatment is necessary. Provident or improvident they are unable to accumulate economies to meet untoward expense. We can thus see that it is actual want that drives them to the hospitals and dispensaries. Granted that many unworthy individuals take advantage of free treatment, would we not be wanting in the higher instincts of humanity to deny on that account aid to the worthy applicants?

Would we who are blessed with material needs find it a great sacrifice to deprive ourselves of

life's luxuries to be of assistance to our less fortunate brothers? When sickness enters the home of the poor, who is there to give them succor, who is to respond to their midnight calls but these lodge doctors? It is true their is no charity so great as that found in our profession, but its individual members cannot give all their time and substance to charity, as they must give heed to that charity which begins at home.

En passant we are led to remark that we have knowledge of a body of practitioners living in a manufacturing center who united in the same manner and for the same purpose, but whose efforts met with failure in the loss of all save honor and self-respect. When their repudiation of lodge practice and their resignations from the societies became known, physicians from neighboring towns rushed in to fill the vacated positions. One of the physicians who resigned said: "The fellows who took our places seem to care little for our ban of ostracism, and find no difficulty in securing consultants when desired. In the light of the tolerant view now taken by the profession in general, we feel that we made a vicarious sacrifice in behalf of ethics." We are inclined to agree with him, for though consciousness of rectitude appeals to one's self-pride, it possesses poor hunger allaying qualities. The JOURNAL, owing to the complex character of the question, is content to be an impartial observer, not but what it has well-defined ideas on the subject, but as the object of the NEW YORK STATE JOURNAL OF MEDICINE is to express the policies of the State Society and not any individual's opinion, and as the State Society is formed of constituent bodies, and as each constituent body for want of an ethical rule to guide its actions can make its own laws in relation to lodge practice, and as there will be diversity of rulings by the different county societies, we do not feel justified in sustaining one or opposing another in their individual decisions. District branches and local societies under the present status are justified, we believe, in adopting rules in conformity to their environments.

The Port Jervis idea is most commendable and worthy of imitation when possible, and can be adopted irrespective of any society affiliation or by-law. To large cities it is scarcely applicable owing to the lack of union and want of harmony among the thousands of individual members of the profession, for lodge practice has been of such insidious growth, fertilized by economical

and revolutionary changes; its roots have penetrated so deeply that their dislodgment might do more harm than good. After all is said, the present English law of medical insurance which is closely allied to lodge practice is seemingly working well. Acceptance is voluntary on the part of the practitioner. The compensation, though inadequate, is equalized—its most gratifying feature, the certainty of payment for the services rendered.

The Judicial Council of the American Medical Association stated its belief: "That the remedy for these evils resided in the county societies and that these societies should use their influence and powers not to condemn the physician who must take the contract; not to ostracise him, but to prevent under-bidding for these contracts below what would give a fair reward for medical services." Theorizing is a delightful method of solving our problems in the abstract, but how to difficult to realize.

If the State or constituent societies had punitive power over the members of the profession within their geographical limits, the exercise of this power would undoubtedly control the action of its members, but it is probably true, not having any exact data on the subject and basing our belief upon the knowledge of three of the largest county societies in the State, this membership is less than one-half of the whole number of physician registered. The despotic use of power for good could be exercised, but in restraining members of a society from performing lodge work at an equivalent valuation, with non-members, the latter of course would reap benefit. Viewing the question in all its phases, studying the general good without pusillanimity or arbitrariness, the Judicial Council of the American Medical Association through its chairman, Dr. Alexander Lambert, presented the following resolution to the House of Delegates at its meeting held at Minneapolis, June, 1913.

"Resolved, that the House of Delegates of the A. M. A. recommends to each constituent body that it endeavor through the powers of its various county societies to reform the various abuses of lodge practice in their respective communities in order that the lodges may give an adequate service to the members and an honorable remuneration to the medical men."

To the resolution we respectfully bow; to the Port Jervis Medical Club we doff our hat in acknowledgement of the courage exhibited in the expression of its convictions.

"THE DOCTOR COMEDIAN."

THE following excerpts are taken from the New York Times of August 7th, 1913: "One evening a masquerade ball was in progress on board a trans-Atlantic liner when Dr. Blank rushed forward. Stop the music! Doctor Nemo has been taken seriously ill and an operation may be necessary. Instantly the music stopped and the dancers went slowly and with hushed steps to the dining-room, where the patient lay white-faced and groaning heavily. Fifteen medical men stood round the sufferer. Two of the surgeons dressed in operating clothes, gloved hands, and muffled faces, dipped their instruments in antiseptic solutions. With a quick hand the practical operator made an incision. Men held their breath and women gasped. The surgeon's hand came out. The awed spectators gradually became aware that he held in his hand an enormous ham. But it was only when the patient sat up and in deep tones demanded a glass of beer that the semi-hysterical onlookers realized that they had been hoaxed."

Versatility is an enviable mental endowment, but it is questionable whether innate refinement, which implies a reverence for that which is sacred, and buffoonery can exist in the same individual. The exhibition of the latter negatives the existence of the former. Fatty-brained humorists and trophic-brained comedians can be forgiven when they take as a motive, to create laughter, that which is consecrated by others. But when a doctor of medicine submits the profession which sustains him to the gibes and laughter of a heterogeneous audience, his fatuous idea of humor arouses a feeling of contemptuous resentment in those of his associates who have the honor and dignity of their calling at heart.

We wonder if the doctors referred to, in their deliberation over the hoax they contemplated playing, for an instant stopped to consider the harm it might produce. Did they realize the execrable farce they were about to portray could awaken in the breasts of their audience moments of tense anxiety and memories of never-to-be-forgotten tragedies, whose environments in a hospital were about to be burlesqued? Did they reflect on the cruelty of converting the innocent merriment of the passengers into sympathy and sorrow for an unfortunate companion?

We are criticised and ridiculed by the thoughtless, but when we ourselves wallow in the mire of asininity what right have we to complain?

Why not let the disciples of Momus render tribute unto Momus and the disciples of Æsculapius render tribute unto Æsculapius?

Original Articles

THE PRESENT OBLIGATIONS OF PHYSICIANS REGARDING SYPHILIS, BOTH AS TO PATIENTS AND PUBLIC.*

By E. WOOD RUGGLES, M.D.,
ROCHESTER, N. Y.

THE advance in our knowledge regarding syphilis during the past eight years has been greater than that during the whole history of medicine. What had been learned previous to that time was purely empirical, at least outside of the pathology of the disease. Whether the disease existed at all prior to 1493 is problematic. It is certain that, beginning at that time, in both armies, at the siege of Naples, it spread rapidly over Europe as a plague, and that until the whole world was syphilized it had a high death rate. The fact that the inhabitants of Europe were at that time so sensitive to the disease, while at present they are more or less immunized, so that, even without treatment, malignant cases are quite rare, seems to prove that if the disease existed before that time it was pretty well localized, perhaps confined to certain isolated races like the ancient Peruvians.

Soon after this outbreak it began to be recognized that mercury was the sovereign remedy against the disease. This discovery was undoubtedly accidental, resulting from the trial of numerous remedies. Considerably later, 1832, it was found that iodide of potash was also a valuable remedy, being very effective in combating the later and more frightful symptoms of the disease. It was subsequently determined, however, that it has no curative action upon the disease itself. It removes the evidences of the malady, it relieves symptoms, but it has no effect in preventing future trouble. Mercury and, in very recent times, arsenic have proved to be the only curative drugs.

The knowledge of these facts, however, has never been shared by the whole profession. The circumstance that the most frightful symptoms, particularly of the tertiary period, which is the most picturesque in the whole course of syphilis, often yield almost magically to treatment with the iodides, in cases in which improvement upon the use of mercury alone is either very gradual or entirely absent, has led a great many physicians to consider iodine as specific for the cure of the disease; whereas, in point of fact, it is merely a symptom remedy. Its only possible assistance in eliminating the disease is in liberating encapsulated spirochætae so that they can be attacked by specific medication and even this action is not conclusively proven.

A large proportion of physicians have, however, employed the iodides almost exclusively, particularly in cases in which they were unable, without giving themselves too much trouble, to give the patient mercury in any form which he could take with impunity. Many of the worst cases of tertiary syphilis and of parasyphilitic diseases have been occasioned by this ignorance regarding the proper relation of these two remedies.

These facts, together with a knowledge of the symptoms and the pathology of syphilis, were all that was known concerning it until Leroux and Metchnikoff succeeded in inoculating apes with the disease in 1905. Later in the same year, Schaudin (assisted by Hoffmann) discovered at the German Imperial Health Bureau a spirillum which he termed the *spirochæta pallida*, on account of its feeble staining properties. Numerous observers had previously believed they had discovered the germ of syphilis, but their deductions proved to be falsely founded. This organism, which probably is a protozoon rather than a bacterium, appeared constantly in untreated chancres, mucous patches and condylomata lata and it was found, although with much greater difficulty, in skin lesions and also in the blood during the florid stage. Syphilitic fœtuses swarm with these organisms.

Their etiologic relationship to syphilis has been proven, since they fulfil all the laws of Koch. They exist in all syphilitic lesions, they can be grown in culture media for several generations, and syphilis in apes has been produced by the inoculation of these cultures (Noguchi). This discovery has revolutionized not only the study but the treatment of syphilis, for without the knowledge that the etiologic organism of syphilis belongs to the same family as that of sleeping sickness, it is not likely that Ehrlich would have applied his arsenical compounds to the treatment of this disease.

The staining and discovery of this organism in tissue sections is possible, although quite difficult, except for the trained pathologist. It can be stained in smears made from serum obtained by curetting untreated chancres, mucous patches, condylomata and the moist lesions of syphilis, by the use of one of several methods, of which the India ink is the simplest. Its staining qualities are, however, very feeble and it is often difficult to find a single spirochæta in the same serum which has presented numerous specimens when examined by the dark field method.

The early diagnosis of syphilis through the use of this instrument is one of the points upon which I wish to lay particular stress. By its use the spirochætae can be found often as early as the second day after the discovery of a chancre and this is of tremendous importance as regards the prognosis. The acquisi-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

tion of the proper technique should be easy for anyone trained in microscopy and after once becoming accustomed to the perfectly regular form, incessant movements and other characteristics of the pallida, he should have no trouble in its differentiation from other spirilla. Occasionally it cannot be found in specific lesions and strangely enough cannot be demonstrated in eight or ten per cent. of syphilitic chancres.

A teaching which syphilologists have endeavored to impress upon the profession at large for years, is that under no circumstances should a chancre of any description be treated with nitrate of silver until a diagnosis is made, since under this treatment every soft chancre becomes hard and diagnosis is often obscured.

In view of the present knowledge regarding the etiology of syphilis, no such lesion should be touched with any germicide whatever until after a search for the spirochætæ has been made. These fragile organisms are killed locally and superficially with the utmost ease. If one finds no spirochætæ in a lesion thus treated and which he regards as suspicious, he should let it alone for a few days when they, if present, will probably reappear. If not, a Wassermann, made one month after the appearance of the chancre will probably throw light upon the case.

Next in importance, but less reliable, particularly in a negative sense, than the dark-field method, is the Wassermann test, which was discovered by A. Wassermann in 1906. Its object is to determine the presence of syphilitic antibodies in the blood, that is, substances which the organism evolves for the purpose of combating the syphilitic virus. For some reason not well understood several other diseases presenting apparently no analogy with syphilis give a positive reaction when tested in this manner. These are scarletina, pellagra, leprosy, yaws and one or two other tropical diseases. In the absence of these diseases and when made by a competent and careful pathologist, a positive diagnosis may be regarded as final.

A negative reaction, however, cannot be fully relied upon, since it is present in about fifteen per cent. of cases where syphilis certainly exists. The two best ascertained causes for this error are contradictory in nature. In some extremely malignant cases the system is so overwhelmed with the disease that it makes no recognizable effort to generate these antibodies. On the other hand, in tertiary syphilis, the active lesions frequently contain so few spirochetæ that antibodies are not generated in appreciable quantities. The ulceration and loss of tissue in these cases is caused by the depression of the tissues rather than by the virulence of the attack. A third probable source of error consists in the encapsulation, at least temporarily, of practically all the

spirochætæ, so that neither they nor their products are in contact with the circulation.

Unfortunately the intricate technique and the difficulty of obtaining syphilitic liver, guinea pig's blood and sheep's blood deter many experienced, but indolent pathologists from performing this test. To these the Noguchi method appeals on account of its comparative simplicity, but it is regarded by the best observers as not having the same accuracy in its results.

As regards the comparative value of the darkfield and Wassermann tests, it must not be forgotten that they are supplementary to each other. In point both of accuracy and of importance to the future of the patient, a positive Wassermann does not compare with the finding of the spirochætæ by the darkfield method. The antibodies are not present during the first week to two weeks of the primary lesion and the test cannot be fully depended upon till the end of the first month.

By the use of the darkfield method the spirochætæ are nearly always discoverable in the primary lesion on the second to the fourth day; to the trained eye they are absolutely unmistakable (except in the case of a mouth lesion where it is claimed they might be confused with the spirochætæ dentium) and thus we are enabled in the majority of these cases to diagnose and cure syphilis almost at its inception.

Dr. Wende, of Buffalo, gave me recently the details of a case in which he administered salvarsan only once, one week after the appearance of the chancre, two years and eight months ago. Spirochætæ had been found in the chancre. A Wassermann has been made every three months since that time and each one has been negative. Both he and I have a number of such cases but none in which the result has been so frequently controlled.

I hold therefore that every city and county pathological laboratory should be supplied with a darkfield apparatus and the pathologist be trained in its use, in order that physicians may send every patient with a genital sore or suspicious mouth lesions there for immediate examination, if such patient cannot afford to be sent for consultation. Every physician owning a microscope with an oil immersion lens should add this valuable aid to his armamentarium and become expert in its use.

On the other hand the Wassermann test is of enormous value in cases in which no spirochætæ can be found and clinical symptoms are either absent or indefinite—the so-called latent syphilis. Although those cases present no threatening features and the patients seem perfectly well, it should not be forgotten that tertiary symptoms may manifest themselves at any moment and that the parasyphilitic nervous disorders, paresis and tabes occur, as a rule, in those whose history has been char-

acterized by a mild invasion and subsequent symptoms.

One point which must be carefully considered before accepting the result of either the Wassermann or the Noguchi test, is whether the patient has taken mercury in any form within several weeks preceding. At least eight weeks must have passed in order to get a reliable test. One of my patients, a young woman, gave a negative Wassermann test four and one-half weeks after she finished taking mercury internally from another physician; while two months later she gave a triple plus reaction according to the same pathologist. After the use of salvarsan the test is reliable in about four weeks. Iodide of potash changes the reaction in some patients.

In spite of these discrepancies, however, the fact that we have a blood test which even approaches accuracy is of tremendous importance. In the past we had absolutely no criterion as to cure except our own judgment that the proper amount of mercury had been consumed during two or three years, and the fact that the patient had remained free from symptoms for a comparatively long time. That we were in error and that most of the patients, however well treated, still harbored latent syphilis, is proved by the fact that reinfection with syphilis was so very rare.

Since the advent of salvarsan treatment, cases of reinfection have occurred so frequently that they have almost lost their novelty. This disposes of the old theory that syphilis confers immunity—the patients simply were not cured. At present, if a patient gives three or four negative Wassermann's at an extreme limit of one or one and one-half years, we believe that he may be regarded as almost certainly rid of the disease and that his advent upon the sea of matrimony is sufficiently free of risks that it may be counseled without too great temerity.

With all these discoveries concerning the etiology, diagnosis and prognosis of syphilis, we had already learned more in five years than had all previous generations, but the end was not yet. In 1909 Prof. Ehrlich announced that while experimenting upon a cure for sleeping sickness he had discovered an arsenic compound which was capable of destroying, by the use of one dose, all the spirochætæ in the human system without harm to the organism, and Alt, in March, 1910, reported twenty-seven cases of florid syphilis which he had treated since January 31st with brilliant success. Unfortunately this enthusiastic statement proved over-confident and we learned again that there is no such thing in medicine as "two plus two equals four." However, this remedy is a tremendous advance in the therapy of this plague. To be sure some cases, a few very early ones, have been treated repeatedly, even seven or eight times with salvarsan without

completely eradicating the disease, but the majority, particularly of early cases, can be cured in a comparatively short time by this treatment.

However, whether 606 cures syphilis for all time or not, it does at least, in a large majority of cases, sterilize the individual externally and make him harmless both to his family and the public at large. For a physician who is aware of this fact to deliberately withhold this boon, even if a negative one, from mankind is to prove himself recreant to the noble traditions of his profession, which is continually striving to prevent disease and thus render itself unnecessary.

The State legislatures should be induced to pass laws making the treatment of every known case of syphilis by salvarsan obligatory, particularly in the case of prostitutes, since they are the principal disseminators of the disease. Such laws, rigidly enforced, would reduce the present number of cases to a tenth, since these persons would as a rule be immediately rendered incapable of transmitting the disease. Such laws have been recently enacted by the Vermont legislature and signed by the Governor.

Regarding the physician's obligation to his patient. If he has been so conscientious as to examine, or have examined, a genital sore and find specific spirochætæ before the appearance of secondaries, surely on no possible grounds will he withhold from that patient a supposedly adequate and immediate treatment, not merely with mercury in the form of injections or inunctions; but with salvarsan as well.

How can he refrain,—knowing that in about three months fifty per cent or more of these cases can be cured and practically all the others be saved the distressing secondary symptoms?

How can he subject such a patient to two or three years of mercurial treatment with the certainty of mucous syphilides and their risk of contagion and the chance of other symptoms, realizing the probability is that a Wassermann test, made long enough later to be uninfluenced by the treatment, will show that the disease is still present and far less susceptible of cure than at its inception.

The same reasoning applies, though less forcibly, to the early secondary stage as most of these cases can be cured by receiving more salvarsan and a longer treatment with mercury, intermitting an occasional period long enough to make a blood test and resuming treatment if this proves positive.

One of the most urgent reasons for the early diagnosis and treatment of syphilis is afforded by a study of the pathological changes produced by the disease. Immediately upon their implantation in any tissue the spirochætæ begin to attack the blood vessels, causing an endarteritis and consequent obliteration of their

lumen. Now the disease must be attacked and the spirochæta destroyed through the blood stream. It requires little thought to realize that the longer the disease is allowed to progress before active treatment is begun, the more numerous and greater will be the areas in which the larger blood vessels are partially, and the small ones totally, obliterated. This being the case, it will be readily seen that spirochæticide remedies will be able to reach these tissues only with great difficulty—perhaps not at all.

A physician who is at all in touch with modern medicine would consider it criminal to delay operation in a case of appendicitis which he was convinced demanded its immediate performance—why should it be regarded as less worthy of opprobrium to delay attack upon a disease so terrible in character as syphilis, which, as it advances, is burning its bridges behind it and making itself more and more inaccessible?

I venture the prediction that in ten years, it will not be considered justifiable or professional to treat syphilis without the use of salvarsan or one of its successors. Of course the same practitioners who are now asleep regarding appendicitis and gall bladder trouble and who delay operation till it is too late, will then be still administering a quarter or half grain of protoidide t. i. d.

Another obligation is in regard to the so-called "malignant cases." As I pointed out in a previous paper (*N. Y. Medical Journal*, Feb. 28, 1913), many of these cases are not really malignant but the physician has failed to find the proper treatment, having generally used mercury only internally or too little of it, and they will respond to judicious management. However, most of these cases yield to salvarsan so much more rapidly and with so much less loss of tissue than they do to mercury alone, that it seems a pity to withhold it, while a good many, which are absolutely rebellious to mercury and the iodides, heal magically, even after but one injection of salvarsan.

In very early tabes there have occurred many results so encouraging as to warrant the administration of salvarsan in every such case and Leredde of Paris, has achieved several symptomatic cures in fairly well advanced cases and restored the Wassermann to permanent negative in one of these.

In the atypical forms of brain and nerve syphilis such results are very frequent, the pathological changes and the symptoms being due to pressure or starvation effects and not to degeneration into connective tissue.

Another obligation which the recent progress in the knowledge of syphilis lays upon the general practitioner is that of its exclusion in differential diagnosis. The old adage "When in doubt try mercury and iodides" hinted at

the necessity for a discriminating skepticism, but with the advent of recent methods this advice must be regarded as obsolete and more exact knowledge should be sought.

The Wassermann test will clear up a good many difficult cases. In continued fever of which the etiology is obscure, do not be too ready to attribute it to tuberculosis, rheumatism, typhoid or malaria. In heart disease and particularly in aortic lesions bear syphilis in mind; nearly every case of aortic aneurism and eighty-five per cent. of all aortic valvular diseases are syphilitic in origin and most of these cases can be favorably influenced and many cured by salvarsan treatment. One of my cases had an aortic murmur so loud that it could be heard plainly, without a stethoscope, with the ear two inches from the chest wall. This heart lesion has nearly cleared up under salvarsan. Another patient, four months after infection, besides a pustular cutaneous syphilide, presented loud blowing mitral and aortic murmurs, and was greatly prostrated and emaciated. After three salvarsan treatments these murmurs could no longer be found, and the patient had recovered his strength and weight.

Be distrustful of the diagnosis of heart failure or angina pectoris in otherwise healthy persons. Osler states that the presence of heart failure in a young or middle aged person with no history of rheumatic fever should lead one to suspect syphilis.

It should not be forgotten that there is such a disease as syphilitic phthisis characterized by cough, expectoration, afternoon temperature, night sweats and loss of weight. I had one such case which recovered perfectly under specific treatment.

Urinary symptoms perfectly simulating Bright's disease are not infrequent. I had one patient whose urine contained casts and almost completely solidified upon boiling. After three salvarsan treatments it became normal and has thus remained.

Unless absolutely certain of their ground surgeons should employ the Wassermann test before operating on tumors of the skin and bones.

Neisser lays great stress upon our obligation to employ the Wassermann test frequently as an aid to diagnosis and remarks that if the reaction is positive we should at once institute specific treatment, not merely to cure the symptoms from which the patients are suffering, but to guard against parasymphilitic diseases such as tabes and paresis.

Now all that has preceded I regard as a text for a sermonette which I wish to preach and I crave your indulgence if I put the case too frankly. Physicians as a class are altruistic. They cheerfully seek that which no other profession or trade has ever done, to make their employment unnecessary by de-

creasing the amount of disease in the world through the teaching of prophylaxis, hygiene, sanitary methods, protesting against contaminated water supplies, etc., etc.

Yet the physician must live from his profession and, without malice on his part, there is nevertheless, a certain gratification when he is called to treat a chronic case such as one of typhoid fever which promises to be remunerative. This same feeling has obtained in the past with regard to syphilis. Treatment, to be at all effective, had to be carried on two or three years and if the patient did not wander away, was remunerative to the physician.

I desire, however, to arouse a new morality in regard to our attitude toward this disease. In the presence of such a scourge as this, if we can do anything to lessen its consequences for the unfortunate victim and diminish the chances of his communicating the same pestilence to others, we should forget all selfish, pecuniary motives and do our utmost for a swift and sure eradication of the disease.

In my opinion it is absolutely dishonest to the patient for a physician to let a suspicious genital sore remain a single week without taking advantage of the darkfield method and making an early diagnosis if possible. The probability of early and complete eradication of the disease is enormously greater during the first few days after the appearance of a chancre than later, and this favorable season remains, with slightly decreased chances, until the appearance of the secondaries. Therefore, even when spirochætæ are not demonstrable, if the lesion is manifestly suspicious, a Wassermann test should be made one month from its first appearance and, if positive, modern treatment should be immediately instituted, thus forestalling the secondaries if possible.

If secondaries have once appeared the course of treatment must be longer and more thorough and the outlook for a cure though good, is less favorable. In the second year of the secondary period the outlook is decidedly worse and in the tertiary period it is extremely difficult to obtain a negative reaction. Even this is not a guarantee that the disease is permanently arrested as encapsulated spirochætæ may still remain.

In addition to this fact it should be borne in mind that the contagiousness of syphilis is on the average obliterated by the use of two or three injections of salvarsan. The chancre disappears in a few days, as a rule, and mouth and moist genital lesions following its use are very infrequent. Now these are the sources by which at least nine-tenths of syphilis is acquired. In fact, in my opinion, the most positive proofs of the superiority of salvarsan over mercury in the treatment of syphilis are, the numerous cases of early reinfection and

this freedom from mucous plaques, with the rare occurrence of other secondaries. In my own practice even after I had given up internal mercurial treatment and was using only intramuscular or inunction treatment, practically every case would present some mouth or throat lesions during the first year, some quite frequently, so that every week there were several mouths to be treated. At present in spite of having a greatly increased number of syphilitic cases under treatment, I see absolutely no mucous patches, except in patients sent for consultation who have not received salvarsan.

This paper has been prepared with the twofold purpose of stimulating the interest of the profession regarding the eradication of a terrible disease and of presenting the rights of a class of sufferers who are not more vile or more sinful than their neighbors, but simply more unfortunate.

PAIN AND OTHER CLINICAL MANIFESTATIONS OF MYOCARDITIS.*

By ALEXANDER LAMBERT, M.D.,

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ONE frequently hears stated that it is only at the post-mortem examination that myocarditis can be accurately diagnosed. This idea seems to be the remnant of the old ideas that when the lesions in the valves had been accurately estimated that was all there was to do in considering cardiac disease. Of course the graphic methods of registering the occurrences in the cardiac cycle, which have developed so enormously in the last ten years, have very greatly altered the point of view of the profession. But there still remains the idea that outside of these special instruments of precision it is not possible to have an accurate estimate of the condition of the heart muscle.

For the fine differential diagnosis of some morbid conditions these instruments are necessary, but it is equally true that even with these instruments the kind of degeneration that is present in the heart muscle does not appear and we still must fall back on the clinical observations of the different forms of myocardial degeneration that are most likely to occur with certain of the general diseases and to estimate from other signs and symptoms than the graphic method what is the form of myocarditis present. There is no question that there seems to be a muscular note and the valvular notes in the sounds of the heart as heard in the stethoscope. The slappy valvular sound, with the muscle note much dimin-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

ished, is familiar to us all as representing a dilated heart. The full rounded, low toned muscular note with sharp, clear-cut valvular sounds we recognize as occurring with a hypertrophied heart. It has long seemed to me that other varying changes of tone in the muscle note could be distinctly made out and occurred with sufficient regularity in certain myocardial degenerations that when these notes were present the converse was true and it was justifiable to suppose that certain myocardial degenerations were then present. This has been proved and borne out by post-mortem findings. For instance, the fibroid heart is a silent one with a weak muscular tone. A strong normal heart is often a very quiet one, but the age of the patient and the other symptoms and conditions that are present will hardly permit these two conditions to be mistaken for each other.

The heart with fatty degenerations in its muscles often has a good muscle tone, but it is fuller and lower toned than normal. Brown atrophy of the heart, which is of vastly more practical importance than has been credited it in pathology, causes the heart sounds to take the foetal heart type with the two sounds, about equally distant apart and of about equal value—although the first sound may still retain enough of the muscle note in it to be the louder.

There is another sound heard with the stethoscope which is very characteristic of cardiac muscular degeneration, and that is the galloping rhythm. It was long ago recognized as occurring in those cases of chronic nephritis with high tension at the time when the circulation begins to break down and the heart to break under the strain. It was also recognized as occurring after severe infectious diseases as typhus, typhoid, smallpox and pneumonia and as a warning of evil import in diphtheria. The exact condition which produces it is unknown, but it is evidently a sign of myocardial degeneration as it occurs in the chronic conditions of nephritis and the acute conditions of diphtheria. It is one of the very first signs in rheumatic fever, when the cardiac muscle is involved and may be heard in these cases as the endocarditis begins and the valvular sounds change to murmurs, or it may be heard where the valves are not involved at all as showing that there is a rheumatic carditis which will cause future trouble to that heart. It is not infrequently in rheumatic fever heard only for a few days and then may cease, or it may continue for a long period.

Shortness of wind, that is, the early dyspnoea of exertion, is one of the early signs of myocardial degeneration. The patient complains that his wind is not as good as it used to be, that a slight up-grade begins to make him short of breath, that going against the wind is uncomfortable, and he wonders why it is that he gets such a pain in his side. These are the usual subjective symptoms that are first noticed and

they are among the early signs that the heart has lost its reserve force to accommodate itself to a little more than its usual exertion.

It has been my belief for a number of years that cardiac pain was a much earlier symptom in cardiac diseases than is generally believed. My experience is that the majority of physicians do not pay much attention to precordial pain unless it radiates down the left arm, then they believe it is due to some form of angina, and if a patient does not have attacks of breathlessness or does not drop down with it, they are prone to call it pseudoangina, especially if it occurs in women. Most men also are not willing to call anything angina unless it has the impending fear of death connecting with its occurrences, but they believe that all other pains occurring in the heart are false angina unless the fear of death comes with it. It may be well for certain reasons to limit the name of angina pectoris to only the very serious cases of cardiac pain and in which the attacks are so severe that death may occur at any time, but it would seem to me that it is vastly better to recognize that cardiac pain occurs with various degrees of intensity and that we may have pain in the heart of slight intensity without fear of impending death and as an early symptom of myocardial changes. These pains which occur on the chest wall or on the arm and on the chest, though we may consider them as reflex or referred pains, are of cardiac origin, should be considered as such and should be treated as such.

MacKenzie has done a great service in calling attention so accurately to the fact that the heart has no nerves or means of expressing pain in the muscular wall itself and the nerves of the heart cannot produce the sensation of pain. Vibrations radiating from the heart can, however, through whatever nerves they go, reach the segments of the spinal cord and radiate out, causing vibrations, so that the expression of pain occurs out in the nerves of the skin where we are in the habit of feeling that sensation. MacKenzie has shown that some cardiac pain is referred to the area supplied by the second and third cervical segments, whose fibers, along with some from the spinal accessory, run down to the heart through the vagus. This would account for the occipital headaches and tenderness of the sternocleidomastoid and trapezius muscles which are sometimes present. The distribution of the pain and hyperæsthesia, according to Head, bears a close relation to the chamber of the heart most affected, and particularly to the somatic segment of the embryo to which it corresponds; the auricles being supplied by the fifth, sixth, seventh and eighth thoracic segments and referring their pain to the lower axilla and shoulder blades, the ventricles in the second, third, fourth, fifth and sixth thoracic segments referring their pain to the chest wall from the second to the seventh rib, from the ulna surface of the forearm to the wrist and the inner aspect of the upper arm;

the ascending aorta being supplied from the third and fourth cervical segments and first thoracic, giving tenderness in the neck of the sternomastoid and trapezius muscles, and tenderness and pain at the back of the neck and in the skin down to the collar bone. Pain, therefore, from whatever cause starting in the heart, goes by whatever channel to some segment from the third or fourth cervical, skipping the fifth, sixth, seventh and eighth cervical, again reappearing in the first thoracic down to the eighth. The intensity of the beginning disturbing impulse probably has something to do with the extent of distribution into the nerves of the corresponding segment. If the impulse is sufficiently strong, not only is it expressed as pain, but it is further expressed as hyperæsthesia in the skin and areas of hyperalgesia. It may further excite the motor nerves of that segment and produce the terrific vice-like sensation and cramp-like spasm of rigidity with which the thoracic muscles hold the chest walls, as in a vice, in some of the severe anginal attacks. The counterpart of this muscular reflex is familiar to you all in the abdominal rigidity in visceral lesions and visceral pain from the abdominal viscera.

We have long recognized that pain down the arm was due to a referred cardiac pain. But it is the failure to have recognized the extensive area in which pain from the heart occurs that has made so many mistakes possible in considering what cardiac pain was. It seems to me that the most frequent position of pain is some position between the fourth and sixth rib over the pectoral muscle near the nipple. This area is one in which there is frequent tenderness, but frequently the hypersensitiveness of the skin and the hyperalgesia remain for a day or two after the actual pain has ceased. It is not uncommon to see pain in the left wrist treated as gout or rheumatism, which, in reality, is the first expression of myocarditis. It is my belief that various pains of moderate degree coming from the heart are so common on the left side of the chest and in the left arm in the areas that I have designated, that the wisest method of thought, when in the presence of pains in these areas, is to realize that the only safe method is to start with the supposition that such pains are most probably cardiac and proceed to exclude other possible diagnoses, and not exclude cardiac pain and wonder what the diagnosis is, which heretofore has been the usual method of procedure.

It is a very striking thing to see the number of alcoholics after a debauch who will complain of an intense aching pain in the precordial region. It is not the old alcoholic in whom one would expect aortic arteriosclerosis and coronary disease and a naturally starved cardiac muscle, but it is in the rugged, vigorous, young-looking alcoholic that these pains are most commonly complained of, as if the poisoning of the alcohol and the overexertion committed in the spree had

produced an aching pain from the degenerated muscle. It is a very striking feature in syphilitic myocarditis and in syphilitic aortitis to see how common are these pains and how quickly these pains will cease following a small dose of salvan. It is interesting also to compare the occurrence of pain with the different endocardial murmurs that may be present. Pain is less common with mitral regurgitation than with mitral stenosis and this is so because mitral stenosis is accompanied with subacute or chronic progressive rheumatic inflammation of muscles surrounding the ariculoventricular opening and the lesion is in consequence a progressive one and the injury to the muscle is also progressive and it follows those cases of rheumatism in which there has been a carditis as well as an endocarditis. Hence it naturally follows that the muscle shows its injury in its painful expressions. Of course many rheumatic cases of aortic lesions, either double or single, go on for long years without many disturbing symptoms of their cardiac condition. Because rheumatic injuries to the valves are like scars that have healed and the morbid processes ceased and there is no further degeneration, but the degenerative lesions of later life from many causes producing atheroma and arteriosclerosis bring about an increasing degenerative change at the aortic ring, and the opening of the coronary arteries as well as the aortic cusps are usually involved together. Hence the coronary arteries themselves are apt to show the same lesions of degeneration and the muscle of the heart suffers in consequence of either being starved by the lack of blood that can get to it or being poisoned and showing active muscular degeneration. The coronary and aortic lesions are the ones which to most of our minds are accompanied with severe pains of angina pectoris and with it the sudden death which, in the lay mind, usually occurs in all forms of heart disease. But even these pains may vary in intensity and the symptoms accompanying the various degrees of pain may have vastly different prognostic import. Considering pain from its prognostic point of view, the prognosis, as one would expect, increases in gravity as the pain increases in intensity. But many attacks of very slight pain are the precursors of very severe attacks, and no real cardiac pain should be regarded lightly. But with a slight pain and with no degree of breathlessness and with no apparent disturbance in the heart that we can hear by the stethoscope or that we can discover in other ways, the prognosis remains good. It is simply a sign of beginning myocardial changes which may go on slowly or rapidly as the case may be. But in the case in which there is tenderness and marked increased sensitiveness in the skin and muscles beneath, after the pain has left, the prognosis is much more serious. Balfour long ago pointed out that when pain was present in the heart the less we could hear or

find the matter with that heart the worse was the prognosis. If we could find that it was dilated there was some chance of improving its condition, but provided that there were attacks of severe angina in the heart that apparently showed no other symptoms the prognosis was of the gravest. This is true, but we can hear more and interpret more accurately what we do hear than when those statements were first rendered. If Balfour had added that if we took the algebraic sum of the presence or absence of a variation in the sounds of the heart, plus the amount of breathlessness, plus the presence or absence of pain and the intensity of that pain, we would be able to form a fairly accurate opinion concerning the presence and degree of myocarditis in the heart under consideration.

ACCIDENTAL WOUNDS IN HERNIA SURGERY.*

OBSERVATIONS BASED UPON 2,000 PERSONAL OPERATIONS.

By WILLIAM BURTON DE GARMO, M.D.,
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IF an accurate knowledge could be obtained of the number of bladders that have been opened by mistake during hernia operations, it would be a source of great surprise to the profession.

In 1897 Gibson stated that the death rate among those whose bladders were accidentally injured during operation was over 12 per cent., and in 1908 Eggenberger placed the mortality at between 30 and 40 per cent.

There is no reason to doubt that there has been an even greater death list among those more numerous cases which have not been reported. The infrequent operator naturally hesitates to publish his mistakes, knowing that he is more seriously injured thereby than would be the surgeon of established reputation.

In view of these facts, I make no apology in bringing this subject before the Surgical Section of this Society, wherein I hope it will be freely discussed.

That the bladder may form a part of protruding hernia, and become a complication in its operative treatment has been known for centuries, but unfortunately the average operator seems to have forgotten this fact, and now that so many men are doing hernia work, it is important that this complication should be impressed upon their minds.

Some writers have applied to this condition the term "cystocele" which, while it is a perfectly

appropriate name, is quite misleading on account of its very common use, by the gynecologist, to denote a prolapse of the bladder into the vagina. That also is hernia of the bladder, but is not under discussion in this paper.

When we consider the anatomical relations of the bladder to the inguinal and femoral rings, we will at once see that there is every reason to expect its protrusion in association with hernia.

The peritoneum that lines the interior abdominal wall lies like a blanket over the upper part and posterior wall of the bladder, practically shutting that organ out of the peritoneal cavity.

The anterior wall of the bladder is not covered by peritoneum, but is protected from the pubic bone by prevesical fat, which is continuous with the pelvic fat and transversalis fascia. This loose fat allows of the free movement of the bladder in its rise and fall when distended or empty. As well known this lack of peritoneum on the anterior bladder wall makes possible suprapubic cystotomy without entering the peritoneal cavity. The anatomical difference between male and female has little bearing upon the present discussion. In the male, the peritoneum passes from the posterior bladder wall to the rectum, while in the female it covers the fundus of the uterus before reaching that point.

A protrusion through either the femoral or inguinal opening carries before it the peritoneum and transversalis fascia, both of which drag upon the bladder wall.

When empty the bladder in the adult lies wholly within the pelvis and there is little tendency for it to protrude, but when moderately distended, it not only rises above the pubic bone, but broadens out towards the hernial openings on either side.

Muscular effort while the bladder is distended undoubtedly may cause a protrusion of a part of that organ, where there may be no protrusion of other contents of the abdomen, and where the peritoneum has not been pushed through the hernial opening.

It is believed that this occurs only in those whose muscles are defective and where the protrusion is of the direct type. This condition is so liable to occur in direct hernia that all cases of this type should be under suspicion.

In infancy and early childhood bladder hernia is not so likely to occur, as, while the organ projects well into the hypogastric region, it is much narrower than in the adult. It projects well above the pubic bone even when empty, but does not broaden out towards the hernial openings when distended as in the adult.

The bladder wall is composed of fibrous, muscular submucous and mucous coat. Its thickness varies with amount of distension and in different individuals. It is about one-eighth of an inch when moderately stretched; when contracted it may be half of an inch thick. Its fibrous coat is thinnest near the fundus of the bladder.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

The muscular coat is in three layers, two of longitudinal fibers and one circular. These fibers may be so thin that open meshes are found between them and sacculi form, resulting in hernia of the mucosa through the bladder wall itself.

There are three distinct forms of bladder hernia.

1. The bladder may protrude within a large hernial sac with other contents of the abdomen. This form is undoubtedly more common than is supposed, but it is reduced when the patient comes to operation and is therefore undiscovered.

2. The bladder is dragged into the hernial opening by the peritoneum or the transversalis fascia.

3. When the mucosa is herniated through the muscular layers of the bladder forming a diverticulum. This is the most treacherous of all types, as the membrane closely resembles hernial sac.

The first type is intraperitoneal, the second either wholly or partially extraperitoneal, and the third type is always extraperitoneal.

Preoperative Diagnosis.—It is rarely possible to make a positive diagnosis of this complication before operation, nor is it absolutely essential for safety. If we discover enough to make us suspicious that the condition may exist, and we are on the lookout for it, the safety of the patient is thereby pretty well assured.

Certain symptoms associated with the voiding of urine or the position and character of a tumor above the pubic bone may suggest bladder complication, and put the operator on his guard. Personally I have come to look with suspicion upon all cases of direct inguinal hernia, occurring in fat adults past middle life as liable to contain complications, either of bladder protrusion or as being sigmoid or caecal hernia, where the bowel has a sac in front of it, but no peritoneal covering on its posterior wall.

Besides the fact that bladder complication occurs most frequently in the direct type of inguinal hernia, there are certain symptoms that point towards a diagnosis.

A patient may complain of a desire to urinate when the tumor is compressed. In one of my cases of enormous scrotal hernia, the patient declared that he was obliged to compress the tumor before he could complete urination.

At operation it was found that a large part of the bladder had occupied the sac, but was easily reduced with the other hernial contents.

Certain characteristics of the tumor may also help in diagnosis. Ordinarily inguinal bladder hernia, even of large size, shows little tendency to drop down into the scrotum in the male or the labia in the female. They reduce slowly and incompletely and are quite liable to become painful under truss wearing.

Bladder protrusions through the femoral canal are even more difficult to diagnose before

operation, and the only symptom which may be complained of is some form of bladder irritation which is, I believe, more likely to be present than in the inguinal cases.

It should be constantly borne in mind, however, that even in extreme cases of bladder involvement, there may be no symptoms pointing to that organ.

Diagnosis at Operation.—The question—how to recognize the bladder at operation—cannot be so answered as to prove an absolute protection against accident, and the suggestions here made must be accompanied by eternal vigilance when operating in this region if it is to be avoided.

In the first classification, when the bladder comes down inside of a large sac, there is little chance of accident, as it is easily reduced with other contents of the hernia.

Anatomically we are taught that the areolar fatty tissue covering the bladder contains numerous and large veins that warn us of our proximity to that organ. This sometimes holds true, but cannot be relied upon implicitly. Ordinarily the fat near the bladder is a lighter yellow than that usually seen near the hernial openings.

A protrusion into the inguinal canal immediately above the pubic bone to the inner side of or behind the cord, and entirely free from the cord, should be suspected of being bladder. If this tumor is covered with fat of a light lemon color from which it is separated with difficulty, safety demands that it should be treated as bladder wall. The ordinary hernial sac "shells out" of the fat in which it may be embedded easily, but the fat covering the bladder is not easily stripped away. In several instances I have confirmed my diagnosis by having an assistant pass a sound. It must always be remembered, however, that failure to pass the sound into the tumor does not conclusively prove that it is not bladder and safety is on the side of assuming that it is.

It is useless and misleading to look for normal bladder wall with muscular fibers, as it is so thinned and changed in character as to be unrecognizable. Personally I have never met with normal bladder structure in these protrusions.

Whenever two sacs are found in the same canal it can almost be put down as a certainty that one, and that the lower and inner one, is bladder.

In double hernia the finding of bladder on one side does not preclude its being present on the opposite side. In one reported fatal case where the bladder had been accidentally opened extraperitoneally, it was found at autopsy also protruding on the opposite side. In my own experience I have found double protrusion in two instances.

In those cases where diverticula form by the

pushing of the mucosa through the mesh of the muscular coat, it is only by tracing it to its origin that diagnosis can be assured, as it is thin and has every appearance of peritoneal sac. Some were so thin that fluid was seen within and they have been supposed to be cysts.

The one procedure that has proven of the greatest service to me has been to open into the abdominal cavity high up in the canal and examine the tumor *from the inside*. In some cases the true hernial sac has been opened into in this way, and it was then found that the greater bulk of the tumor lower down was bladder.

That part of the peritoneum which covers the bladder had been dragged into the canal by the descent of the hernia. These are treacherous cases, as only a small angle of the bladder may be attached to the inner wall of the sac, and may be ligated and cut away without being noticed. In others the viscus has been injured by picking up and ligating what appeared to be a mass of loose fat deep in the canal. In still another the ureter, as well as a part of the bladder, was ligated and cut away.

The accidents to these cases were only realized when urine leaked through the wound or blood was present in the voided urine.

Accidents have been by needle puncture, by cutting away an angle of the bladder that has been ligated with the sac; by laceration in making traction upon the sac, and by deliberate incision under the supposition that a cyst or hydrocele of the cord was being dealt with.

The cases of needle puncture usually have not been noticed at the time, but urinary fistula has formed later.

Too much traction on the neck of the sac when preparing to ligate it, may drag the bladder into the field of operation and lead to the accident.

Management of Bladder Complication.—The special procedure necessary, if the condition is recognized, before the organ is injured, is to transplant the bladder protrusion or diverticulum as far from the canal as possible, otherwise the hernia is quite liable to recur.

In order to accomplish this, I have resorted to two different methods. In the first the bladder is freed from surrounding tissues by blunt dissection, with extreme care to avoid tearing and carried well towards the median line and retained there by suturing the prevesical fatty tissue to the conjoined tendon. Extreme care must be used not to dip deep enough into the fat to puncture the bladder wall.

I much prefer whenever it can be carried out, the second method which consists of inversion of the diverticulum into the bladder itself.

A purse-string suture of catgut is run around the neck, or base of the protruding diverticulum, or sacculus, which is then completely inverted by pressing back into the

bladder with the finger or blunt instrument, and the purse-string suture is then drawn tight and tied.

This is a similar procedure to that used by many operators in burying the stump of the appendix in the cæcum and the same precaution is taken in placing the purse-string suture in the muscular coat of the bladder as taken in placing it in the cæcum in appendectomy.

The first method should be confined to those cases in which the protruding tumor is large and sessile. The success of the second method depends largely upon the protrusion having a neck upon which the purse-string suture can act.

The high mortality following bladder injuries has been largely due to the accident not being discovered at the time and immediate repairs made.

No matter how slight the injury may be if the integrity of the bladder wall has been disturbed it must be immediately and carefully restored.

Accurate repair and complete closure is far safer than gauze packing and an open wound. Even the smallest needle puncture must be turned in and sutured. Never rely on a ligature around a puncture or small incision.

The closure of a clean incised wound in the bladder will be managed differently by men eminent in bladder work, but it is uniformly conceded that in the mucosa nothing but an easily absorbable suture should be used, but for the outer layers many prefer silk or linen.

Dr. Howard A. Kelly advocates catgut sutures through the entire thickness of the bladder, reinforced with a second row of fine silk sutures. Charles H. Mayo has closed with catgut, protected by a layer of outside linen sutures of the Cushing type. In using silk or linen extreme care should be exercised to avoid perforating the whole bladder wall as concretions would be sure to form on that part within the bladder, besides which leakage would be quite likely to occur at the point of puncture.

It seems most rational to me to stitch up the rent or incision in the bladder by continuous catgut suture for the apposition of the mucosa, followed by one or two layers of sutures through the muscular and fibrous coats of silk or linen Lambert sutures, interrupted or continuous. When the bladder wall is very thin, one must infold one layer and close the other over it.

The bladder may be kept empty by frequent catheterization, which is preferred by most operators to a catheter continuously in the urethra. It is best to close the abdominal wound to insure the cure of the hernia by primary union and resort to packing the wound with gauze only as an extreme measure.

HISTORIES OF PERSONAL CASES.

CASE I.—Intraperitoneal (Card No. 121), December 4, 1895, T. S., age 50 years. Right scrotal hernia of gradual growth and 20 years' duration; no previous treatment; tumor two feet in circumference, extending 14 inches below the external ring; no symptoms of strangulation; incontinence of urine at times. When urinating the patient is frequently obliged to compress the tumor quite violently with both hands in order to complete the act. Previous venereal infection or genitourinary trouble was denied.

Operation was performed at the Post-Graduate Hospital, Dr. Ogden and staff assisting. The sac was found to contain large and small intestine, omentum, and a mass protruding with peritoneal covering, believed to be the bladder, all freely reducible. The entire sac was stripped out, tied at its neck with kangaroo tendon, and cut away. The canal was closed by the Bassini method, kangaroo tendon being used as suture material. On the following day the house surgeon reported complete retention of urine and inability to pass the catheter. The writer being out of town, the case was seen by Dr. George E. Doty, who found the bladder enormously distended, almost to the umbilical line, and tapped it suprapubically with an ordinary trocar. On the second day, Professor Eugene Fuller opened the bladder by perineal section, leaving liberal drainage.

The case made an uneventful recovery, the temperature at no time exceeding $99\frac{1}{2}$ and the hernial wound healing by absolute primary union. There has been no recurrence of the hernia.

CASE II.—Extraperitoneal (Card No. 476), January 5, 1899. C. D., large fat man, 58 years of age. Left scrotal hernia larger than adult fist, of 30 years' duration, and not fully reducible; trusses worn found painful and unsuccessful; condition gradually growing worse; repeated attacks of strangulation and inflammation.

Operation was performed at the Post-Graduate Hospital, Dr. McAlpin and staff assisting. On opening the canal two distinct sacs were disclosed, one coming down the canal from the internal ring and about three inches in length. When this was separated from the cord and raised up, another sac of direct hernia type was found protruding on the inside of the cord close to the pubic bone. This lower protrusion appeared like a thick mass of fat well supplied by vessels and connecting with the deeper parts by a broad base. Bladder tissue was suspected, and a sound introduced through the urethra passed readily into this diverticulum. After ligating and removing the upper sac, the lower mass was separated from its surrounding with considerable difficulty and the canal closed over it by the Bassini method. It was thought that considerable trouble would result from the necessary handling and tearing of tissue, but there was prompt recovery without anything more unfavor-

able than a slight superficial suppuration. No recurrence five years later.

CASE III.—Extraperitoneal (Card No. 496), April 12, 1899. Rev. J. S., a thin man, age 71 years (referred by Dr. L. Bolton Bangs). Double inguinal hernia for many years; the size of a hen's egg on the right and as large as a fist on the left side; truss-wearing painful and hernias not retained; twice strangulated; complained of malignant growth.

Operation was performed at the Murray Hill Sanitarium, Dr. George E. Doty assisting. On the left side a large sac, difficult to remove, was found, but without other complications. On opening the canal on the right side a tumor, the size of a small hen's egg, was also found protruding inside of the cord and immediately above the pubic bone. Its neck was rather broader than usual for a hernial sac, and its anterior surface could easily be followed down to the bladder wall. It was easily separated from its adhesions, inverted and buried under the muscular wall by the Bassini method of closing the canal. Primary closure was obtained on both sides and the patient left the sanitarium on the fourteenth day after the operation. Operation was followed by almost complete relief of abdominal symptoms.

CASE IV.—Extraperitoneal (Card No. 534), July 19, 1899. Physician, age 61. Inguinal hernia on the right side, size of English walnut, noticed about three months since. Truss proved irksome and operation desired.

Operation was performed at the patient's home, assisted by Dr. George E. Doty. Canal was found well filled by an elongated piece of fat that came from vicinity of internal ring. The hernia was found to be a direct protrusion inside of the cord, close to pubic bone, and with a broad base. It was thickly covered by fat, closely adherent to the surrounding parts, and easily recognized as an extraperitoneal protrusion of the bladder wall. It was turned in and the canal closed by the Bassini method. No recurrence to time of his death from other causes four years later.

CASE V.—Extraperitoneal (Card No. 551), August 17, 1899, H. P. W., age 45 (referred by Dr. Barker, Morristown, N. J.). Left inguinal hernia for several years, fairly well controlled by a good truss; truss-wearing always attended by considerable pain.

Operation was performed at the Murray Hill Sanitarium, Dr. George E. Doty assisting. Canal was filled with fat which was ligated and cut away. Tumor, half size of a hen's egg, protruded inside of the cord and by a broad base closely adherent to all surrounding parts. The anterior surface was found to dip down deep into pelvis close to pubic bone and was recognized as part of bladder. A stitch of catgut was passed through the top of the tumor, carefully avoiding the bladder

wall, and it was then carried towards the median line through the conjoined tendon and tied. This was done in order to keep the diverticulum away from the canal. The canal closed by Bassini method, healing by primary union, and patient returned to his home on 14th day. No recurrence to January, 1908.

CASE VI.—Paraperitoneal (Card No. 1089), February 11, 1904. J. C., age 38 years, medium build. Right direct hernia, size of goose egg, of several years' duration; truss-wearing painful and abandoned; incarcerated when first seen and reduction impossible, but no symptoms of intestinal obstruction; diagnosis of incarcerated omentum and patient sent to hospital for operation.

Operation was performed at the Post-Graduate Hospital, Dr. Loughran and staff assisting. On opening the canal a bulging of tissue into its upper part was found, and this merged into a decided tumor protruding inside of the cord close to the pubic bone. Constriction of this tumor had been at the external ring. The amount of fat and the unusual vascularity of the mass caused me to be suspicious at once that it was the bladder. This was verified by opening into perineum high up in the canal. It was easily ascertained from within the abdomen that the larger mass was the bladder protruding extraperitoneally. It was freed from adhesions, inverted and buried under the muscular wall by the Bassini method. Recovery by primary union without incident.

CASE VII.—Extraperitoneal (Card No. 1138a), May 30, 1904. Physician, medium height and rather stout, about 60 years of age. First seen May 19, 1902. Diagnosis, left complete inguinal hernia, of two months' duration, size of two fingers through the canal; believed to be omentum or fat; supposed cause, cough; truss applied, which controlled fairly well, but irksome and operation desired.

Operation was performed at Dr. Bull's private sanitarium. Dr. George E. Doty assisting. On opening the aponeurosis what appeared to be fatty sac was found well up in the canal. It came out inside of the cord and connected with the abdomen by a rather broad base, but entered the canal higher up than any bladder protrusions seen previously or since, and presented every appearance of a hernial sac well covered by fat. On opening this, it was found to be a diverticulum from the bladder. Its walls were fatty, not thick, and presented none of the muscular covering supposed to be found in the bladder wall. The incision made in the bladder was about $\frac{3}{4}$ of an inch long. The mucous coat was brought together by small catgut, infolded, and a layer of small intestinal silk used to bring together the outer surfaces. Special care was used not to lacerate the mucous lining of the bladder. Still another row of silk

sutures was placed outside of this. The bladder was then pushed back and the muscles closed over as in the Bassini operation. There was no true hernial sac in the canal. Some loose fat was tied off and removed.

A catheter was tied in the bladder and the patient put to bed. The catheter was removed only for cleaning and was kept in place for four days. Aside from some slight irritation from the catheter, recovery was prompt and apparently complete, the patient leaving the sanitarium at the end of two weeks. He was seen at the end of three weeks and then made little complaint regarding his bladder, though he had some irritation on urinating.

The patient went to Cooperstown on June 25, 1904. On the 27th, he developed a chill with temperature of 104° . The temperature subsided in a few days. On July 28 following, he had another chill with temperature 105° .

Dr. Eugene Fuller operated July 30. The prostate was removed and found enlarged and hard. There was no abscess. Dr. H. T. Brooks subsequently reported in the pathological findings that the hardening and enlargement were purely of an inflammatory character. Recovery was slow.

On November 30, 1904, and again on February 14, 1905, a small calculus was crushed and washed out of the bladder. The washings from the bladder on both occasions showed some silk thread.

At the time of the prostate operation, Dr. Fuller, at the suggestion of Dr. A. H. Cilley, who had been present at the hernia operation, examined the interior of bladder at the site of the hernia wound and found that it was all right. There was no silk there then or he would have felt it. The silk must have been extruded into the bladder after that date. Whether it may have been disturbed at the prostatic operation, which went through both bladder walls, it is impossible to say, certain it is that the presence of the silk gave the patient great distress and delay in recovery.

CASE VIII.—Paraperitoneal (Card No. 1177), November 30, 1904. W. C., a fat man, 60 years old. Double inguinal hernia, four years on left side and six months on right; truss-wearing painful and not retaining hernia.

Operation was performed at the Murray Hill Sanitarium, Dr. George E. Doty assisting. Left hernia of ordinary direct type was found bulging into canal. The bulk of the tumor protruded inside of the cord very low down. I opened into the peritoneal cavity high up and found that the lower swelling was the bladder protruding extraperitoneal. The split in the peritoneal sac was stitched up with catgut and the whole mass was buried under the internal oblique muscle by the Bassini method. The hernia on the right side was of the ordinary oblique type. Recovery was prompt with no recurrence.

CASE IX.—Paraperitoneal (Card No. 1184), December 15, 1904. Italian, age 38 years. Medium build; double inguinal hernia; previous history unknown.

Operation was performed at the Post-Graduate Hospital, Dr. Parker and staff assisting. On the left an incomplete oblique hernia was found, but on the right the hernia was of the direct type, with peritoneum bulging into the canal. When this was opened it was found that the lower and larger protrusion was bladder wall, extraperitoneal. The peritoneum was closed by purse-string suture of catgut, and the bladder, after being freed from adhesions, was inverted, and buried beneath the internal oblique muscle by the Bassini method.

CASE X.—Extraperitoneal and hernial sac (Card No. 1192), January 6, 1905. M. K., age 44. Man about five feet two inches high, weighing over 200 pounds, with right inguinal, umbilical and ventral hernia, all of several years' duration.

Operation was performed at the Murray Hill Sanitarium, Dr. George E. Doty assisting. On opening the canal a sac about three inches long was separated from the cord up to the internal ring. This left a swelling as large as half-hen's egg protruding inside of the cord low down in the canal. Upon exploration through the upper sac this was found to be the bladder extraperitoneal. It was inverted and buried under the internal oblique muscles after ligating the true hernial sac. Ventral and umbilical hernia were operated upon at the same time. Primary union. Returned home on 14th day. No recurrence, January, 1908.

CASE XI.—Extraperitoneal and hernial sac (Card No. 1195), January 9, 1905. Rev. W. I. H., 47 years of age, and with strong tendency to adiposity. Double inguinal hernia of many years' duration; on the right side, painful and not retained by truss; on the left, of recent origin and easily controlled.

Operation was performed at the Post-Graduate Hospital, Dr. Finley and staff assisting. On opening the right side of the canal was found full of loose fat and bulging peritoneum. Lower in the canal the bulging (hernial sac) merged right into a tumor the size of a small hen's egg, which connected with the abdomen by a broad base. The case was so similar to the one operated on three days previously (reported above), that the bladder was at once suspected, and it was verified by opening the upper sac and examining the lower tumor from within. The opening in the sac was then closed by purse-string suture of plain catgut, the bladder freed from adhesions, carried towards the median line and the overlying fat fastened there by one suture through the conjoined tendon. The canal was then closed by the Bassini method. On the left side the canal was found full of loose fat, but no sac. The

patient left the hospital on the 14th day perfectly healed. No recurrence, January, 1908.

CASE XII.—Extraperitoneal (Card No. 1203), February 13, 1905. A. W., age 61 (referred by Dr. S. W. S. Toms, Nyack, N. Y.). Large man of medium build; right inguinal hernia, three years' duration, supposed to contain omentum. A powerful truss worn but failed to retain hernia.

Operation was performed at the Murray Hill Sanitarium, Dr. George E. Doty assisting. On opening the canal a tumor the size of a small hen's egg was found protruding inside of the cord and immediately above the pubic bone. Owing to its vascularity, the latter was suspected and on tracing anterior surface of the tumor it was found to dip deep into the pelvic cavity, following closely the inner surface of pubic bone. No hernial sac existed and the abdomen was not opened. The bladder was freed and pushed well towards the centre of the abdomen and the canal closed carefully by the Bassini method. The patient left the sanitarium on the 14th day perfectly healed. The patient had considerable pain for four or five months and hernia recurred about one year later.

CASE XIII.—Extraperitoneal (Card No. 1234), May 2, 1905. F. E., age 38 (referred by Dr. Abrahamson). Thin man of medium height; double inguinal hernia for six months; no treatment.

Operation was performed at the Post-Graduate Hospital. On the right side a tumor the size of an English walnut was found protruding inside of cord, with a very broad base and thickly covered with fat. It was considered suspicious and the peritoneum was opened near the internal ring. The tumor was found to be an extraperitoneal protrusion of the bladder, which was freed from adhesions, pushed well to centre, after inverting, and the muscles closed by the Bassini method. The opening in the peritoneum was previously closed by catgut. On the left side a sac very similar in character was found, which was believed to be the bladder, but this was not verified. The procedure was the same as on the opposite side. The patient left the hospital on the fourteenth day perfectly healed. No recurrence.

CASE XIV.—Extraperitoneal (Card No. 1239, May 10, 1905. E. A. T., 53 years of age (referred by Drs. Roberts and Fleming). Patient of medium height and quite fat. Double inguinal hernia of four years' duration; trusses unsatisfactory and worn only part of time.

Operation performed at Murray Hill Sanitarium, Dr. George E. Doty assisting. Right hernia the size of two adult fists, was found full of hypertrophied omentum, which was ligated by chromic gut and cut away. The canal was closed by the Bassini method. On the left side a small oblique sac was found pro-

truding through the internal ring, and lower down inside of the cord, was what appeared to be a direct hernia. Upon examining this through an opening in upper sac, it was found to be an extraperitoneal bladder protrusion. The bladder was freed and pushed well to the center, the neck of the sac ligated, and canal closed by the Bassini method. Primary union was secured on the left, but slight suppuration occurred on the right. The patient left the sanitarium on the twenty-first day. No recurrence to January, 1908.

CASE XV.—Labial hernia, paraperitoneal bladder protrusion (Card No. 1295), January 3, 1906. K. W., age 36 (referred by Dr. Mills-paugh). Diagnosis: right labial hernia, the size of an adult fist, containing intestine and omentum; of nine years' duration; some symptoms of strangulated hernia during the past year; no truss worn.

Operation was performed at Murray Hill Sanitarium, Dr. George E. Doty assisting. On opening the canal a large sac was found which was of ordinary thickness in its upper part, but was thick and had the feeling of adherent omentum at its fundus, which was well down in the labia majora. On opening the tissue near the internal ring a large, empty sac was found, which had dragged the bladder well over the pubic bone. On its posterior wall the bladder was well covered by peritoneum, but the anterior wall was extraperitoneal. Had the sac been opened at what had appeared to be its fundus, the incision would have been into the bladder. The sac was closed by purse-string suture, the stitches following closely the margin of the internal ring, and as close as considered safe to the junction of the bladder and peritoneum. The stump was then turned towards median line, after freeing the bladder wall from adhesions, and fastened under the internal oblique muscle; the canal was closed by the Bassini method. Recovery prompt, with no recurrence.

CASE XVI.—Extraperitoneal (Card No. 1309), February 5, 1906. M. P. B., age 41; six feet tall, weight 195 pounds (referred by Dr. J. Hoffman, Jersey City). Right inguinal hernia, eight years' duration; truss worn; retained hernia, but painful.

Operation was performed at Murray Hill Sanitarium, Dr. George E. Doty assisting. The canal was filled by fat which covered the sac very thickly at its lower part. The sac was opened near the internal ring and the bladder, uncovered with peritoneum, found dragged over the pubic bone. The sac opened was closed by catgut, the bladder freed and pushed well to the median line, and the canal closed by the Bassini method. Patient left on fourteenth day perfectly healed. There was no recurrence.

CASE XVII.—Extraperitoneal both sides (Card No. 1340), April 17, 1906. C. R., age 25 years; medium size and rather thin. Double

inguinal hernia, for several years, size of hen's egg on either side. Trusses worn, but always with discomfort.

Operation was performed at the Post-Graduate Hospital, Dr. Runyon and staff assisting. On opening the right side the hernial sac, found in the canal was continuous with a larger tumor at its lower part. The upper sac was opened and the lower mass diagnosed as an extraperitoneal bladder hernia. The upper sac opening was closed, the bladder was freed of adhesions and carried towards median line, and the canal closed by the Bassini method. An exactly similar condition existed on the left side and was treated in the same way. Both closures were difficult, but apparently effective. The patient left the hospital on the fourteenth day perfectly healed. There was no recurrence to January, 1908.

CASE XVIII.—Extraperitoneal (Card No. 1353), May 19, 1906. S. H., age 53 (referred by Dr. Honeyford, Hudson, N. Y.). Right inguinal hernia, five years; size English walnut; elastic truss worn but hernia not retained.

Operation was performed at the Post-Graduate Hospital, Dr. Smith and staff assisting. Some fat and a sac bulging in the upper part of canal was found with a tumor low down on the inside of the cord. The upper sac was opened and the lower protrusion found to be extraperitoneal protrusion of the bladder. The sac opening was closed by purse-string suture and the bladder fastened well towards the center by suture through the fatty covering. The canal was closed by the Bassini method. The patient left the hospital on the fourteenth day perfectly healed. There was no recurrence one year later.

CASE XIX.—Extraperitoneal (Card No. 1401), December 13, 1906. M. W., age 38 (referred by Dr. Abrams). Double inguinal hernia; previous history not known.

Operation was performed at Post-Graduate Hospital, Dr. Smith and staff assisting. On the right side a true direct sac was found, but the lower, and larger, part of the tumor was the bladder not covered by peritoneum. The sac opening was closed by purse-string suture; the bladder was freed from adhesions and stitched by fatty coverings to the under surface of the internal oblique well towards the center of the abdomen, and the canal closed by the Bassini method. The patient left the hospital on the fourteenth day perfectly healed.

CASE XX.—January 7, 1907. Age 45. Sex, female (Card No. 1416-17). Diagnosis, double inguinal hernia (referred by Dr. Reiser). Name, Mrs. F. N. History, operated on February 1, 1898 (Nos. 387-8), left femoral and umbilicus both remaining strong.

Operation was performed at Murray Hill Sanitarium by Dr. Morgan, Dr. Doty assisting, with gas-ether. Both hernia direct type with much fat

over sacs. Bladder comes into sac on right side. Both sacs tied off by purse-string suture and anchored under internal oblique. Muscles fair and well closed. Primary union. Out sixteenth day, but small stitch abscess on both sides; healed quickly.

CASE XXI.—Extraperitoneal (Card No. 1442), March 16, 1907. A. J. C., age 45 (referred by Dr. S. G. Grant). Right complete inguinal hernia of supposed recent origin.

Operation was performed at Murray Hill Sanitarium, Dr. George E. Doty assisting. A small oblique inguinal sac and some fat was found in upper part of the canal. Just above the pubic bone and inside of the cord was protruding a small, fatty tumor the size of a small English walnut. The anterior surface could be easily traced down to the bladder wall. The upper sac was removed, the bladder freed and pushed towards center of abdomen.

The patient has some irritation of the bladder previous to operation, and on the following day developed a sharp cystitis, which lasted for nearly a week. As there was very little handling of the bladder diverticulum, it is not known why the cystitis should have developed.

CASE XXII.—February 3, 1908. Age, 45. Sex, male. (Card No. 1517). Diagnosis, left complete inguinal hernia (referred by Dr. A. Mayer). Name, D. B. History, hernia two months, size English walnut. Truss worn (DeG.).

Operation was performed at home, assisted by Dr. Doty and Dr. Carter, with gas-ether, changed to chloroform. On opening canal, a light yellow fatty tumor presented that was believed to be a bladder. It was inverted and pressed towards center of abdomen. Muscles fairly good and very carefully closed.

CASE XXIII.—February 5, 1908. Age 50. Sex, male. (Card No. 1520). Diagnosis, left complete inguinal hernia (referred by Dr. Moynihan). Name, A. M. B. History, hernia two years; has been wearing cross-body, hard-rubber truss, which partially retains hernia. Has seen a "quack," who is anxious to operate upon him by injection. Heavy man, probably with fat canal. Possibly sigmoid hernia. Operation strongly advised; to report later.

Operation was performed at Murray Hill Sanitarium, assisted by Drs. Doty and Carpenter, Dr. Price giving gas-ether, chloroform. Patient very fat man with short neck; took ether badly; did very well under chloroform. When aponeurosis was split, an enormous mass of fat bulged out. A portion of this was an elongated piece, starting at the internal ring, which was tied off and removed. Just above the pubic bone was a bulging mass that seemed to dip down into the pelvis, which was considered bladder and was not touched. It was pressed back and the internal oblique, which was thin but fairly strong, very carefully sutured down against Poupart's liga-

ment. The aponeurosis, which was very good, was then closed over the parts.

May 25, 1909.—There is a little slipping, as of fat in canal by side of cord low down. Just felt discomfort not previously noticed. Wearing strong canvas belt; compress to be added.

CASE XXIV.—February 6, 1908. Age 45. Sex, male. (Card No. 1525-6). Diagnosis, left inguinal rupture, incipient inguinal hernia. Clinic. Name, J. S. History, was suffering from jaundice due to some liver trouble, for which he was under treatment in the medical department, by whom case was referred to me.

Operation was performed at Post-Graduate Hospital, Dr. Walker and staff assisting. A large amount of fat in canal. An elongated piece removed at internal ring. Small, round projection just above Poupart's ligament, to inner side of cord, was believed to be bladder; inverted and held in place by purse-string suture. Muscle very carefully closed down, the last stitches being into all the tissues covering the pubic bone. On left side, mass of fat found in canal; no hernia. Muscles fairly good.

CASE XXV.—April 11, 1908. Age, 42. Sex, male. (Card No. 1550-51.) Diagnosis, double complete inguinal hernia. Direction, Dr. Quintard. Name, H. W. T. History, Pomeroy truss worn three years. No strangulation. Has been in bed four weeks with nervous trouble. Much improved.

Operation was performed at Miss Gordon's Sanitarium. Dr. Doty assisting. Dr. Price, gas-ether. Left side operated on first, and bulging found throughout length of canal back of cord, the larger part being low down. The sac was not opened, but turned in and internal oblique closed. Muscles fairly good, rather thin.

On right, sac at its lower part gave suspicion of bladder. Abdomen therefore opened at upper part of canal and, while it was found that the sac was mostly peritoneum, at the lower part the bladder was drawn into the canal. Peritoneal part of sac closed by purse-string suture, and the tumor anchored under the internal oblique towards the median line. Muscular closure a little better than on left.

CASE XXVI.—April 29, 1908. Age, 52. Sex, female. (Card No. 1555.) Diagnosis, left labial hernia (referred by Dr. Rockwell). Name, Mrs. E. W. V. History, June 25, 1906, hernia eight years; size of fist and slow to reduce. Believed hard to retain. Truss worn part of time, but none most of time. Operation strongly advised, but truss will be tried first. April 11, 1908, truss worn successfully.

Operation was performed at Murray Hill Sanitarium. Dr. Doty assisting. Dr. Price, gas-ether. On opening aponeurosis an enormous mass of fat was found in canal. This was taken out with considerable difficulty, and the

sac, which was heavily covered by fat, removed after careful exploration. The bladder was dragged into the field of operation by the sac, but was carefully avoided in putting in sutures. Muscles fairly good but fatty. Closure accurately made.

CASE XXVII.—May 10, 1909. Age, 32. Sex, female. (Card No. 1686.) Diagnosis, right femoral hernia, irreducible (referred by Dr. M. Einhorn). Name, Miss A. I. McQ. Hernia, one month or longer. No previous treatment. History, operation was performed at Murray Hill Sanitarium. Dr. Hill, gas-ether; Dr. Doty assisting. Had suffered from bladder irritation.

When under the anesthetic and on the operating table the hernia, which had appeared irreducible, seemed to have mostly returned. Upon incision the femoral sac was easily gotten out and beside it was an elongated piece of fat; sac was empty. After tying it off and removing fat, the femoral canal was closed by the DeG. method.

Time of operation, about 17 minutes. As no further bladder trouble was experienced after operation, it is believed that the portion irreducible before operation was an angle of the bladder to which the loose fat was attached.

CASE XXVIII.—January 18, 1910. Age, 38. Sex, male. (Card No. 1746.) Diagnosis right scrotal hernia (referred by Dr. Holden). Name, L. W. History, hernia since childhood; size, three fingers to bottom of scrotum; congenital; wore truss and water pad ten years; retains part of time; appears reducible, but may have adhesions.

Operation was performed at Post-Graduate Hospital. Barron and staff assisting. Sac found to extend down to top of testicle, but not congenital. Omentum that was in the sac reducible, but in its neck was a mass of yellow fat towards the median line and low down, that was considered suspiciously like bladder protrusion. Sac was taken off outside of this and stump inverted. Muscles, which were very good, closed in the usual way.

CASE XXIX.—October 6, 1912. Age, 55. Sex, male. (Card No. 1994.) Diagnosis, left complete inguinal. Name, Dr. E. V. History, hernia size small English walnut; on July 20th slipped on stairs, followed by pain and swelling; no truss.

Operation was performed at St. Elizabeth's Hospital. Gas-ether, Dr. Gibb assisting.

On opening canal it was found that the aponeurosis and muscular layers were very thin. Considerable fat extended down the canal. After this was ligated and cut away, a mass of fat protruded which was believed to be bladder. A purse-string suture was placed around the neck and it was inverted and tied. No true sac was found, but such tissue as was in the canal was cut away and canal closed by bringing the

conjoined tendon well down against Poupart's ligament. There was insufficient muscular fiber in internal oblique to make a good closure.

CASE XXX.—November 13, 1912. Age. Sex, male. (Card No. 2005). R. Comp. Ing. Bladder case. Name, C. De M. History, Operation, Post-Graduate Hospital before Surgical Congress, assisted by Dr. Wilson and staff.

On opening canal a direct sac with broad base, size of small egg, found protruding just inside of cord. It was opened and found to contain small bowel, but towards median line it was thickly covered by yellow fat that was believed to be bladder. The sac was carefully stitched outside of this fat and tied. None of sac cut away. Very good muscles closed in usual way.

CASE XXXI.—November 14, 1912. Age, 47. Sex, male. (Card No. 2006-2007). Irred. Ven. Her. Left Complete Inguinal hernia. Name, H. K. History, Ventral hernia 4 years; unable to wear any support; has pain, vomiting none, nausea, great depression when protruding; feels gas pushing through. Left hernia, three months. Has persistent cough that is not accounted for by lung or throat condition. Operation Post-Graduate Hospital before Surgical Congress, Dr. Wilson and staff assisting.

Epigastric hernia; an incision of skin and superficial fascia, a mass of fat the size of a hen's egg was turned out. It was not covered by sac, but contained one of good size which was empty. The neck, including sac, was ligated, perforated, ligated again, cut away and stump reduced. Opening in tendon admitted finger and closed by two rows of Kang. tendon sutures. Left inguinal hernia was then opened and found to be of direct type, a sac about 1½ inches long bulging into canal low down and well inside of cord. This being suspiciously near the bladder, was not opened but its base surrounded by a purse-string suture and the sac inverted. Muscles which were very good were closed in the usual way. Two operations about 40 minutes.

CASE XXXII.—February 5, 1913. Age 40. Sex, male. Card No. Diag. double comp. ing. several years, size English walnut; wearing "Honest John" truss. Name—J. E. R.

Operation at P.-G., Dr. Heyd and staff assisting. Left side opened first and in canal an elongated piece of fat as large as the thumb and six inches long found filling the canal. This was tied off and removed, and the sac then opened, and high up at the internal ring it was found that the sigmoid flexure was adherent and slipping down the canal. The sac was ligated outside of this point and cut away. The muscles, which were very good, were closed in the usual way.

On the right, a mass of fat the same as on the left, was found and removed, and the sac

when opened was found to be closely attached to an angle of the bladder; the bladder could easily be drawn into the field of operation by traction upon the sac. The sac was ligated at a safe distance and removed. A large thrombosis having formed in one of the veins of the cord, the vein was ligated in two places, and a section removed. These muscles also were very good and were closed in the usual way.

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Discussion.

DR. ALBERT VANDER VEER, Albany, said that so complete and valuable a paper on hernia, as presented by Dr. DeGarmo, will ever remain a genuine contribution to the subject. Among the complications to which he refers so clearly, and which will afford instruction and comfort to operators of less experience, I have a contribution of two cases to make.

The first occurred in a case I operated upon in June, 1904. Mrs. P., who had suffered for some time from a right, indirect inguinal hernia. In exposing the sac I was at first considerably confused to note the soft mass which I thought for a moment might be the head of the cæcum, with a loose, adherent mesentery. A more careful dissection, however, made it appear quite plain we had the bladder to deal with, but in loosening what were really strong adhesions to the lower portion of the inguinal canal, I accidentally opened into the bladder. The opening was closed, the bladder returned to the pelvic cavity, the operation for hernia completed, and patient made a good recovery, but had a relapse at the end of two years, requiring a second operation.

The second case was that of a young man, Mr. T., upon whom I operated April 4, 1912, for indirect inguinal hernia. Upon exposing the sac I discovered along side of the cord a sacculated condition which I at first thought was hydrocele of the cord, but upon dissecting it out carefully, and opening it, it proved to be a hernia of the bladder. The opening was carefully invaginated, closed with chromicized catgut sutures and the operation for hernia completed. For several days this patient passed blood with his urine but this finally ceased, and the wound healed kindly; however, upon examination some six months after the operation a slight protrusion could be observed along the cord. He has worn a very light truss since, fitting well down towards the spine of the pubes, with no inconvenience, and is very comfortable.

DR. M. M. LUCID, Cortland, said that the subject of "Accidental Bladder Injuries in Hernia Surgery," has been so thoroughly covered by the essayist, Dr. DeGarmo, in his usual enthusiastic manner, and by the able discussion of Dr. Vander Veer, that little can be added except in the way of personal experience regarding accidental bladder injuries. This accident has occurred three times in my own practice. I, will, therefore,

confine my remarks to the report of a case in my own hands, of accidental bladder injury, in which a portion of the bladder wall and $2\frac{1}{4}$ inches of the right uterine were accidentally removed, quite similar to the case reported by Dr. DeGarmo in his paper, for the repair of which I performed successfully a cysto-tubo-ureteral anastomosis. In the first operation I amputated the right Fallopian tube from the right horn of the uterus and engrafted it into the bladder, leaving the blood supply of the tube intact; in the second operation I performed an anastomosis between the right ureter and the tube, thus establishing a permanent continuity of the right ureter, via the tube, with the bladder. The original operation was performed October 21, 1903.

In the literature at my command I have been unable to find the report of a similar case.

One of the special advantages brought out in my original article, "An Intraperitoneal Method for the Radical Cure of Abdominal Hernia," published in *Surgery, Gynecology and Obstetrics*, November, 1908, was to assist in the prevention of accidental bladder injuries, by performing the herniotomy from within the abdomen through the same incision, simultaneously with the performance of the primary abdominal operation. This intraperitoneal method suggested itself to me during the performance of an operation for a large ventral hernia in which I opened the bladder three times in separating the sac from the bladder. Since publishing this method of closing hernia from within the abdomen in November, 1908, in *Surgery, Gynecology and Obstetrics*, I have found it more and more useful and the method has received the endorsement of several prominent surgeons who are now using the method with satisfaction.

The invariable custom of passing the catheter just before operation will avoid many embarrassing complications on the part of the surgeon and insure against disastrous sequelæ on the part of the patient.

This paper is a milestone in surgery and calls our attention to a condition that frequently exists, *i. e.*, the accidental injury to the bladder in hernial surgery and which has, heretofore, except by meagre mention, been disregarded both by the medical and surgical journals and textbooks.

That bladder injuries are of more frequent occurrence than generally admitted there is but little doubt, and that they are of comparable importance to a ruptured gall-bladder or appendix is exemplified by the resulting mortality.

Confession of our failures should be epidemic. Surgery profits more by the knowledge of a failure than by one hundred successful operations, and should the accident occur closure without drainage only forestalls the fatal termination.

And now that our attention has been so classically directed to its occurrence, even in the hands of the masters of surgery, it behooves each of us to be more painstaking, and, in addition to what has been brought out in the paper and discussion, if any doubt exists, the bladder should be inflated either by air or fluid, after making the incision, previous to any rash dissection which might result in bladder injury. A method I have used with success both in clearing up the diagnosis and to ascertain in doubtful cases before closing the incision, if the bladder had been injured, as there is no doubt but the high mortality attending bladder injuries is very greatly influenced by failure to recognize and repair the injury immediately; for the repair of which I have found the Cobbler's stitch, coapting but not including the mucosa, the most satisfactory.

Upon a most important feature depends the success or failure of bladder healing, and that is, the bladder must be kept empty either by the use of the retention catheter or hourly catheterization.

A CONSIDERATION OF TWENTY-FOUR CASES OF TUMOR OF THE BLADDER AND CONCLUSIONS AS TO APPROPRIATE METHODS OF TREATMENT.*

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OUR ideas concerning the treatment of new growths of the bladder have changed so radically during the past two years that a review of the results obtained by the older methods and those at present in vogue should be of interest.

In the present paper the writer wishes to discuss a series of 24 cases which have come under his care. In this series are comprised most of the various types of new growth which are met with in the bladder.

1ST.—INOPERABLE CASES.

A series of twelve cases of cancer of the bladder in which no radical treatment was instituted and all of which resulted fatally, or are at present inoperable. It is unnecessary to recite the history of these cases, and at the time of examination were considered inoperable or refused treatment.

2D.—EXTENSIVE RESECTION OF THE BLADDER.

A series of four cases in which extensive resection of the bladder wall was done.

CASE 1.—A man 55 years of age. His bladder contained a large infiltrating growth on the left wall of the bladder, a smooth papilloma on the anterior wall and a villous papilloma near the left ureter opening. In treating this case the bladder was exposed, the peritoneum stripped

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

away from it, the left side of the bladder was resected, the two papillomata were removed and the cautery used to destroy the tissue surrounding the pedicles. The bladder was reconstructed. The patient died in two days from pneumonia.

CASES 2 AND 3.—These patients presented growths about an inch in diameter and were situated on the anterior wall of the bladder. They were removed by resection together with considerable healthy bladder wall. Case two died from a recurrence within one year. Case three developed an extensive recurrence in the wound and died 25 months after the operation.

CASE 4.—A woman 65 years of age. Her bladder contained a large infiltrating carcinoma involving the left side of the bladder, the left ureter opening, and encroached upon the urethra and vagina. An extensive intra-abdominal resection of the bladder was done, including the vesico vaginal septum, the left wall of the bladder, the left ureter opening, and a portion of the anterior wall of the bladder. The remaining bladder wall was sutured to reform the bladder. The patient made a good recovery. The growth recurred and she died ten months later.

3D.—CAUTERY OPERATION.

CASE 5.—A woman 56 years of age. Her bladder contained a large carcinomatous growth which occupied the left wall of the bladder extending well down toward the left ureter. The writer assisted Dr. L. W. Pearson in the treatment of this case. An intra-abdominal operation was done, the bladder widely opened, and the growth was removed by actual cautery dissection without using the knife. The growth had extensively infiltrated the surrounding tissue and the operation was considered incomplete. The bladder was closed. The patient made a good recovery and the bladder healed completely. One year after the operation the patient was entirely free from symptoms, but the cystoscope showed a deformed bladder, the left ureter opening entering the anterolateral wall of the bladder, having been drawn out of place by the contraction of the scar following the operation. Situated near this opening was a small recurrent growth. Under full ether narcosis this growth was exposed to the bipolar D'Arsonval current, applied through the cystoscope. The visible tumor was destroyed. This was done only two months ago and the patient still remains well 14 months after the original operation.

4TH.—SUPRAPUBIC CYSTOSTOMY.

Two cases of extensive cancerous involvement of the bladder for which simple suprapubic cystostomy was done. One case died a few weeks after the operation and the other case is still living ten months after the operation.

Thus it will be seen that in these nineteen cases, and one other which the writer examined in which a recurrence resulted in death, the results have been anything but satisfactory.

Now, however, we come to a more hopeful

phase of the subject. First, the treatment of simple and villous papillomata; and second, a consideration of the possibilities of destroying papillomata and adeno carcinomata of the bladder by means of the high-frequency spark.

PAPILLOMATA OF THE BLADDER.

Papillomata of the bladder may not be considered to be malignant growths, but the fact remains that, if left to themselves, they will multiply and destroy life in various ways. They show a marked tendency to degenerate into adenocarcinoma. If removed by a cutting operation they often recur. The most optimistic authorities report metastases or recurrences in at least 50 per cent. of their operative cases.

Beer, of New York, has demonstrated a method by which these growths may be successfully attacked and destroyed without opening the bladder. This method consists of applying a high-frequency spark to the growth by means of an insulated wire passed through an ordinary catheterizing cystoscope. It is not necessary here to go into the details of the electrical apparatus employed,—suffice it to say that the unipolar high-frequency current is produced by an induction coil specially constructed for that purpose. To apply the spark the cystoscope is introduced and the bladder is distended with water. The insulated wire is passed through one of the catheter canals of the instrument and with the new growth in view, the wire is pushed into the mass, the current is turned on and the spark is produced at the point of contact. The visible results are ebullition, with the production of gas bubbles and a blanching of the tissues in the immediate neighborhood of the spark. The current is allowed to act for about thirty seconds, and then another portion of the growth is attacked. Small growths may be destroyed in a single sitting by this means, while more extensive growths demand repeated applications.

In two instances of papillomatous disease of the bladder the effect of this current was well shown.

CASE 6.—A man, 45 years of age, developed a papillomatous growth of his bladder which caused hematuria and finally temporary complete retention of urine. The cystoscope revealed his bladder filled with a papillomatous growth.

January 8, 1912, the Oudin spark was applied to the growth as it presented in the field of vision. The treatments were repeated at intervals of about one week and gradually more and more of the bladder could be seen. In March it was found that there was one large central growth and two daughter growths. These were all treated and finally disappeared completely in June, 1912. An examination two months later showed the bladder to be entirely free from any signs of disease. One year later the bladder is still normal.

CASE 7.—A man 32 years of age, markedly anemic, with much blood in his urine, was found to have a large papillomatous growth on the left

wall of his bladder. The Oudin high-frequency spark was applied on January 1, 1912. A second application was made three days later and a third one on the sixth day. At this time the growth had nearly disappeared and the bleeding had stopped. Two months later a small tit was found on the original site. This was destroyed. An examination four months later showed the bladder perfectly healthy.

The efficacy of this treatment in papillomatous disease is now well established, and it may be said without fear of contradiction that it has replaced the open operation in all cases of this class.

RECURRENT MALIGNANT GROWTHS.

In dealing with recurrent malignant growths, where new growths appear in their original form or spring from an ulcer base left after extensive removal of a tumor, we have found the D'Arsonval current, the bipolar high-frequency spark, has given us unexpected good results, and has brought about complete recovery after every other means of treatment has failed. An interesting example of this is as follows:

*CASE 8.—A girl 20 years of age was referred to us from Astoria, Long Island. Three years ago she had had a suprapubic cystotomy performed and a number of papillomata were removed. The growths promptly recurred and one year later the bladder was again opened and the recurrences removed. After this last operation there remained a large ulcer which occupied the trigone and would not heal. Bleeding appeared in three weeks after this operation. All forms of treatment failed to heal the ulcer. When the patient presented herself for examination the trigone was occupied by a growth the size of a twenty-five cent piece. This was treated by the Oudin spark, but it had no effect. The growth increased in size and the suffering became so intense that more radical measures were deemed necessary. The bladder was opened from above the pubis with great difficulty, owing to the two previous operations. The growth occupied the entire trigone, was exposed, the superficial necrotic tissue was curetted off and the entire growth was treated with the bipolar high-frequency spark, using the D'Arsonval current. In order to measure exactly the depth of penetration of this current, following the advice of Dr. Squier, of New York, a piece of fresh meat was subjected to the spark. The spark gap was then regulated so that the depth of penetration was about one-quarter of an inch. After thoroughly destroying the growth which occupied the trigone, the numerous flattened growths which were seen scattered over the surface were all treated by the bipolar spark. The bladder was then closed around the suprapubic drain. The after-course of the case was very satisfactory. She left the hospital in about six weeks

with the suprapubic wound entirely healed and the cystoscopic examination showed the entire surface of the bladder to be healed. Further examination, nine months after the treatment, showed the bladder still perfectly normal.

Perhaps a word description of this case does not convey to the hearer the seriousness of the disease of this patient. The situation of the growth on the trigone over both ureter openings made a resection of the bladder almost impossible. Such an operation would have involved the transplantation of both ureters. All other forms of treatment had been tried and were found to be unavailing. The case appeared to be one of malignant growth, but a section was not taken for fear of opening up new avenues for infection. The fortunate outcome of this advanced case has greatly encouraged us in the treatment of these difficult lesions of the bladder.

CASE 9.—A woman operated upon three years ago by Dr. Bristow, assisted by the writer. The case seemed to be a typical one of multiple papillomata of the bladder. The growths were very carefully removed through a suprapubic incision, and the base of each growth was carefully cauterized. The microscopes showed these growths to be adenocarcinomata. Two years later there appeared a recurrent growth on the anterior wall of the bladder in the scar of the suprapubic wound. Efforts were made to destroy this growth by the use of the Oudin current. At first this seemed successful. However, the growth recurred and it was found necessary to apply the bipolar spark, or D'Arsonval current. This was applied under general anesthesia through the cystoscope and the growth entirely disappeared. *At the present writing, more than three years after the original operation, the patient shows signs of further trouble in the bladder, but no growth has as yet been located.* If a recurrence takes place, the bladder will again be opened and any diseased area destroyed by the bipolar spark.

Thus we have two cases of recurrent growths of the bladder, the one known to be carcinomatous, which has been controlled, and the second a recurrent growth which was uncontrolled by all previous methods of treatment, but it was entirely destroyed by the use of the bipolar spark. The action of the spark in this case has so impressed the writer with its efficacy in desperate cases that it recommends itself as an adjuvant for use in all malignant cases involving the bladder. The method of its application was suggested to me by Dr. Squier, of New York.

RESECTION OF THE BLADDER NOT THE METHOD OF CHOICE.

Extensive resection of the bladder in carcinomatous involvement of the organ has not been as successful as was at first expected. Even where the growth was small, circumscribed and situated on the anterior wall of the bladder, removal has often been followed by recurrence. Our own experience in resecting the bladder

* A full report of this case will be found in the *American Journal of Surgery*, April, 1913, and the *Pilcher Year Book*, 1913.

where the involvement has been extensive has been followed by recurrence in nearly every case, and we have abandoned the intra-abdominal operation for less radical measures. These failures led us to adopt other methods of treatment and at the present time we rely entirely on the actual cautery and the bipolar high-frequency spark in these cases. We believe that we can obtain better and more permanent results by avoiding the use of the knife wherever possible. If treatment proves ineffectual through the cystoscope, a suprapubic cystostomy is performed, but no attempt is made to remove the tumor by resecting the bladder. *Our present method of treatment consists of destroying the tumor mass by the actual cautery and deep penetration of the base with the bipolar spark.*

We realize that the last word has not yet been said on the subject of tumors of the bladder, but we do feel that very great progress has been made. We are opposed to the extensive resections of the bladder in known malignant cases and recommend the use of the cautery and the spark in its place. Today we can show more living patients who have had new growths of the bladder than at any other period in the history of this disease, and we naturally feel encouraged in the belief that the newer methods of treatment are giving us better and more permanent results.

At the Boston meeting of the American Urological Society this conclusion as to the treatment of tumors of the bladder was brought forth by the writer and it did not meet with the universal approval of those present. Dr. Keyes, of New York; Dr. Cabot, of Boston; and Dr. Geraghty, of Baltimore, in discussing the paper said that they disapproved of fulguration in the treatment of cancer of the bladder and my answer is that I do also, but the method of treatment which I propose is not fulguration. *The tumor mass is removed and destroyed, first by the actual cautery until all vestige of the disease as far as can be seen has been burned out; then we employ the bipolar spark which bakes the tissues surrounding and including the area from which the malignant growth has been removed,* and I believe more effectually destroying the lymphatic extensions and deep-lying cancer cells and doing less injury to the bladder than any of the extensive operations which are accompanied by such a high mortality rate.

Now, if these gentlemen will consider the ultimate results of all of their cases of cancer of the bladder as I have done, I am sure they will find the ultimate results highly unsatisfactory and will report that with rare exception all of their cases of unquestioned cancer of the bladder have either died as the result of the operation or have recurred.

It was this finding in our own cases that led us to adopt the simpler and what we believe to be a more quickly efficacious form of treatment.

SOCIAL PEDIATRICS.*

By IRA S. WILE, M.S., M.D.,

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IN a recent article Dr. E. P. Lyon has formulated some of the aims of a department of general medicine. He states that it is necessary "to give a broad and comprehensive presentation of the essential, fundamental facts pertaining to the causes, effects, recognition, prevention and cure of disease and to correlate these facts with the fundamental sciences." It is deemed advisable "to give the student as much knowledge as possible of human beings into whose life he must enter in a much broader, more sympathetic relation than that of engineer to machine." Finally he suggests that it is important "to inculcate the ethical and professional ideals of honor, self-respect, altruism and social consciousness without which medicine degenerates into a business or a trade." Assuming that these aims of general medicine are correct, it appears desirable to consider their application to pediatrics.

In a few medical schools there are given didactic lectures in pediatrics with or without clinics, while in other types of schools there is a variable number of clinics without any lectures. While pediatrics is an offshoot of general medicine, it presents many problems that are not generally included in internal medicine. As long as the subject is relegated to a subordinate position in medical teaching, proper instruction for the reduction of infant mortality will be retarded. When the question of preventing infant morbidity is considered, the conclusion is inevitable that the medical colleges have hardly begun to give due attention to this problem.

Medical schools exist for the purpose of supplying the community with men who are trained in caring for the public health. If the schools fail to teach their students the methods of preservation of life, they fall short of their ideal purpose. At the present time there is one physician to every one hundred and thirteen families in the United States. The number of medical practitioners is decreasing slightly. The standards of medical education are advancing. The position of the physician is altering, in that the community no longer regards him merely as an individual, capable of curing individual diseases, but as a specially-gifted man, capable of guiding the public in and to health.

As Dr. Dana has said, "any improvement in the social and economic condition of the doctor of the future can be secured only by continuing to lead and guide the struggle for hygienic progress. By this he will be made a more important man in the community. He will be called into public life as well as private affairs, and as

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

one who can manage the health of a nation, or of a community, he has a greater function than as that of prescribing for an individual."

The problems of infancy and childhood should not be given subordinate positions in the medical curricula when they occupy a most prominent place in the category of medical problems. In 1910, out of a population of ninety-one millions, 18,867,772 represented children under fourteen years of age. There were 10,631,364 children under five years of age, of which number 2,217,342 had not passed their first birthday. To interpret this in another way, one out of every five in the population, according to the census, was a child whose welfare might be considered as belonging to the department of pediatrics.

In considering the deaths from 1900 to 1909, inclusive, out of an average of 595,734 there were 115,373 under one year of age and 188,131 under fourteen years of age in the registration area. This indicates that approximately one out of every three deaths within the registration area falls upon a child under fourteen years of age. Practically 40 per cent. of the total mortality in the registration area occurs under the age of 2.68 years. These figures will serve to indicate the immense importance of the field to be covered by pediatrics. Such facts should accentuate the responsibility of medical colleges for paying attention to instruction in pediatrics.

George Bernard Shaw has suggested that "what the great mass of patients really needed, at the present time, was not medicine or operations, but money, better food and better clothes—and more frequent changes of the latter—and well-ventilated and well-drained houses." Herein lies a suggestion of a field of medical instruction which has been too greatly neglected by our medical colleges.

Medical efficiency may be viewed from the standpoint of cure and to this extent the grade of efficiency reached depends large upon the intelligence and capabilities of individual physicians. The second phase of efficiency views the subject from the point of preventive medicine and constitutes a social problem. There is a mixed type wherein cure and prevention are closely bound together, as will be evidenced in the use of antitoxin for both the cure and prevention of diphtheria. The widespread prevention of disease depends upon the profession as a whole.

A moment's thought will convince anyone that pediatric efficiency, either for the individual physician or for the profession, depends upon many extraneous factors. General education and widespread traditions have their influence upon medical standards. Natural climatic conditions or unnatural conditions of housing or grouping of people may have a pronounced effect upon the efficiency of the profession in limiting disease. The mere legal standards of a community in so far as they permit child labor and night work

for women, distinctly limit the efficiency of pediatricists in eliminating industrial accidents or in safeguarding the health of individuals. Unrestricted marriage laws permit the continuation of the sad grist of defectives and weaklings.

Recognizing the social and economic forces which interfere with medical progress, it is important to train our medical students so that they may appreciate the difficulties with which they will have to contend. I realize that it is impossible to give a complete course in sociology to medical students with the present distribution of time, but I do believe that a physician with a knowledge of sociology is far better prepared to cope with social problems, as the future generation will demand.

We lay great stress upon the infant mortality rate. By virtue of its relative importance in community welfare, the study of its prevention demands commensurate consideration from medical schools. The crime of omission becomes more regrettable when one contemplates that fully one-fourth of the infantile death rate is due to preventable causes. The backbone of preventive work lies in widespread education. Physicians are urging more careful instruction in practical hygiene in our elementary schools and yet the practical social aspects of hygiene, particularly as related to child welfare, are neglected in the great majority of medical colleges in the United States. Even in the matter of infant feeding or general infant hygiene, the physicians are not fully prepared through collegiate instruction to enter upon their duties with credit to the institutions from which they have been graduated.

The teaching of pediatrics must be strengthened. Medical colleges should have specially-trained teachers for this subject, because of its immense value to humanity. With the decreasing birth rate, it becomes of the utmost moment that we study methods of conserving children from birth to puberty. The pediatricist must give more attention to social hygiene in his teaching.

Philanthropic societies and organizations interested in social welfare frequently complain of the poor medical advice that is offered to patients requiring social support. As far as such criticisms relate to infants and children, the teachers of pediatrics in the medical schools should hearken to the cry. The medical schools must recognize their responsibility for organizing their pediatric departments so as to give instruction and training in the hygiene of infancy as related to community life.

When one considers an enumeration of the methods employed by the city of Charlottenburg for reducing infant mortality, one may appreciate the full meaning of social pediatrics. To enumerate all that this little German city does for the purpose of bringing its children safely into the world and safeguarding them through infancy, is to suggest types of pediatric information which at present scarcely creep into any

pediatric department in this country. These social plans consist of:

1. Free meals for needy pregnant women.
2. Free board and lodging for needy pregnant women.
3. Free confinement for needy pregnant women.
4. Free housekeeper at home for needy women.
5. Free set of clothes for infant at home.
6. Immediate report of births.
7. Prophylactic babies' dispensaries.
8. Supervision of all boarding houses.
9. Temporary homes for mothers and infants.
10. Observation stations for doubtful social cases at temporary homes.
11. Stopping over stations between changes of boarding houses.
12. Medical dispensaries.
13. Beds for ill infants at four institutions.
14. Beds for convalescent children.
15. Family house.
16. Professional city guardianship of all.

It would be impossible to cover the whole gamut of social institutions in a pediatric course, but there is no reason why two or three hours at least could not be devoted to acquainting the pediatric students with the various types of institutions which are of value in conserving child life. Such information might be given in a didactic way or in connection with clinical material or through lantern slide lectures dealing with social resources. There might be a marked advantage in instituting a study of the various types of institutions which are related to the care of infants and children. In this connection it must be remembered that too few institutions treating children are under the control or even under the supervision and advice of the pediatricists of medical schools. There is every reason for urging that pediatric hygiene be taught in connection with the problems of communal health.

The value of midwives, the importance of health registration, the value of milk depots and infant consultations are certainly pediatric themes. The relation of day nurseries, boarding-out systems, convalescent homes and babies' hospitals are intimately bound up in the mortality rate. The value of school nurses, medical inspectors, school clinics, child labor laws and district nursing are not foreign material in a broad-visioned course on pediatrics. The necessity of open-air schools, the problems of the prevention of blindness, the detection and care of defectives, form topics in social pediatrics which are at present holding the attention of welfare workers, while the physicians are not fully acquainted with their relation to pediatric medicine. Child labor, model tenements, preventoria and school hygiene are among the topics upon which every pediatricist should be able to give

an intelligent opinion to his community in so far as they relate to child welfare.

Of the twenty million pupils in the public schools of this country, five per cent. have pulmonary tuberculosis; twenty-five per cent. suffer from defective hearing; twenty-five per cent. have enlarged tonsils and adenoids or enlarged cervical glands. Fully fifteen million children require attention to their physical health. The responsibility for securing a healthful environment for these children rests upon the community, it is true, but the pediatricist should be the leader in demanding proper conditions for our public school children.

According to Dr. Holt, 25.9% of infantile deaths are due to tuberculosis, acute respiratory diseases and contagious diseases. These different causes of deaths are "capable of considerable reduction, chiefly through proper housing, isolation, and medical treatment." Regarding treatment, the medical student may secure adequate information, but regarding housing or the relation of income to housing and room congestion, he is woefully ignorant. The relation of nationality to infant mortality is not within his ken. There may be some knowledge as to the value of certified milk for infant feeding, but there is not always the judgment which directs the best method of teaching a poor woman how to bring up her child successfully when a certified milk is beyond financial possibility. In fact, students are not always made to appreciate the full social or hygienic value of breast milk; nor are they given the necessary information as to the conditions, physical or social, which make it necessary to remove the child from the breast. Pediatricists must be social teachers and all the stress should not be placed on municipal nurses and health officers. At the present time, however, our medical schools are not giving the first steps in social pediatrics.

Practically fifty-two and a half per cent. of infantile deaths are caused by acute gastrointestinal diseases, marasmus and inanition and prematurity after the seventh month. This general type of mortality may be reduced through proper care and feeding. The principles of infant feeding are now being taught, though sufficient emphasis is not placed upon instruction in the methods and relative values of artificial feeding. Proprietary foods merit attention, so that their indications may be fully understood. It is proper that students should receive unbiased information as to the constituents of proprietary foods instead of being at the mercy of the semi-scientific statements of detail men. It is equally important that instruction be given regarding wet nurses, infant consultations, and baby farms.

Inasmuch as forty per cent. of the infant mortality is preventable and pediatricists may claim for its field one-fifth of the total population, the necessity for instruction in social hygiene falls especially upon the teachers of diseases of chil-

dren. The responsibility for general ignorance as to the sociological phases of medicine may in part at least be left at the gates of medical colleges. Proper pediatric education should include at least an outline of the numerous powerful social factors which are involved in the prevention of child morbidity and mortality.

The fundamental causes of infant mortality are poverty and ignorance. The physician may not be able to relieve poverty, but he should be able to correct ignorance and discipline its step-child, neglect. The medical problems are thoroughly bound up in the social aspects of infant mortality. The pediatricist, teaching methods of prevention, must take into consideration the underlying social conditions or his teaching must be inadequate. Pediatric medicine should be taught in its relation to community life. This is the only way in which the preventive phases can be presented to students in their true relative importance.

The relation of the infant death rate to the occupation of mothers during pregnancy and after labor is rarely mentioned in a pediatric lecture room. The value of home nursing and district nursing as opposed to public hospitals deserves careful consideration. In fact, the entire problem of institutions for children from the foundling asylum to the boarding schools affords much valuable information for the pediatricist. How many pediatricists ever consider what type of case really should be sent to a babies' hospital and what type will have a better chance of living if kept at home?

Eighty-five per cent. of infant mortality occurs among children receiving artificial foods. The problem of municipal milk supplies and milk sanitation involves some fundamental social concepts that might well be applied to pediatrics.

The relation of poor ventilation, room congestion, baby farming, over-dressing, vital statistics, housing, playgrounds, recreation facilities, sex hygiene, special classes for the tuberculous, the cripples, the blind, and the countless other aspects of pediatric hygiene merit consideration in a course that is designed to train men in the prevention of infant mortality and in the conservation of childhood. Eugenics, illegitimacy, alcoholism, prenatal care, milk stations educational classes and social service in connection with dispensaries and hospitals are special problems that are bound up in decreasing the death rate in infancy and childhood. Social pediatrics should place stress upon them. To teach adequately the conservation and protection of infancy and childhood, medical schools must be socialized in spirit. The pediatric departments, particularly, must participate in this new awakening because the problem of lessening one-third of the total mortality comes within the scope of pediatric work.

A full consideration of the social origin of many of the deaths that occur during childhood

marks a new epoch in rational etiology. Physicians of the future will not be able to escape their responsibility for possessing knowledge upon this subject. The medical schools must readjust their teaching of pediatrics so as to supply the type of information which is most necessary for protecting the community from the plague of preventable diseases. The students are entitled to receive lectures upon social questions as related to the causes of infantile diseases and they should be given some training in the value of the various types of institutions that exist for the prevention, control and relief of diseases. Social pediatrics simply means teaching pediatrics in the light of the social bases of disease.

If pediatricists are to be leaders in the preventive medical work that is now the present ideal in medicine, the pediatric teachers must be aroused to their responsibility. The teachers in the medical schools must become conscious of their duty in the matter of affording adequate training to the students who go to them for the purpose of being trained along the lines that will develop them into the finest type of efficient, conscientious, social pediatricists. In short, social pediatrics must be taught. When this time comes, the graduates of our medical schools will receive from the pediatric departments the training which indicates an understanding of the problems of humanity. The graduates will go out into the world in possession of knowledge, confidence and ambition, born of a consciousness "that none of us liveth to himself and no man dieth to himself."

Discussion.

DR. L. E. LAFETRA, of New York, said that he was glad to have heard two such excellent papers, but the ground covered was too great for adequate discussion in the time allotted. Those working on the problems involved had come to the conclusion that they were largely dependent upon three factors: I. The family income, involving the efficiency of the head of the house. This problem must go back to the elementary school; the boy should be trained to be capable and efficient as a breadwinner and to take his proper place in the world. II. Home economics. The girls must be trained in the making of a home and in child hygiene. This was a problem which must be faced and taken up so that girls might be trained for the sphere which they would most likely be called upon to fill. Not all school-girls can go to college and not all who go become teachers; the large majority are likely to marry, and they should be prepared for their work. III. Eugenics and all that it implied.

The instruction in the medical schools should be broadened, but the question was how to secure this benefit. Of course the pediatricist should be a leader and teacher and must have knowledge, both theoretical and practical. There

were three ways in which this could be accomplished: 1. These practical sociological problems could be presented in two or three lectures in such a way as to fasten the attention of the student upon them. 2. The student in the outpatient department could be made to visit the homes of the patients and he could thus learn at an earlier time the exact conditions with which he would have to cope. He formerly learned this during his ambulance service or in the care of maternity cases. 3. When the student occupied the place of medical clerk in a hospital, conditions in the homes might be brought to his attention by having him copy the reports of the visiting nurses, and by going to the homes and seeing the conditions for himself.

At Bellevue Hospital they had a sheet of social history which told of the housing conditions; the history of the father, nationality, income, occupation, habits, etc.; family conditions, whether father and mother were living together or separated, etc.; whether there was any insanity in the family; whether the parents spoke English; how the children were cared for, whether by the mother or a brother or sister; what the sleeping conditions were, whether the child slept alone; whether it had artificial or breast feeding and whether the family had ice or not, as well as how the milk was prepared. They were also asked with regard to outings, for it was often impossible for the child to be taken out. Such facts if studied by the medical student would emphasize the importance of social conditions. The points that Dr. Wile had made were very important.

As to prenatal care, there was no doubt but that such instruction in hygiene and eugenics would lower the infant mortality.

HUMAN SERUM TREATMENT FOR HEMORRHAGIC DISEASES OF THE NEW-BORN.*

By JOHN EDGAR WELCH, M.D.,
NEW YORK.

AFTER having several times communicated to the profession my experiences with the use of normal human blood serum in the treatment of hemorrhagic conditions, I feel that further mention of the matter should be prefaced by an apology. Notwithstanding frequent past contributions on the subject I rather feel it my duty to again present it; first, because extensive experience with the method has justified the early sanguine hope aroused by its first successful use; secondly, to compare it to other methods which have been proposed as substitutes for it; thirdly, to answer queries which have come from all over the country concerning the collection, preparation and administration of the serum.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

I shall not take the time allotted to this paper in reciting the histories of cases in which bleeding has been controlled by this method but instead will refer you to my original preliminary report on this subject published in June, 1910, in the *American Journal of the Medical Sciences*, in which many typical cases are detailed which read somewhat like the following account of a baby seen within the past few days:

Baby M. Normal, easy delivery, weight at birth 9 pounds, rosy and healthy, cry normal, nursed normally. On the third day slight bleeding from the vagina was noticed. Within a few hours the gums began to bleed and the bleeding from the vagina increased considerably. At the end of twenty-four hours there was considerable bright red blood passed in the stools. Bleeding continued and increased in quantity from all these points until the third day, when in addition hemorrhagic spots appeared beneath the skin. The child developed a gradually increasing temperature which reached 103 degrees on the fifth day. The weight rapidly declined and the voice grew very weak. Food was refused on the fifth day and at this time there was a slight green streaking of the stools which had a very offensive odor. Normal human blood serum injections were begun at midnight on the fifth day. One ounce was given hypodermatically and repeated twice daily for four days. The bleeding began to diminish in a few hours and at the end of forty-eight hours had ceased entirely and the child rapidly regained its normal functions. This case is typical of the class, the only variation lying in the varied distribution of the hemorrhages.

The primary hemorrhage often takes place from the cord or a slight abrasion from the forceps' blade. The bleeding may be an apparently insignificant, continuous oozing for several hours until a certain point is reached, when suddenly multiple bleeding points will develop anywhere or everywhere in the body which will, if not controlled, soon exsanguinate the child. This sudden serious turn to which these babies are liable points out the necessity of employing early the serum treatment for controlling what appears, often in the beginning, to be a simple hemorrhage. In several instances I know of fatal results where the attendant has watched a slight bleeding point carefully for several hours intending to begin serum injections should the bleeding become serious, when suddenly fatal hemorrhage developed in internal organs causing death before the serum could be collected. On the other hand, when a fatal trauma has not complicated the situation, experience to date has demonstrated that the subcutaneous injection of normal human blood serum will control 100% of this type of hemorrhage.

In relation to this subject of hemorrhage and its treatment by serum, there are factors of causation and elements in the cure which still require much future complicated research to

elucidate. Enough, though, has been brought to light as to conditions underlying nontraumatic hemorrhage and as to certain positive reactions of serum in coagulation experiments *in vitro*, to warrant the advancement of certain theories.

The manifest hemorrhages that characterize this disease are but a symptom and there is much evidence that we are not dealing with a disease of the blood, but one of the general tissues and organs of the body. The blood has been classified as a tissue with a fluid intercellular substance. In being less stable, it differs from other tissues which in very early embryonic differentiation assume a definite type of structure and adhere closely to it throughout life. A fibrous tissue fiber springs always from a fibrous tissue fiber, a liver cell always from a liver cell and in general any tissue cell from a parent cell of its own type. In the blood we have a tissue of a polygenetic origin, the cellular elements of which spring from several sources and the fluid from one avenue of absorption, the gastrointestinal tract. The serum contains complex albuminous bodies and carbohydrates representing fresh food together with exchange products derived from the general body tissues. Derangements of tissue function in whatever organ will always contribute malproducts to the circulating blood which will in turn bring them in contact with other tissues, thereby creating a liability to extended damage.

Howell has proven that a product originating in the general tissues is to be found in the tissues of mammalia which are the subjects of hemorrhage, the effect of which is to allow coagulation to proceed. The mechanism of coagulation in the light of research exhibited by Howell is as follows: In the normal blood are found fibrinogen, thrombin, antithrombin and calcium. Coagulation does not take place because the antithrombin holds the thrombin in check by a loose combination. Immediately hemorrhage takes place thromboplastin is supplied, which neutralizes the antithrombin. The calcium of the blood then activates the thrombin which now forms a combination with the fibrinogen and produces the coagulum. But for the thromboplastin neutralizing the antithrombin coagulation would be impossible and hence hemorrhage by *rhesis* would invariably be fatal. In the proper understanding of the etiology of hemorrhage it is important to know whence the origin of thromboplastin. It is probable, though the best of proof is lacking, that it may originate in the blood platelets in mammalia. In great quantities it is produced by most if not all of the body tissues as extracts from these will always cause prompt coagulation of the blood with the production of a much firmer coagulum than is ever found in a natural clot. If the tissues of a fowl be carefully separated widely from one of its arteries and the artery severed

and the blood allowed to spurt into a vessel, or better if a cannula be placed in the artery to prevent contact of the blood with the tissues, clotting will be very much prolonged, one, two or three hours and even sometimes it will not clot at all. On the other hand if the blood, as it spurts from the artery, be allowed to come in contact with the tissues about the wound, clotting will take place in a normal manner. Also, if a tissue extract made from the fowl be added to the uncoagulated blood collected through a cannula, clotting will take place promptly. We now understand that clotting is a process in which the general tissues take a part. The arrest of hemorrhage by *rhesis* must necessarily be caused by a clotting mechanism, but the hemorrhages of the new-born do not belong to this class.

The escape of blood from the blood vessels may be due to an altered state of the circulating blood, an injury to the endothelial lining of the vessel and an increase in the blood pressure. The increase in blood pressure gives hemorrhage by *rhesis* and does not concern us in this connection. The first two factors are really but one in that the endothelium of the blood vessels receive their injury through deleterious agents brought to them through the circulating blood. It is as a result of such injury that we have the hemorrhages of the new-born, and may or may not have a retarded coagulation time.

As a forcible example of hemorrhage belonging to this category may be cited those following the introduction of snake venom. If this substance be injected into an animal there appear multiple hemorrhages throughout the body. The effect is produced through a cytolytic action of the venom directly upon the endothelium of the blood vessels, thereby allowing the red cells to pass readily through the vessel wall into the surrounding tissues. Such injury to endothelium may be caused by various toxic states, which all have one feature in common and that is the injury of the lining cells (endothelium) of the blood vessels in such a way as to allow the escape of blood. The cloudy swelling of these cells seen on microscopic examination indicates a disturbance of their nutrition. In enumerating the toxic states which may produce this disturbance may be mentioned bacteremia, in which the toxin of the organism circulating in the blood is responsible. The majority of the cases derive their poison from the gastrointestinal tract, especially the colon, from the contents of which often very foul odors of decomposition are well marked. Sometimes the poison of syphilis is responsible. The bleedings sometimes come in emaciated children at the end of a period of starvation in which the metabolic products of suboxidation play the roll of disturber.

We have then, as a sufficient cause for the hemorrhage, an injury to the endothelium of the blood vessels. The coagulation time of the

blood may be increased if the toxine has impaired the capacity of the general body tissues to form thromboplastin in sufficient quantity to neutralize the antithrombin. Occasionally such impairment does not exist and we then find a normal coagulation time of the blood.

The literature is replete with discussions as to the mechanism by which these hemorrhages are controlled and it seems generally agreed that the effect is brought about by the injection of some coagulating substance. Strong issue can well be taken with all such conclusions. Such a substance injected would act as an antigen and stimulate the production of an antibody which would neutralize it. The hemorrhages are not controlled by a coagulation process. The human serum as a controlling agent seems to perform its function by virtue of its food value. It contains molecules which the deranged cells, both endothelial and general, can readily assimilate by absorption or osmosis and thereby easily restore their equilibrium, in the case of the endothelium rendering the inner wall of the blood vessel impervious to blood and restore the power of the general tissues to produce thromboplastin, thereby reducing to normal the coagulation time in those cases in which it has been delayed. Clots do not form in the bleeders which have been controlled by the human serum injections. To the contrary, the hemorrhages are quickly absorbed without clots having appeared.

One ounce of the serum is given at each injection, twice daily to moderate bleeders; to those bleeding profusely it should be given three times daily or every four hours until the bleeding is under control, which is usually within twenty-four hours. It is best given subcutaneously, very slowly and with gentle massage over the site of administration until all of the serum injected shall have been taken up by the circulation.

After having had one uncomfortable experience following the intravenous injection of four ounces of human serum, I feel it my duty to condemn this method of administration. The subject was an adult female affected with bacteremia. Immediately after the injection she became very cyanotic, respirations rapid and shallow and the pulse extremely rapid and thready. There was an anxious facial expression and the patient's ideas became much confused. These symptoms lasted about ten minutes when they gradually disappeared. Recent researches have demonstrated that the intravenous administration of a homologous serum will cause hyaline thrombosis from the blood platelets in the lung capillaries. This is the condition produced in my patient and is identical with some of the changes often produced in the direct transfusion of blood.

Serum sickness or anaphylaxis never follow the use of normal human blood serum. If, however, the serum be allowed to stand too long, until a clouding occurs, slight fever will be

produced by its subcutaneous administration. It should be used within forty-eight hours after collection in order to avoid precipitaton and to get the full effect of the complement content, an apparently very essential element, which deteriorates very rapidly on standing.

Before discussing other methods which are more or less in use and stoutly advocated by many, certain points as to the condition in which these patients are usually found should be taken into consideration. In the first place, as a rule, the condition of shock is present accompanying which there is a subnormal blood pressure. In addition the general tone of the tissues is lowered and they are in a condition of cloudy swelling and in the case of the liver and kidneys, more or less fatty degeneration. A very important change in the blood is a reduction in the complement following the hemorrhages. This can be easily proven by animal experiment. If a guinea pig be bled on two successive days and the complement be used as a part of a hemolytic system, such as that employed in the Wassermann test, it will from the second bleeding of the pig be found much reduced in quantity. We have then as a result of hemorrhage shock, lowering of blood pressure, lowering of the general tissue tone and a reduction in the quantity of complement. Emphasis has been placed on these changes because they should be borne in mind if one contemplates using other methods than human serum injections, especially horse serum.

The harmful effect of alien serum injections, i. e., from one species into another, has been so thoroughly settled by extensive research from all quarters that their deleterious qualities are no longer a mooted question. Enumeration shows the following: Intravenous or subcutaneous administration causes focal necrosis of the liver and extensive hyaline blood platelet thrombosis in the capillaries of the lungs; the tendency to serum sickness and anaphylaxis, with which are associated a reduction in complement, lowering of blood pressure and sometimes interference with general nutrition. One adverse influence which should have special mention is the fact that if more than a certain quantity be used the coagulibility of the blood is decreased and even active hemorrhage may be produced. Singly or collectively, these untoward effects produced in an infant of a few hours or days, which has at best but a feeble grasp upon life, might readily turn the tide against him and contribute speedily to his death. Assuming that such would be the case in rare instances, I believe that none of us wish to take a chance even in a fractional per cent. of our patients.

Whole blood injections are advocated by many as the proper procedure in this condition. When whole blood is injected we must bear in mind that about fifty per cent. of the substance we inject is serum and fifty per cent. cellular elements, which remain in the tissues as foreign bodies and must consume considerable energy in

the process of their absorption. In the formation of antibodies required to dispose of these cells more energy is required of an already reduced individual. Ehrlich and Morgenroth showed by experiment that goat's blood injected into a goat stimulated the production of a hemolysin which they designated as isolysin. Furthermore they say: "In pathology, the changes foremost to be considered are those resulting from the absorption, by an organism, of its own cell material. Such occasions are presented by many different diseases. Keeping to the blood, for example, if an individual suffers a considerable subcutaneous hemorrhage or one into a body cavity, * * * the essential conditions, just as in the experiment, are given for the reactive formation of substances possessing specific injurious affinities for these blood cells." The consumption of energy required in removing large clots readily manifests itself by acceleration of the pulse and elevation of the temperature. In absorbing his own hemorrhage the bleeding individual has sufficient demand upon his reserve force without still more burdening it by the injection of more cells to be disposed of.

The direct transfusion of blood remains to be mentioned as a method of treating these hemorrhages. From what I have seen of this procedure I feel conservative in making the assertion that the operation, because of technical difficulties, is impossible in fifty per cent. of these infants. Of the remaining fifty per cent. on which it is possible, one-half will succumb to certain incidental phenomena, such as hemolysis, thrombosis or embolism. This leaves about twenty-five per cent. in which we may expect to get satisfactory results. With great technical difficulties in the way, problematic results and often distressing circumstances surrounding this method it seems to the writer scarcely justified as a measure to be used on these infants when the serum is so effectual, and easily administered and obtained.

The serum is very easily collected and kept in a sterile condition. A satisfactory technique is as follows: To a heavy glass filter flask of about 400 C. C. capacity, fit a rubber stopper having two perforations. Through one perforation is inserted a fusiform glass tube containing a piece of cotton. Through the second perforation is inserted a U-shape glass tube, to the outer end of which a needle, caliber No. 19, is attached by means of a piece of soft rubber tubing. The outer limb of the U-tube, carrying the needle, is then cotton-plugged into a small test tube and the entire apparatus sterilized at 150 degrees, dry heat, for half an hour.

In preparation for withdrawing the blood a tourniquet is placed around the arm just above the biceps and pressure enough exerted to almost obliterate the radial pulse. After extreme engorgement of the veins has been produced, the needle of the apparatus is inserted into a prominent vein at the cubital space and about ten

ounces of blood withdrawn into the flask. The rubber stopper is then withdrawn and a sterile cotton plug inserted into the flask, which is then placed in a slanting position, at room temperature (not on ice) until the coagulum has contracted and expressed the serum, which can then be decanted into a sterile flask and placed on ice for use as desired. Enough serum will collect in one hour for an initial injection and the beginning of the treatment need not be delayed longer.

In giving the injections it is advisable to use a glass syringe, which can be thoroughly boiled, as the use of chemicals for the sterilization of the instrument might cause some alteration of the serum, either by neutralizing or rendering it toxic.

I. SOME MOOT QUESTIONS IN MEDICAL EDUCATION.—II. THE STUDENT'S IDEALS.*

By HENRY L. ELSNER, M.D.

SYRACUSE, N. Y.

THE invitation to deliver the address at the opening of the session of 1913-1914 of The Long Island College Hospital was so cordially extended that its prompt acceptance followed and I wish at this time to express my thanks for the honor and for the privilege of addressing you. In accepting the invitation I looked forward to this occasion, appreciating fully the great pleasure which I was to have in meeting my friends, who are your loyal and earnest teachers, and the further privilege which I was to enjoy in extending the hand of welcome to a body of young men, all standing on the threshold of the calling of medicine, with no idea of the responsibilities to be assumed nor of the cares mixed with the innumerable pleasures which honest effort will supply.

I had at first decided to consider with you the history and the traditions of your College, but on investigation I found that it would be a work of supererogation to attempt to add anything to that splendid production of Professor Joseph Howard Raymond, which deals so eloquently and fully with your history and which tells you what you ought to know of the struggles through which your school has passed and of its splendid achievements often against adverse circumstances. It is unnecessary because of the completeness of Professor Raymond's work to mention on this occasion the names of those resolute men who forged ahead, ready to meet all demands made upon them with clear brain, earnest application and honesty of purpose. Increased requirements, the birth of new sciences, the application of new methods of investigation to our art throw increasing responsibilities upon med-

* Address delivered at the opening of the session of 1913-14 of the Long Island College Hospital.

ical faculties, forcing all reputable schools to strain every nerve that the student may enter the practice of his calling prepared to widen his horizon, with a full appreciation of the fact that the function of the college is to make it possible for him to build upon a secure foundation. It is a truism that a physician's estimate of himself and his ability during his student days and on the day of his graduation is enormously exaggerated. It requires but a short period of activity to convince him of his error. You will certainly some day appreciate the fact that in spite of a good showing at your final examinations you will never know less than at that time. Only by diligence and application throughout your course, with a full sense of your responsibilities will you make the superstructure so solid and enduring that those who are responsible for your future will together with you reap the reward which comes of honest application. I have decided today to consider with you:

I. Some Moot Questions in Medical Education.

II. The Student's Ideals.

I. Some Moot Questions in Medical Education. Let us bring the past and present together and consider a few questions which are claiming our attention today.

(a) The relative advantages of our system of educating physicians and that of Europe. (b) The comparative proficiency of the professions of America and the Continent. (c) The comparison of the methods of preliminary education and teaching. (d) The advantages of autopsies and the influence of our failure to autopsy all patients who die in our public institutions.

(a) Personally I feel that the continental system may be said to have some advantages because of the paternalism of the individual government, which makes it possible for the teacher to lead an independent existence, free from the cares of private practice, giving almost his entire time to the hospital, to teaching and to research. We cannot deny the fact that the interest of the student might at times be advanced in some directions if the attending physicians to our hospitals could afford to devote more time to the study of its material. This we could do if we were assured a competence sufficient to meet our immediate needs and were relieved of the responsibilities which rest upon us in the protection of our families. There are teachers of medicine in the German and Austrian Universities who devote at least three-quarters of the day to the hospital and to teaching. The incomes of these men from these sources are surprisingly large. On the other hand, is this an entirely one-sided question? I believe that our system has many advantages. The average student expects to practice along the broad highway; he comes in contact with disease in the hospital, in the homes of the wealthy, at the cotter's fireside, in the bog, in

the hovel, and in his office. He needs to understand the therapy of minor ailments, of ambulatory disease as well as the most serious maladies which often fasten the victim to a mattress grave. He needs to develop that humane side of his nature, that personality which makes him the friend, the confidant, indeed the support of men, women and children in all walks of life and under all conditions.

The limited field of the continental teacher within the walls of the hospital does not develop in the student that readiness to serve man and to treat disease, which I am fully satisfied is nurtured and sustained by the unselfish practitioner in our own country. I have cautiously observed our German colleagues in the care and treatment of their patients; their methods are usually thorough, they are slower, less keen to observe, however, than is the resourceful and practical American clinician, who spends only a part of his time in the hospital, a part in private practice, the remnant with his books, in his laboratory, and in the study of general literature. If the personality of the teacher is sufficiently forceful, if he has the ability to inspire his students to do thorough work; the selection of internes and assistants is made from material well trained, and there is that concert of action within the walls of the hospital, which has always characterized the relations of your own faculty to the institutions to which you have free access, making your senior year one of the application of your scientific knowledge to the art of medicine, the material within the hospitals and dispensaries will be so thoroughly studied and presented as to give you advantages equal, at least, to any which you could possibly receive within the walls of any continental institution; while you will reap added advantages because of the unlimited practice of your teachers. On the Continent men in the advanced classes are called during the clinic to stand by the side of the professor and to answer an occasional question or to assist in the physical examination of the patient. These are called "Praktikanten." I have been present repeatedly at the clinic of a man whom I consider the highest representative living today of all that is advanced in medicine, when these men have repeatedly during their senior year shown such poor preparation and displayed such unpardonable ignorance as would chagrin and deeply mortify any conscientious teacher on this side of the ocean.

(b) The comparative proficiency of the professions of America and the Continent.

The American is by nature practical, he sees quickly, he is level headed and is prompt to meet emergencies. His results of treatment compare favorably with those of English or continental practice. The attention to the details of treatment and to the comforts of the patients in hospitals is more thorough in our own than any other country. The percentage of errors in diagnosis is no larger here than abroad. The American

practitioner, as a rule, gets nearer the hearts of his patients than does the German or Austrian. He is less feared, his visits are anxiously awaited, he infuses new hope into his patient and when he leaves the room he has often left a light from which emanate rays of hope and comfort during long periods, even in the presence of disease the outcome of which is uncertain or positively grave.

(c) The comparison of the methods of preliminary education and teaching.

The elementary and secondary schools of Germany prepare men and women for the work of life much better than any other country. We cannot deny the fact that Germany is the land of efficiency today. The great object of German education is to train the individual "for a place and that place is his or her life work." In Germany every one is taught some kind of a trade. The German is earnest and serious during the plastic years of his life, too serious in fact. I have often wondered at this when traveling abroad. There is, as a recent writer has said, "a superior orderliness and over-cleanliness, an exalted exactness permeating the atmosphere." My observations of the German in medicine lead me to the conclusion that he enters its study with a more thorough preparation than does the American, that his preparatory methods lead him to the more thorough investigation of complicated problems, that he grinds with less friction, he is better equipped because of his training to surrender himself to detail work, but he does not because of his habits give more of his time finally to the study of the practical side of medicine, and when he enters practice, speaking now of the average graduate, he finds himself no better prepared to treat disease, to meet emergencies, to face the perplexing problems of practice than does our own average graduate. In fact, I am strongly of the opinion that the inventive genius of our students with their receptive minds, in spite of the handicap in many cases due to faulty preliminary training gives us a better rank and file of general practitioners than is found on the Continent of Europe.

We are not slow to recognize our shortcomings, the improved conditions which exist today making your entrance to yonder door more difficult than ever before, argue in favor of an evolution already far advanced in the preliminary education of the future physician, which will finally bring him to the medical college, ready to enter the study of medicine with qualifications equal to those required in any other country, but with superior native ability, which will lead to a stronger and a better profession.

(d) The advantages of autopsies and the influence of our failure to autopsy all patients who die in our public institutions.

Neuman, who recently visited this country, has severely criticized our colleges because of the paucity of post-mortem examinations in connection with the teaching of medicine, and because

we have too many heads to every department. His greatest objection was to the absence of a regular system of post-mortem examination; he held that "we cannot advance the science of medicine until we adopt the post-mortem system." In Austria the poor and rich alike who receive treatment in a general hospital must in case of death submit to a clinical post-mortem examination. I cannot agree with a leading New York clinician who, agreeing with Neuman, and in speaking first of our appointment system says, "It divides the opportunities for the productive study of disease into portions so small as to render profitable cultivation impossible." The history of our profession in this country disproves the correctness of this statement. The ability of the gentleman who is responsible for the statement and the illustrious scientific career of his own father, particularly as a diagnostician (Janeway), are strong arguments in favor of "profitable cultivation in our own country under existing circumstances." It spurs the individual to wholesome and honest effort to be associated with several men in a changing service, all able and earnest, anxious for success, eager to give the best which the science and art of medicine offers for the benefit of those in their charge. The division of service leads to greater care in diagnosis and to the application of the very best methods of treating disease. One tendency of the Austrian method has been to encourage therapeutic nihilism. Skoda, once the leader of medical thought in Vienna, a great diagnostician, was a therapeutic nihilist and his dictum, "Nichts Thun sei das Beste in der inneren Medizin," "To do nothing is best in the treatment of disease," has not been discarded by many whose sole object is to diagnose and then autopsy. Kussmaull in his "Jugenderrinnerungen," speaking of the methods in vogue during his student years, said, "Teachers and students entirely forget the sole object of medicine—the cure of disease," and many young physicians prided themselves because their treatment led to prompt post-mortems in which their diagnoses were confirmed. It is held by some that "because of the lack of scientific organization" we are fatally defective at the root of all training in diagnosis. Further, it is held that "medical diagnosis in this country, except for the few men of exceptional opportunities, is largely a matter of clever guessing and seldom knowing whether or not one is right." Let me say to you, gentlemen, that the training which you are to receive, without the obligatory post-mortem system, in your hospitals, will make you as good diagnosticians as you will meet in Germany, Austria, or in England. It is indeed discouraging to be faced with the statement of a teacher that "except for the few men of exceptional opportunities" diagnosis is "largely a matter of clever guessing." Your training and experiences will disprove this. By the thorough study of your cases and the application of modern methods you will learn to recognize the

prime cause of symptoms in over 90% of your cases. You will not infrequently go to the post-mortem room for a full explanation of symptoms to be disappointed by the failure of the autopsy to reveal any discoverable abnormality. You need not be disappointed if the surgeon fails by thorough search ante-mortem to find the cause of symptoms and fails to localize the lesion; he may have the diseased organ within his grasp or within the range of his vision and yet fail to recognize the true state of affairs.

We are not arguing against post-mortem examinations. We cannot deny that the position of the pathologist has become most important since the birth of pathological anatomy, as an independent science. It "solves its own problem." Experimental research has further strengthened the foundation of medicine and increased the importance of the pathologist. *We must have post-mortems.* It is a question, however, whether they are absolutely needed in all fatal hospital cases to make us able or average diagnosticians. You will derive enormous benefit from "conferences" where specimens of treated cases will be presented with clinical and anatomic diagnoses. These will have a wholesome effect in stimulating those in charge of the cases to thorough work, including keen and painstaking observation. Do not imagine that you will ever acquire sufficient proficiency to discover ante-mortem all of the hair-splitting departures from the normal which will be demonstrated at these conferences. These are interesting, delight the pathologist in direct proportion to your failure to detect them, they escape in spite of most searching investigation and do not argue against the diagnostic ability of your teachers.

It is the policy of this and all well organized schools, in all departments, to use all honorable means of confirming diagnoses by post-mortem examinations, but I am sure that I voice the sentiment of all who are responsible for your medical education that in spite of the fact that we live in a land where the patient is not forced to associate treatment with a positive post-mortem in case of his death, you will be launched into the profession well equipped to recognize and treat disease.

II. THE STUDENT'S IDEALS.

No man's life has served its purpose, has been truly successful or satisfactory which has failed to add something of value to the stock of human knowledge or has in some way been of service to mankind. Service is what is demanded of all men. Duty is a powerful word; when understood it is our most powerful lever. The humblest among us if he serves earnestly and conscientiously is as much to be encouraged and respected as is the greatest in his broader field of activity, each in his own way serves satisfactorily and advantageously. *The student must have ideals.* Your ideals must include the

serious determination to master your prescribed work and to do your duty toward the unraveling of the thousand unsolved problems of medicine.

You live in an age which promises much. There never was a time when serious and earnest endeavor received greater encouragement than today from all sources, more particularly from those who are able to provide the material assistance so much needed. Large centers of learning are no longer the foci from which alone knowledge, the result of painstaking observation or original research and experimentation flows. It requires the proper spirit, the willingness to serve, the application and the concentration or energies to succeed. Koch made his epoch producing discoveries and announcement from a hamlet which was almost unknown. There he patiently worked year after year with high ideals which he attained because of his persistence. Beaumont revolutionized the physiology of the stomach from an unknown quarter. McDowell and Marion Simms in the remote South made themselves immortal because they studied conditions which they met faithfully and thoroughly, never tiring, they worked with full confidence in their ultimate success. Boerhaave at Leyden was the best known physician on the Eastern Continent and brought students to that small center from all quarters of the globe. Von Behring, Pasteur, Lister, Metchnikoff, Flexner, Ehrlich and all, who within the past century have illumined medicine had ideals and would have reached the goal and attained greatness wherever stationed. The Mayos by their industry, skill and ability to organize, have erected a clinic which is today the most renowned on the Western hemisphere, in a town which has nothing to commend it but the presence of these men. There is not one of you who, if by industry, ability and honesty of purpose accomplishes more than the average man, though you practice at the four corners, away from the busy hum of men, cannot achieve success which will make you world renowned. You must rise above mediocrity if you would succeed. You must dip deeper into the study of the individual subject than does the ordinary student. You must work your way out through the quarries by diligence if you would reach the top rung of the ladder. In medicine you must be eager to serve man, to ease his burden, to improve his condition. In this way, prompted by the proper spirit, beginning today to lay the foundation for that glorious and successful future, you will fit yourselves for the practice of your profession; you will learn often to prevent disease, to recognize it when it is present and to cure if possible.

There never was a time when a young man of character and brains had a better chance of success in medicine than today. Whether the student enters into the broad field of medicine and remains active therein or finally devotes himself to some special line of work, which he should never do without years of preparation, whether

from the beginning he is captivated by the charms of the laboratory, continues in it to teach or to engage in research work, or whether he fits himself for that public position which appears to me today to offer enormous inducements, I refer more particularly to what is included in sanitary medicine, he has opportunities which will not only bring to him a certain competence but a rich reward because of the satisfactory results of his work in actual service to man. Within the next decade there will be a call for men to take charge of the health departments of municipalities, scientifically trained, which the profession will not be able to meet in numbers. It will be among your functions to educate the public to an understanding of the importance of preventative medicine by example; to disseminate the knowledge among the lay world which will serve to prove that you are straining every nerve to make your own existence unnecessary, because, as the result of your activities you will materially reduce disease, both the infectious and that dependent upon other preventable factors. The ideals which you have include the solving of many problems which engage our thoughts. What these are you will learn as you penetrate deeper into your studies and appreciate more than you can at present the limitation of our science and our art; these are so many and so varying in character that you will, if you are prompted by the true scientific spirit, find lines of work to which you will devote yourselves during the years to come. There is as a result of a search for truth in this and in all civilized countries a community of interests, in our profession, which is devoting itself to the solution of many perplexing questions, which is daily adding to our knowledge and is bringing us nearer the science for which we all yearn.

A recent writer has well said, "In the great world of men there is no passing mark but perfection." We appreciate the fact that it requires years to achieve mastery. In dealing with human life your ideal must be perfection. This you must strive to attain.

The text-books to which you are introduced are often plethoric and obese, at times their dimensions are discouraging, the process of assimilation is too often handicapped by a faulty metabolism which leads the novice to wonder whether his mental horizon will ever clear. Be not discouraged; gradually you will discover that

"Out of the shadows of night,
The world rolls into light,
It is daybreak everywhere."

All that you learn during your medical course will in some way broaden and develop you, much of it during the years of your practice you will forget without injury to yourselves or to your patients. If you are stimulated by the proper spirit of the student you will compensate for the loss by study and observation during the years of your practical activity.

Try to learn as much as your time will permit of the history of medicine and its literature. It is of incalculable value to train your minds to look at things from the historical standpoint. We have no time on this occasion to enter into a discussion of this subject, but I may be permitted to quote a paragraph from Fuller for your benefit and stimulation.

"That history maketh a young man to be old without either wrinkles or grey hairs; privileging him with the experience of age without either the infirmities or inconveniences thereof. Yea, it not only maketh things past present, but enableth one to make a rational conjecture of things to come. For this world affordeth no new accidents, but in the same sense wherein we call it a new moon, which is the old one in another shape; and yet no other than hath been formerly. Old actions return again, furbished over with some new and different circumstances." (B. M. J. 1902.)

The untrained mind has a heavy handicap which increases as the years pass. It is easy to get good training, easier than ever before. Culture and training have more opportunities and untrained minds fewer, not alone in the learned professions but in all lines of accomplishment. There is not one of you who at this moment is not ready to begin his work with the full object of working out his own career, that he may reach his fullest development for the greater benefit of his fellows and rebels against the thought that he "is merely to be the slave of the accidental circumstances that place him where he stands." This will require resolution with persistence and will include a fight against the temptations which beset the student. Some of you will fall unless you brace yourselves and remember the ideals which are before you and the love of those who glory in your conquests. *It will depend on the man whether he proves sufficiently strong to master himself.*

If you are in search of the direct route to true success, that success which is enduring, let me advise you to reach it through application, concentration and thoroughness, the systematic use of your time and energies to the day's work, and remember that the master word in medicine is WORK. Take nothing for granted, learn to investigate for yourselves. The scientist is a revolutionist and that he must remain. It is often difficult to concentrate, to be thorough, once the habit is acquired you are relieved and your work becomes a pleasure. "Concentration is the price the modern student pays for success." (Osler.)

"A life full of work and labor is no burden, but a boon, and enjoyment." This served as the text of Virchow's original thesis. Every day of good work is a day of greater pleasure. It is this spirit which must continue to inspire you. *You will find the moral force of scientific methods the greatest factor in modern medical practice.*

With the welcome extended to you today, we beg of you to begin right. Live up to the resolutions which you have made. The school and the student alike are responsible. You will be known as the race progresses. We hope that you will free yourselves from all oppression which will retard your progress. Beware of idle hours and dissipation, keep your eyes always intent upon the problems presented to you. You will find a ready response when the load is heavy, willing hands will be eager to help you onward.

The teacher of today is no longer considered an oracle, his plane is not above that of the student, he has no altar, he seeks your companionship to invite reciprocal relations for his benefit as much as our own.

Take advantage of the opportunity as it presents itself. Many have fallen because of lethargy when opportunity rapped at the door.

"Master of human destinies am I,
Fame, love and fortune on my footsteps wait;
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel, the mart, and palace, soon or late
I knock unbidden once at every gate.
If sleeping, wake—if feasting, rise before
I turn away. It is the hour of fate.
And they who follow me reach every state
Mortals desire, and conquer every foe
Save death; but those who doubt or hesitate,
Condemned to failure, penury, and woe,
Seek me in vain and uselessly implore,
I answer not, and I return no more."

How often have conditions long misunderstood, but finally correctly interpreted revolutionized medical science. A new light has illumined the path, the opportunity for the discovery of a fact given, the revolutionist sees the advantage and the conscientious work of a lifetime has been sacrificed on the altar of truth. This causes no pang to the true worker, his ideal is above material gain, his pride is in conquest, which means the subjugation of a relentless foe and he accepts the truth with thanksgiving, encouraged, in spite of the destruction which came to his fabric, to work on patiently and with renewed energy.

There is a growing tendency because of the large material which comes to the average hospital and dispensary toward haste, superficiality, carelessness, empiric and slovenly practice and consequent inefficiency. Resent this and protect yourselves against it.

"Every case which requires thinking, analysis and conclusion contributes to your mental and practical training." (Meltzer.) To give this mental and practical training must be the function of the college, and already there is a well organized effort to add to our present curriculum one year of hospital service. The voluntary seeking of hospital appointments by the large majority of recent medical graduates is most en-

couraging. Such a plan will strengthen our profession. With changed conditions, with a thorough appreciation by your faculty of the needs of your school, the endeavor on its part to take advantage of our modern methods of educating physicians, a new era of influence and prosperity is opened to you—a live student body.

It will take some time for you to learn how to accommodate yourselves to your surroundings, how to get the most out of the application to the task, how to direct your stroke that your energies may not be misdirected or entirely lost. Once you have learned to think, you have reached forward toward the ascendancy. We all appreciate the fact that precision in thinking and in observation is an exceedingly rare quality; it can be cultivated.

Gentlemen: Assist those who are responsible for your training, sustain their efforts that the objects of the school may be accomplished, that they may make of you not only competent physicians, but men of character and culture and together weave into a harmonious whole the science and art of medicine with humanity.

THE INDICATIONS FOR THE LABYRINTH OPERATION.*

By FRED. WHITING, M.D.,

NEW YORK.

A SYMPTOMATOLOGY which shall clearly establish the indications for operative measures in all inflammatory diseases of the labyrinth is, we fear, a labor of the somewhat distant future, for our acquaintance with labyrinthine conditions is a relatively recent one, and such knowledge as we possess, while very helpful in guiding us to satisfactory conclusions in our more simple cases, still falls far short of providing convincing evidence in those dubious and perplexing problems with which private and hospital practice so frequently confront us.

That critical study of the physiology of the labyrinth would result in a clear understanding of many pathological manifestations hitherto regarded as inexplicable, was only a reasonable expectation, but that so brief a period would suffice for the remarkable increase in our knowledge of labyrinthine conditions as the passage of the last three years has witnessed, is cause not only for hearty congratulation, but encourages us to hope that a correct interpretation of some of the most confusing and apparently irreconcilable contradictions is the promise of a not distant day.

Current otological literature abounds in studies and in intelligent contributions, the

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honest intent of which is to establish the supposed value of this or that obscure and infrequently observed symptom. Some of these observations will doubtless prove upon wider experience to be founded upon correct physiological data, and may be expected to provide valuable assistance in diagnosis, but many more are mere academic and even fanciful attempts to explain manifestations the significance of which we do not at the present moment at all understand, and concerning which a confession of ignorance should occasion mortification to no one.

Such consideration of the indications for operation upon the labyrinth as the allotted time and scope of this paper permit can comprise only those well-recognized and frequently encountered symptoms which have become a matter of common experience with all otologists whose work is conducted in large hospital clinics, and the writer will resist the temptation to introduce for the purpose of stimulating discussion a consideration of the relative importance of such symptoms as are not well established, adhering strictly to those manifestations of inflammatory diseases of the labyrinth which have passed the hypothetical stage and have received universal recognition for their undisputed value.

Pus contained in the labyrinth, no matter how small the amount, is a constant menace to the contiguous intracranial structures and, as one writer remarks, is quite analogous in its significance to appendicitis with regard to the abdomen. Left to itself, a purulent labyrinthitis may in time heal spontaneously, the contained micro-organisms losing their virulence and the exudate becoming organized, fibrous or calcareous. In a large percentage of cases, however, purulent affections of the labyrinth result in grave intracranial complications, meningitis, brain abscess, and sinus thrombosis, the high mortality of which diseases emphasizes the necessity of accurate diagnosis if we are to anticipate a favorable outcome for our operative procedures.

Inflammatory conditions of the labyrinth, for which we may properly consider the operative indications, may be conveniently comprised under four clinical divisions: (1) Circumscribed labyrinthitis. (2) Diffuse serous labyrinthitis. (3) Acute diffuse purulent labyrinthitis. (4) Chronic diffuse purulent labyrinthitis.

With the two last forms of the disease, we are more intimately concerned than with the first two, for it is to the insidious energies of diffuse purulent processes that most of the victims of labyrinthine disease fall a prey. We shall, therefore, dismiss with brief consideration, circumscribed and serous labyrinthitis, and devote most of our allotted time and space to a consideration of diffuse purulent inflamma-

tions, than which few inflammatory diseases exact so high a toll of mortality.

Circumscribed Labyrinthitis.—What, then, are the classical signs of circumscribed labyrinthitis upon whose expression we depend for a diagnosis of the condition? The existence of a circumscribed labyrinthitis is determined by the ability in the presence of at least a partial preservation of the labyrinthine function to elicit a positive fistula test. In these cases the process is limited to the terminals of either the cochlear or vestibular branches of the auditory nerve, and so long as it remains thus circumscribed, operation is not indicated. Hearing may be present or lost, but the absence of hearing does not necessarily imply a diffuse labyrinthitis, for the deafness may be due to degenerative atrophic changes.

Given a case presenting a positive fistula test and repeated functional examinations will enable an observer to say with certainty when it becomes diffuse, for if we find upon examination that the ear is responsive to the caloric test and the turning test is normal, although there is profound or even complete deafness, the condition is one of circumscribed labyrinthitis, and should not be subjected to operation. However, should we find on subsequent examination that the above-mentioned functions of the vestibular branch are no longer present, and if in addition we can elicit from the patient a history of vertigo, nausea, and vomiting having supervened during the interim between examinations, there is no occasion to doubt that we are dealing with a diffuse inflammation and operation is indicated. In other words, in the presence of a fistula test, with preservation of the functions of either the vestibular or cochlear terminal nerves, the subsequent loss of that function definitely determines that the process has progressed and assumed the gravity of a diffuse inflammation.

Circumscribed labyrinthitis usually occurs as an accompaniment of chronic suppurative otitis media, and if subjected to any operative measures, the radical mastoid operation should be undertaken. The mere presence of a fistula does not constitute an urgent indication for the radical mastoid operation, for such inflammation very often remains circumscribed indefinitely, and if the patient's vocation does not call him to remote districts where he cannot consult competent advisors, I believe, notwithstanding frequently expressed opinion to the contrary, that he is exposed to no great risk.

When we elect to do a radical operation for the cure of fistula, it is in the expectation that the free opening up of the middle ear cavities will remove the source or irritation from the inflamed area and permit the fistula to heal. The most common situation of the fistula is on the eminence of the horizontal semicircular canal, and when discovered, we should carefully avoid probing or curetting it, for by such ill-

advised meddling we may speedily convert a circumscribed into a diffuse labyrinthitis. It occasionally happens that owing to traumatism inflicted during the radical mastoid operation, especially in cases where only a superficial functional examination has been made, that an unrecognized circumscribed labyrinthitis has been transformed into a diffuse inflammation. When such an unfortunate experience results, it usually manifests itself within two or three days of the date of operation, and is recognized by the loss of function of that particular portion of the labyrinth which was functioning previous to operation. For instance, if the vestibular apparatus has been normal, we should expect, with the onset of inflammation, vertigo, nausea and vomiting, associated with rotatory and horizontal nystagmus toward the healthy side.

It now becomes a matter of paramount importance to determine whether the diffuse inflammation is serous in character, in which event no operation is necessary, or of a purulent type, which demands immediate operation. There are no hard and fast rules upon which we can depend for an exact differentiation between diffuse serous and diffuse purulent labyrinthitis, and we are practically compelled to rely upon the existence of some residual sound perception demonstrable in the bad ear, while using the noise apparatus in the good ear. If the patient hears loud speech through the bandage, the sound ear being excluded by the noise apparatus, we can make a positive diagnosis of serous labyrinthitis. If he does not hear, even with the bandage removed, we must perform a caloric test, using hot sterile salt solution. If this does not neutralize or reverse the spontaneous nystagmus, and if the fistula test is negative, we are dealing in all probability with a purulent labyrinthitis. Rarely we have complete destruction of function with diffuse serous labyrinthitis, but such border line cases are treated as if they were purulent.

Such cases, particularly if there is any rise of temperature, should be operated upon immediately, the labyrinth being opened wide in order to prevent the spread of infection to the cranial cavity. (Braun-Friesner.)

It occasionally happens that the fistula, notwithstanding that the radical operation has been performed, fails to heal and remains as a granulating island surrounded by an epidermatized cavity. Under these circumstances, the case must be re-operated, and the necrotic area about the fistula removed. A complete labyrinthine operation, however, should not be done.

In this connection, a very important consideration may arise: For instance, a patient may present himself who is entirely deaf in one ear, and who suffers from chronic suppuration with fistula in the useful or hearing ear. It requires no argument to establish the folly of operating upon such an ear save in the presence

of a diffuse purulent labyrinthitis, when the preservation of life would demand the sacrifice of the patient's remaining audition.

Diffuse Serous Labyrinthitis.—Cases of diffuse serous labyrinthitis do not require operation. They usually subside in a few days, but must be carefully watched, and if entire loss of function supervenes during the active stage, must be operated upon the same as if we were dealing with acute diffuse purulent labyrinthitis.

Acute Diffuse Purulent Labyrinthitis.—A decided diversity of opinion exists regarding the indications for operating in acute diffuse purulent labyrinthitis. Some of the Vienna men maintain that if the patient exhibits no symptoms demanding immediate surgical interference, we may treat the case on the expectant plan, in the hope that the pus may become walled off from the cranial contents, and that we may combine the mastoid operation with extirpation of the labyrinth after the expiration of ten days. Other operators are equally positive in the opinion that an acute diffuse purulent inflammation of the labyrinth should be submitted to operation as soon as the diagnosis is made. It is manifestly impossible to reconcile views so directly at variance, and a wider experience and more numerous observations must be at our disposal before we can pronounce an unqualified approval of either attitude.

The contributions to the indications for operation in acute diffuse purulent labyrinthitis have, during the last few years, occupied a prominent place in the otological literature of all nations, and the pros and cons of the above positions have been earnestly debated. Among recent contributions may be mentioned one by Dr. John Rae, which for completeness of exposition and logical expression leaves little to be desired in a convincing summary of operative indications. Rae says: "The spontaneous evidences of labyrinthine involvement refer wholly to the vestibular apparatus, and are to be observed only during a few days. They include vertigo, with nausea and vomiting, spontaneous rotatory nystagmus, and disturbances of equilibrium.

"They are due, in the first place, to irritation of the end organ of the vestibular nerve on the diseased side. The patient is dizzy, even when lying in bed with the eyes closed. The vertigo is accompanied at the outset by nausea and vomiting. The spontaneous rotatory nystagmus is to the diseased side, following the law that stimulation of a center on one side gives rise to nystagmus to the same side. This nystagmus can at first be observed in any position of the eye, and will, of course, be increased in intensity on rotating the eyeball in the direction of the quick component. Nausea and vomiting quickly cease, and the spontaneous nystagmus diminishes in intensity, so that after twenty-four or forty-eight hours, depending on the rapidity of the extension of the disease, and the destruc-

tion of the end organ, it may have entirely disappeared or be evident only on extreme rotation of the eyes.

"The disturbances of equilibrium follow the usual law of such when of vestibular origin and associated with nystagmus. The patient tends to fall in the direction opposite to the quick component of the nystagmus, and the direction of falling can be altered by changing the position of the patient's head. As the disease progresses, the delicate terminals of the vestibular nerve are destroyed and cease to convey stimuli to the centers. Nystagmus to the side of the bad ear, which has been gradually diminishing in intensity, must necessarily cease entirely with the complete destruction or paralysis of the end organ.

"There now results an imbalance of the tonus of the centers on the two sides, with the temporary result that the activity of the center on the good side is in excess of that of the other. There accordingly now is brought about a spontaneous rotatory nystagmus to the good side. At first of great intensity, this nystagmus is to be observed in all positions of the eye. Within twenty-four to forty-eight hours, as equilibrium from the centers is gradually restored, this spontaneous nystagmus diminishes in amount and as it does so will be best observed on turning the eye in the direction of the quick component.

"This nystagmus to the good side may also be accompanied by some dizziness, and even vomiting, but neither will be so marked as on the invasion of the labyrinth, when the spontaneous symptoms could be directly attributed to the diseased ear.

"The Functional Examination of the Hearing.
—The importance of the hearing examination cannot be exaggerated. By means of it, in conjunction with the vestibular examination, we determine whether or not the labyrinthitis is diffuse. Remembering the rapidity with which the acute disease progresses, the tests must be repeated at very short intervals. In the earlier stages, while the spontaneous nystagmus is still to the diseased side, the functional examination may give us the evidence of a lesion in the conducting mechanism. A few hours later, Corti's organ, meantime having undergone destruction, there may be absolute loss of hearing. With the good ear excluded by some suitable apparatus, the bad ear should be tested for the voice, the hearing for both the low and high notes should be investigated; the absolute bone conduction determined, and the Weber and Rinné tests applied. In the earliest stages the functional examination may be just what we would expect from the middle ear conditions, the voice may be fairly well heard; the patient may be deaf for low notes, hear the high notes well; have increased bone conduction; have a negative Rinné, and refer the Weber to the bad ear. With complete destruction of Corti's organ, the

picture will be entirely different. There will be a complete loss of hearing for the voice; no fork will be heard either by air or bone conduction, and the Weber will be referred to the good ear. The importance of repeated examinations at short intervals is again emphasized."

The diagnosis of acute diffuse purulent labyrinthitis presents under ordinary circumstances but few difficulties. To illustrate: A patient who is under observation for a suppurating middle ear, the hearing of which is good, and who has previously complained of no vertiginous disturbances, is suddenly attacked with vertigo, nausea, and vomiting, associated with profound deafness. Upon examining the eyes, we find spontaneous rotatory nystagmus to the good side, which is uninfluenced by the caloric test. Upon testing the function of the acoustic labyrinth, we find deafness for all sounds, and the Weber is, of course, referred to the good ear.

It is quite needless and indeed almost impossible to subject such a patient to many of the tests employed for the purposes of demonstrating the function of the static labyrinth. The diagnosis is clear, and if further corroboration is demanded we can summon to our assistance the evidence of the reaction movements, in which we possess a means of determining whether the disturbances of equilibrium are of vestibular origin or not. If the tendency to fall is in the direction of the slow component, whatever the position of the head, we can no longer doubt that the disturbances are of vestibular origin.

The severity of the symptoms of labyrinthitis is proportioned to the intensity of the disease process, and particularly to the rapidity with which the latter involves the nerve endings. The more rapidly the function is destroyed, the more severe are the resulting symptoms.

In the presence of a labyrinthine inflammation presenting the foregoing picture, we are called upon to decide as to the wisdom of operating upon the labyrinth at once, or of deferring operation until symptoms indicative of beginning meningitis present themselves. The writer inclines to the view that an early operation offers the patient a greater degree of security than the delayed procedure, especially when the acute labyrinthitis supervenes upon a chronic purulent otitis media. In the event, however, that the attacks complicate an acute purulent otitis media, I have seen excellent results follow the simple mastoid operation, said operation being performed without the use of chisels and mallet, thus reducing the danger of spreading infection through the agency of the shock caused by the blows of the mallet. When, however, the simple mastoid operation has been thus resorted to, as a palliative measure, as it were, in acute diffuse purulent labyrinthitis, the operator instead of relaxing should redouble his vigilance in the interest of his patient, and be prepared upon complaint of headache, if at-

tended with temperature above 100°, to do labyrinthotomy at once.

Chronic Diffuse Purulent Labyrinthitis.—In chronic diffuse purulent labyrinthitis, the picture presented is symptomatically a negative one, and all the spectacular features of acute labyrinthine invasion are wanting. There are no symptoms referable to any functional disturbance of the vestibular apparatus, and not infrequently it happens that the patient, notwithstanding persistent interrogation in regard to previous vertiginous disturbances, denies ever having experienced any such manifestations. Either the labyrinthine invasion has progressed so insidiously as to occasion no discomfort, and hence has not attracted the attention of the patient, or the destruction of the organ occurred in infancy or early childhood, at a period of life when the victim was too young to retain a recollection of the experience.

Most cases of chronic diffuse purulent labyrinthitis present only the usual symptoms of chronic purulent otitis media and come under observation because they are seeking relief from the annoyances of an intractable purulent ear discharge of long standing. Upon examining such cases, it will be found that all the labyrinthine functions have been lost. There is no hearing, and the caloric and fistula tests are negative. But a few years ago, we operated upon such cases, with no thought of any disastrous consequences resulting, and in the majority of instances the patients did well, but a certain proportion of them, for some unaccountable reason, developed meningitis and died. We now realize that these unexplained fatalities were due to the unsuspected presence and unappreciated dangers of chronic diffuse purulent labyrinthitis, which in consequence of the traumatism inflicted during the performance of the radical operation, had speedily extended to the meninges and resulted in the death of the patient. With our present appreciation of the dangers incident to the radical operation in the presence of diffuse labyrinthitis, we are fully impressed with the necessity for definitely determining the presence or absence of a functioning labyrinth in any case of chronic purulent otitis media upon which we intend to operate. Should our examination demonstrate the existence of chronic diffuse purulent labyrinthitis, we have no choice regarding what operation we shall perform. We must either do the labyrinth operation or none at all. There are differences of opinion on this subject.

A consideration of the wisdom of operating upon such cases, so long as they can remain under the observation and direction of competent advisors, raises a question upon which there are decided differences of opinion which I shall not attempt to reconcile. We must, moreover, remember that there exist cases of chronic purulent otitis media with entire loss of labyrinthine function which are not necessarily examples of

chronic diffuse purulent labyrinthitis. They may represent cases which have healed completely, and Ruttin calls attention to the fact that in such cases the rotation test acts peculiarly. Upon turning the patient, he finds that the after nystagmus toward the bad side persists as long as toward the good side, but that both are shorter than normal. This experiment he calls the compensation symptom. Unfortunately, we have no satisfactory method of discriminating between a labyrinth which has healed and is therefore harmless, and one which is still suppurating and hence is a menace to life. The claim that a deposit of new bone upon the inner wall of the tympanum in the region of the horizontal semicircular canal in the presence of the compensation symptom is satisfactory evidence of a healed labyrinth does not appear sufficiently substantial to warrant its acceptance.

To summarize the indications for operation in chronic diffuse purulent labyrinthitis, we may conclude that any case of chronic purulent otitis media in which there is an entire loss of hearing, as demonstrated by the use of a suitable noise apparatus, and in which the caloric and fistula tests are negative, and which, furthermore, gives a history of previous vertiginous manifestations associated with nausea and vomiting, is a proper case for operation.

As to when it becomes necessary or expedient to operate, there may be many considerations which will influence our decision, but all observers agree that if any operation is undertaken it should provide for the extirpation of the labyrinth.

A condition which we occasionally encounter in chronic diffuse purulent labyrinthitis, and to which a word of consideration may properly be devoted, is sequestration of a portion of the labyrinth. As an indication for operation, the presence of the dead bone is of course clear, but the extent to which the operation shall be carried is not always so evident. The fact that nature has made an effort to separate the diseased from the healthy part, and has marked out the boundaries of the latter, appears to indicate that a conservative course should be followed, and that nature's hint should be respected. There are some cases on record where such conservative treatment has led not only to successful healing, but to some restoration of function as well.

In a considerable portion of all cases of necrosis of the labyrinth, facial paralysis occurs, and when it appears as a new manifestation in a case of chronic diffuse purulent labyrinthitis which has been under observation, it constitutes an indication for immediate operation.

Inflammatory diseases of the labyrinth are so distinctly local in character that we can hope for no assistance in differential diagnosis from any alterations in range or frequency of temperature, pulse, and respiration, until the process has extended beyond the boundaries of the labyrinth and invaded the intracranial structures, when

alarming symptoms speedily present themselves. In similar manner, the methods of the laboratory fail to aid us in diagnosis, for the blood count does not furnish any reliable index for guidance until the disease has progressed so far that more direct and convincing evidence is at our disposal, a fact which is easily understood when we realize that the inflammatory process is enclosed in a dense bony capsule, the contained structures of which may be entirely destroyed without the infection being the occasion of any systemic disturbance. In fact, until the inflammation has spread beyond the confines of the labyrinth and meningitis is established, we can expect no assistance from a blood count, and after this unfortunate result has supervened the information furnished by blood examination will be superfluous.

Lunivar puncture likewise has proved a vain reliance as an index of value in determining the indications for operation on the labyrinth, for save as an increase in the tension of the cerebrospinal fluid aids us in recognizing the beginning of meningitis, spinal puncture has afforded but little diagnostic assistance in inflammatory disease of the labyrinth.

The symptomatology of labyrinthitis, with its bearing upon the indications for operation, is far from a completed study, and the accepted conclusion of today is liable to be ignominiously discarded tomorrow; none the less, our progress in this chapter of otology is most gratifying, the more especially as the complexity of the functions to be interpreted are almost bewildering in their nature.

The credit for much that has been accomplished in the critical study of labyrinthitis is rightfully awarded to the Vienna School, but in properly bestowing honor where honor is due, let us not forget the scholarly studies of the physiology of the labyrinth by Shambaugh, or the admirable publication by two recent recruits to otology, Braun and Friesner; while the sterling contribution of Richards to the surgery of the labyrinth remains today as it was when he wrote it, an otological classic.

CENTRAL LACERATION OF THE PERINEUM.*

By ALBERT G. SWIFT, M.D.,
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GENTLEMEN:

WHILE in charge of the outdoor service of the New York Lying-In Hospital in September, 1912, I saw the following rare and interesting case, which I am reporting both because of its rarity and because after analyzing the various causes that have been assigned for its occurrence, I hope to reduce them to a few causes which will apply to all cases:

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

The patient was Mrs. Rosie Fox, age 24 years and a primipara who had sought assistance on September 4th, 1912, at 9 a. m. after she had been in labor some time. When the attendant arrived at 9.45 a. m. he was told that the membranes had ruptured at 9 a. m. On examination of the patient he found the occiput presenting with the sagittal suture running directly antero-posteriorly and the perineum beginning to bulge. Pains were strong and every two or three minutes. With more pains the perineum began to bulge markedly in its posterior part and suddenly tore at its center and with the following few pains the child was forced through this tear. The placenta was delivered through the same opening 20 minutes later.

The child was a male 50 cm. long and weighed $7\frac{1}{4}$ pounds.

Its head measurements were: occip-mental diameter, 13.5 cm.; occip-frontal, 11.5 cm.; sub-occip-bregmatic, 9.5 cm.; bi-parietal, 9 cm.; frontal-mental, 7 cm.; bi-zygomatic, 8.5 cm.; bis-acromial, 12.5 cm.; sub-occip-bregmatic circumference, 31 cm.; occip-frontal, 33 cm.; bis-acromial, 34 cm.; respectively.

The patient was menstrually at term and as you see the measurements were normal.

A local examination revealed the following condition: A normal appearing vulval orifice with intact posterior fourchette and no gaping as appears after normal labor. In the perineal body from a point $\frac{3}{4}$ -inch behind the posterior commissure and extending backward so as to expose the fibers of the external sphincter ani, and irregularly, laterally, there was a large gaping laceration, roughly resembling such a wound as one would create in doing a Tait flap-splitting operation for perineal repair. This wound communicated with the vagina underneath that part of the perineal skin and tissues which remained intact, creating a bridge $\frac{3}{4}$ -inch wide and quite firm and resistant. I split it in the median line to expose the wound deeply and found tears extending upward in both sulci and lacerations through mucosa in both labia. The external sphincter ani was intact.

I did an immediate repair of the laceration, using three No. 2 chromic sutures in the left sulcus and one in the right, and sutured the perineal skin wound with a few buried catgut sutures and two silkworm gut sutures to coapt the bridge to the apex of the vaginal tear. The irregular skin flaps were approximated over the muscles with catgut.

On September 6th, the patient had a temperature of 101.6 F. and I found the perineal wound infected and removed the skin sutures. The sulci tears healed primarily. Two weeks later when the perineal wound was granulating well, after explaining to the patient the possibility of failure and with her consent, I did a secondary suture of the wound but did not obtain union. The subsequent history of the case was uneventful.

This then was a typical case of central perforation of the perineum without rupture of the posterior fourchette or involvement of the sphincter ani or rectum which have been reported in some of the cases. That it is rare may be inferred from the fact that it is the only one which has occurred in over 80,000 deliveries at the Lying-In Hospital. Charpentier reported 56 from the literature before 1885; Delacroix added 18 up to 1891; Nicholson 15 until 1904, and I have records of 18 more up to date.

It is interesting to note the various conditions which have been found in these cases and mentioned as etiological factors; some authors maintaining that certain of them were absolutely essential before the tear could occur.

I have grouped them as (1) conditions of the soft parts, viz.:

Narrow vulva, repaired perineum, perineal rigidity, and the anatomical arrangement of the perineal structures themselves.

(2) Different presentations, viz.: Persistent occiput posterior; face, and vertex with extremity prolapsed alongside.

(3) Conditions at the bony outlet, including narrow arch; flat arch low os pubis and lessened curvature of the sacrum.

(4) Faulty mechanism, such as improper extension of the head on the perineum and marked flexion of the head.

Violent pains and a large outlet have also been mentioned.

Before discussing these different causes I wish to mention the measurements of the bony outlet of my patient which were made subsequent to delivery. The anteroposterior diameter from subpubic ligament to the tip of the sacrum measured 10.75 cm.; the transverse diameter between tubera ischii was 7.75 cm. and the posterior sagittal diameter, which was not measured with a special pelvimeter, was between 9.75 and 10 cm. These measurements are plainly those of a funnel pelvis with a distinctly narrow arch.

Among the first group of causes mentioned I would exclude narrow vulva as such, because I think the tear would occur before the vulva could influence the presenting part.

Vaginismus, if you assume it is caused by spasm of the levator ani, will have to be excluded, since the muscle must relax or rupture before the presenting part can advance to cause the tear.

Perineal rigidity, whether organic or spastic affecting the superficial perineal muscles could act to cause the tear by holding the presenting part longer on the already overtaxed posterior segment of the perineum.

The anatomical reason has been given by some writers, including Nicholson (who quotes Savage), Rongy and Doleris. The latter first called attention to an area in the vagina just behind the central tendon of the perineum and in front of the most anterior fibers of the levator ani where the vaginal and rectal septa are in apposition and

unprotected by muscle fibres. This he named the sinus retroperineal. A weakness of this area, either congenital or acquired, I consider to be the fundamental cause of central laceration and wish to call attention to the analogy between its occurrence at this point and the occurrence of abdominal herniæ at similar anatomically weak spots in the abdominal wall.

I am unwilling to consider any particular presentation as a contributing cause of central laceration, because it has been mentioned as occurring in all of them.

In the conditions mentioned as occurring at the bony outlet, more particularly a narrow transverse diameter, as noted in my case, I think we have the chief predisposing causes of central laceration, because they act to compel the presenting part to markedly distend the posterior segment of the perineum as it advances through the birth canal. During this period of greatest distension the perineum may give way at its weakest point and a central laceration results.

These two reasons: A weak sinus-retroperineal and a contraction of the bony outlet of the pelvis, particularly in its transverse diameter, I consider the causes of central laceration of the perineum.

Under the head of treatment I would advise that when a persistent occiput posterior position is found in a funnel pelvis, it be delivered in that position if a forceps operation must be done. Various clinic reports show that such positions occur more frequently in funnel pelvis than in normal ones and it would seem to be nature's way of making progress of the presenting pole, easiest by causing the narrowest part of the foetal ovoid to engage under the symphysis in the narrow arch. I think a median incision in the perineum will serve better than an episiotomy to minimize the size of the ultimate laceration in these cases.

The tear, like any other, should be repaired immediately after splitting the bridge if it still remains.

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THE IMPORTANCE OF OPHTHALMOLOGICAL EXAMINATIONS IN IMMIGRANTS.*

By MARTIN COHEN, M.D.,
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HAVING observed the presence of grave eye affections in immigrants attending the dispensaries, I considered it important to bring this subject to the notice of the Eye Section for general discussion. In some of the patients showing diseased conditions of the eye due to constitutional or local causes, there are indications that these manifestations have existed without the immigrants' knowledge previous to their arrival in the United States. Unfortunately, blindness sometimes results, necessitating future care by the community or state. Should this happen before the immigrants have been in this country for three years, they can be and are deported according to law, on the strength of a thorough examination by the proper medical board. If, as occasionally happens, the immigrants are aware of this fact as well as of the existence of their eye affection, they naturally try to avoid detection and deportation.

Since, as is well known, ophthalmoscopic examinations are of great diagnostic value in the wide field of medicine, and since among the many physical affections of immigrants which the United States Health Service must guard against, grave visual defects stand out prominently, the subject under consideration is of great importance from a sociological as well as an economic standpoint. If the experience of other observers coincides with mine, it might be well to present to Dr. Stoner, the chief medical officer of this port, a plan of having ophthalmoscopic examinations instituted and the visual acuity tested. Such a plan would have to be framed in recognition of the fact that vast multitudes of immigrants occasionally arrive at this port simultaneously, and this would greatly impede the proposed examinations. In order to form an idea of the feasibility of this project, it might be tentatively carried out on such days when the number of immigrants is not excessive.

Since the port of New York receives more immigrants than any other in this country, several thousands arriving on a rush day, the difficulties encountered in making thorough physical examinations are at once apparent, even without consideration of the eyes. But I believe that members of the service who have had previous training in ophthalmology might be of considerable assistance in cases of suspected eye affections.

I wish here to thank Dr. Stoner and his staff for the courtesies and opportunities extended to me to observe their methods of conducting the examinations. The greatest humanitarian

spirit prevails, strictly aiming at justice to all concerned, and I am sure that any suggestions bearing on the examinations will be welcomed.

The routine medical examinations are conducted in the following manner: After the steerage passengers have left the barge at Ellis Island, they are placed in a long line, to be inspected by two medical officers for any gross physical defects. Should any such be found, the apparel is chalk-marked. This class is retired and divided into three rows, to be examined by three inspectors. They evert the upper lids with the aid of a wire loop and place the upper tarsal fold on the stretch for the recognition of any pathological conditions. Should any be found, the apparel of these individuals is again marked by certain letters. All those that are marked are referred to appropriate rooms.

In regard to the eye, trachoma is the chief condition to which the inspectors direct their special attention. But the visual acuity is also tested in individuals in whom shortcomings in this direction are apparent. Those with trachoma, or suspected of having the disease, are deported or transferred to the Ellis Island Hospital for treatment. If they respond to treatment, they are permitted to proceed to their destinations, otherwise they are certified for deportation. Individuals showing other pathological conditions of the eye which, in the opinion of the medical examiners, may render them public charges, are likewise deported.

The detention of the suspicious trachoma cases involves an important economic and social problem, but in order to safeguard the public from dissemination of trachoma, the department considers some of these cases as trachomatous until treatment and time leave the conjunctiva in a normal condition. This method of differentiation might be considered unscientific, but it seems that in some stages of follicular catarrh, some authorities in the profession endorse this stand. This state of affairs, however, causes indecision at important health stations in making a differential diagnosis between trachoma on the one hand and follicular conjunctivitis and vernal catarrh on the other. A more universal and definite clinical classification of the course run by the various conjunctival affections should be established irrespective of the lack of laboratory facilities.

Trachoma with acute manifestations or with complications is generally recognized by the medical inspectors before passengers embark at a foreign port, or else by the ship's surgeons. These patients are not permitted to enter our port; but, as might be expected, a few will escape detection during the year. Thus it happens that immigrants with trachoma in the stage of partial cicatrization or in the stage of a possible acute exacerbation are now and then seen at our dispensaries. A clinical knowledge of the complete course of the various chronic con-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

junctival inflammations is essential in order to make a reliable differential diagnosis of the affections of the conjunctiva, when they present themselves.

As already mentioned, the differential diagnosis between trachoma and follicular conjunctivitis is of great importance in the legal exclusion of immigrants when they show any evidence of trachoma with certain inflammatory manifestations.

The health officials exercise their discretion in discerning which type of cases is free from communicability and relapses, and in the selection of those that have arrived at the stage which will not result in marked impairment of vision entailing a possible future burden on the individual himself or on the community. This differentiation is frequently postponed in certain cases to await future developments of the pathological process.

With our present knowledge of the clinical course of these two diseases a more definite and uniform description of the same could be formulated by this section whereby the profession and public health officials could be assisted in arriving at a conclusion, whenever patients of this class come up for examination. Although ophthalmologists and text-books on ophthalmology give descriptions of the course of these affections, we must admit that they are often conflicting in their statements as regards the appearance of the conjunctiva in these two distinct diseases. Since these two types of eye diseases have been under my observation for several years, a brief description of the same might aid in their clinical differentiation.

Trachoma is a chronic, communicable disease of the conjunctiva, characterized in its earliest stage by a diffuse hypertrophy and marked congestion of the tarsal conjunctiva and folds associated at times either with medium-sized papules on the tarsal conjunctiva, or medium-sized follicles on the folds, or both, and accompanied by mucoid secretion. These conditions are frequently complicated with slight edema of the lids, partial ptosis and pannus. This condition may continue for several months, when the papular and follicular contents become absorbed, leaving the conjunctiva and tarsus in a thickened and congested condition, which may persist for many years. In many cases it finally resolves with partial or total cicatrization of the conjunctiva and cornea, causing eventually in a number of them the sequelæ often seen in this affection after many years. When the entire hypertrophic areas have been resorbed and replaced by connective tissue, communicability ceases, but the resulting scar tissue by shrinking may cause irritative corneal and conjunctival symptoms. If trachoma can exist in such a mild form that its evolution to complete cure takes place without cicatrization, pannus or other sequelæ, then our description of trachoma, as considered by most ophthalmologists, must be

somewhat altered. Both of the affections under discussion are at first unilateral and become bilateral in most cases by contact with the infectious material from the other eye.

Follicular conjunctivitis is a chronic, communicable disease, the essential feature being the presence of raised follicles without any marked congestion of the conjunctiva. The follicles are usually situated on the lower conjunctiva, whence they gradually spread to the upper folds and lastly to the tarsal conjunctiva. After increasing in size and number, these follicles coalesce to form lymphoid masses in the folds, which ultimately become absorbed, leaving the conjunctiva comparatively normal. At a certain point of this cycle, the process becomes stationary in many of these cases, numerous follicles, for instance, remaining discrete and becoming absorbed, instead of coalescing. Unless properly treated, the process may extend over a period of years, and then relapses may occur even with proper treatment. This type of disease is very common and should not be considered trachomatous, notwithstanding the size, number or location of the follicles on the conjunctiva. This variability in course is, I believe, due to the diseased process occurring in conjunctivæ of varying degrees of resistance.

If an acute catarrhal inflammation is superadded to a follicular conjunctivitis, the clinical picture may be distorted at the onset; but with mild treatment the symptoms will ameliorate in a few days, the subsequent appearance of the conjunctiva enabling the condition to be properly diagnosed.

Chronic catarrhal inflammation of the conjunctiva must at times be differentiated from trachoma by observing the absence of hypertrophy of the conjunctiva, folds and tarsus, also the absence of cicatrization or any other sequelæ of trachoma.

Vernal catarrh is also at times mistaken for trachoma, and immigrants suffering therefrom are liable to be deported, if they are considered trachomatous and do not respond to treatment. The following considerations, however, will establish the differential diagnosis, excluding trachoma: Presence of violaceous color of the conjunctiva with milky secretion; pavement-like papules on the upper tarsal conjunctiva with no involvement of the transitional folds; marked eosinophilia and a history of intense itching of the eyes, and occurrence of the subjective symptoms in the spring and summer months.

The presence of the so-called trachoma bodies in conjunctival affections will not be discussed, as it has as yet no important bearing on the subject under consideration. The other conjunctival affections have also been omitted for the same reason.

Having briefly considered, then, the affections of the conjunctiva which have a bearing on the

subject, I have to enumerate some other ocular conditions in immigrants which I have observed during the past six months in my dispensary work. All of these patients had been in this country for less than a year, their symptoms and history indicating that the lesions had existed previous to their arrival here.

Such conditions are the following:

	No. of Cases.
(1) Old trachoma presenting an acute exacerbation	8
(2) Ophthalmoplegia interna	1
(3) Optic atrophy (primary), associated with Argyll-Robertson pupil and marked deterioration of vision in both eyes.....	2
(4) Myopia (malignant type).....	3
One of these cases was associated with a complicating cataract in one eye and a small peripheral retinal detachment in the other, causing vision to be <i>nil</i> in one eye and only to allow the counting of fingers at 10 feet in the other. The remaining two cases showed a macular choroiditis with marked deterioration of vision.	
(5) Glaucoma simplex	1
(6) Retinitis pigmentosa (in one family)	2
(7) Chorioretinitis (specifica)	2
(8) Neuroretinitis (renal)	1
(9) Detachment of retina with hole in macula and chronic choroiditis (tubercular)	1
	—
	21

Aside from one case which had come under the observation of the Batavia Institution for the Blind, the above tabulated 21 cases comprise only my own experience, gathered during the short period of six months' dispensary practice and at a time when immigration was low. It will be useful, therefore, if others would likewise collect and present their experience, so that general conclusions may be drawn in regard to the existence of the conditions mentioned in this paper.

Conclusions.

- (1) It is necessary that at least one member of the public health service in each of the principal ports of entry be experienced in ophthalmological examinations.
- (2) It would be advisable to determine by indiscriminate examinations at such times when immigration is low just what percentage exists of fundus lesions which are likely in after years to result in marked deterioration of vision, blindness or organic diseases causing incapacitation.
- (3) It might be well for this section to formulate some plan for recognition and adoption by the medical profession and the public health officials whereby definite clinical differentiation between trachoma and the other conjunctival

diseases referred to in this paper could be facilitated.

(4th and Last) The prompt recognition of certain conditions which sometimes simulate trachoma and which can be identified clinically would obviate futile treatment, needless detention, unwarranted expense and unnecessary deportation.

CERTAIN NEGLECTED ASPECTS OF THE PROBLEM OF INFANT MORTALITY.*

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IT is not my intention to lay before you the well-known, general facts of Infant Mortality, however much these facts seem to need constant reiteration. It is to a certain portion of that mortality and to its prevention that I wish to refer briefly.

In the efforts that have been made, the deaths from diarrhoeal disease, representing from 20 to 30 per cent. of the total, being most obvious as to causation, were naturally the ones first attacked. The establishment of infant welfare stations, babies' prophylactic dispensaries and milk stations have accomplished a very great deal in reducing the mortality from this class of cases. Especially is this so since the preventive end of the work has been emphasized through education of the mother. It is a hopeful sign that the dispensing of already modified milk, during a few months of the year only, has largely given way to the instruction of mothers all the year round in the care of their babies, which includes teaching them how to modify milk, and how to keep milk clean.

There is, however, a very large portion of the total mortality among infants, varying from 25 to 35, or even 40 per cent., which occurs during the first month of life and which is credited to those causes vaguely classified as "congenital debility," "prematurity," and so forth. It seems to be becoming popular to speak of "preventable" and "unpreventable" infant mortality, and these last groups of causes are mentioned as unpreventable. It is perfectly true that the efforts which have been made, and which have resulted in such marked reductions in Infant Mortality in many places, have not, so far as my statistics go, shown any very marked decrease in the deaths under one week, or under one month of age.

I have collected and analyzed the figures in New York City for the Borough of Manhattan for the last seven years. There has been a very small diminution in the deaths under one month of age, and none in the deaths under one week;

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, N. Y., April 30, 1913.

while the deaths from one month to one year have fallen very remarkably, especially during the last two years. This is true from whatever point of view we regard these figures.

The following tables show the figures in detail:

BOROUGH OF MANHATTAN, N. Y.

Year	Deaths		
	Under 1 Week	Under 1 Month*	1 Month to 1 Year
1906	1495	2853	6622
1907	1674	3025	6508
1908	1541	2811	6217
1909	1517	2820	6101
1910	1591	2884	6017
Average 1906-10	1563	2878	6293
1911	1601	2687	5455
1912	1569	2712	4961

BOROUGH OF MANHATTAN, N. Y.

Year	Mortality Rate Per 1000 Births		
	Under 1 Week	Under 1 Month*	1 Month to 1 Year
1906	23.7	21.5	105.1
1907	25.4	20.5	98.9
1908	23.0	19.0	93.0
1909	23.8	20.5	95.9
1910	23.9	19.5	90.7
Average 1906-10	24.0	20.2	96.6
1911	24.1	16.3	82.0
1912	23.8	17.3	75.3

BOROUGH OF MANHATTAN, N. Y.

Year	Percentage of Total Mortality Under 1 Year		
	Under 1 Week	Under 1 Month*	1 Month to 1 Year
1906	15.8	30.1	69.9
1907	17.6	31.7	68.3
1908	17.1	31.1	68.9
1909	17.0	31.6	68.4
1910	17.9	32.4	67.6
Average 1906-10	17.0	31.4	68.6
1911	19.7	33.0	67.0
1912	20.4	35.4	64.6

* Includes deaths under 1 week.

In 1911, when the infant death rate in Manhattan fell to 123 per thousand, the death rate under one week of age was practically the same as the average of the preceding five years, being higher than each one of these years, with the exception of 1907; the deaths under one month showed a reduction in the rate of a little less

than 4 per thousand, from the average; while the deaths from one month to one year showed a fall of almost 15 per thousand.

In 1912, the same thing is seen again;—there is a general Infant Mortality rate of 116; the deaths under one week show a rate of 2 per thousand below the average; those under one month only 3 per thousand; while those from one month to one year are over 21 per thousand below the five-year average.

Similarly, when we look at the proportion of the mortality under one year which occurs at the various ages, we find that the proportion under one week has steadily, though slowly, gone up, as also has that under one month; while the proportion from one month to one year has as steadily fallen. This is only to be expected from the nature of things. It must be pretty generally admitted that the mortality occurring during the first week, or the first month, of life is largely due to conditions acting upon the child through the mother, before its birth.

There is another striking fact brought out by a study of this portion of the Infant Mortality, which should be borne in mind by those planning to better things by a campaign lasting during the hot months. The distribution throughout the year of deaths under one week is almost uniform. The average for 1906-10 shows the percentage for single months to vary from 7.44 to 9.63, with July and August showing 8.56, and 8.09 per cent. of the year's mortality, respectively. A greater proportion occurs during December, January, February and March.

The same is true for deaths under one month, where again a greater proportion occurs in December, January, February, March and April also, than in the summer months. The mortality among babies under one month is the highest during the winter months. The figures are shown in the following table:

BOROUGH OF MANHATTAN, N. Y.

Percentage Distribution Throughout the Year
of Infant Deaths at Certain Ages.
Averages for 1906-10

Month	Under 1 Week	Under 1 Month*	1 Month to 1 Year
Jan.	8.80	9.41	6.69
Feb.	8.58	8.61	6.77
March	9.63	9.36	8.01
April	8.17	8.52	8.20
May	8.16	8.04	7.45
June	7.99	7.66	7.12
July	8.56	8.40	13.18
August	8.09	8.50	13.75
Sept.	7.44	7.37	10.12
Oct.	7.95	7.94	7.74
Nov.	7.47	7.12	5.16
Dec.	9.13	9.05	5.77

* Includes deaths under 1 week.

While, as has been stated, a great deal has

been done for babies who are old enough to be watched from prophylactic dispensaries and from milk stations, very little organized effort has been made until recently to prevent those deaths due to antenatal influences. In 1908 the Pediatric Department of the New York Outdoor Medical Clinic undertook the systematic care of expectant mothers registered at this clinic. This work has been under the care of Dr. Herman Schwarz, and has been carried on in a most efficient way. Since 1909 the Committee on Infant Social Service of the Women's Municipal League in Boston have carried on a campaign of prenatal instruction. Their patients have all been women who were to be confined by a physician or in hospitals. No cases who were to be attended by midwives were accepted. In most cases a small fee was paid by these women. A certain amount of care of expectant mothers has also been carried on since 1908 by the New York Association for Improving the Condition of the Poor, through their Caroline Rest nurses.

During the last two or three years this work has been extended, a number of cities having started it in a small way and with a variable amount of efficiency. Since the summer of 1911 the New York Milk Committee has been carrying on an experiment along slightly different lines. An intensive campaign was organized in definite districts in the Borough of Manhattan. Its object is to see what can be accomplished under existing conditions. A corps of nurses was selected, and they were given a careful preliminary course of instruction in the hygiene of pregnancy. The nurses are then sent around to the homes of all expectant mothers with whom they can get in touch. In almost every case their visits are welcome. These visits are repeated every ten or twelve days, and in certain cases oftener.

The instruction given is practical and applied to each individual case. It is directed toward insuring as little hard work as possible during the latter months of pregnancy; toward improving the general nutrition of the mother; toward improving home conditions; and toward securing the best possible care at the time of confinement. I say the best possible care, for in a great many cases it is impossible to persuade the Italian and Hebrew mothers to have any care, other than that given by midwives. When this is found to be so the nurse suggests the best midwife in the district, or the Bellevue School of Midwives. When it is necessary to secure relief for these families it is done through co-operation with the various relief agencies in the city. No treatment of any kind is given, except in extreme emergency, when the physician connected with the Committee is called upon. Almost always treatment is given by existing dispensaries and hospitals, the purpose of this campaign being purely prevention through instruction.

When confinement has occurred the nurse is immediately notified by an addressed postcard

which she leaves with the mother. Visits are then made at more frequent intervals, until the baby is one month old. The nurse calls only as a friend, while the woman is under the care of the physician or midwife, and after the physician or midwife has left the case, she resumes her active instruction and supervision.

Accurate detailed records are kept of the cases from start to finish, which is when the baby is one month old. The success of the work is judged by the still-birth rate, the premature birth rate, deaths under one month, and the proportion of maternal nursing.

Up to December 31, 1912, 1,375 women have been thus supervised and instructed until their babies were one month old. Among these women there have been two deaths; one from toxæmia of pregnancy, one from acute hæmorrhage due to placenta prævia. 1310, or 95.3 per cent., gave birth to a living baby at term; 16, or 1.2 per cent. to a premature living baby; 48, or 3.5 per cent. to a still-born baby. Among the 48 still-births are included 10 occurring before the sixth month of pregnancy.

At the end of one month 97.3 per cent. of the babies born alive were living; 2.7 per cent. had died. The death rate under one month of age among these supervised cases was therefore 27.5 per thousand living births, as against 40.2 per thousand for the Borough of Manhattan for the same period. The still-birth rate per thousand total births (living and still-born), was 34.3 for the supervised cases, as against 47.9 for the Borough. In comparing these figures it should be borne in mind that the supervised cases were among the poorest classes, living under the worst conditions, and that every still-birth was included, no matter at what period it occurred; while the figures for the Borough of Manhattan included the rich and poor alike, and the number of still-births reported is probably very far short of the total number actually occurring.

Of the living babies 92.2 per cent. were being nursed entirely; 4.1 per cent. were being partially nursed; only 3.7 per cent. were artificially fed entirely at the end of one month. It should be noted that there were 44 twins, so that only 2.7 per cent. of the mothers whose babies were living at the end of the month failed to nurse them either entirely or in part.

I believe that future efforts for the further reduction of Infant Mortality must include work along the lines outlined above; namely, prenatal prevention. A considerable portion of the so-called "unpreventable" infant mortality can be prevented.

Sir George Newman said in his book on Infant Mortality: "The problem of infant mortality is not one of sanitation alone, or of housing, or indeed of poverty as such; but is mainly a question of motherhood * * *. In the consideration of any measure for reducing infant mortality, we must first attempt to solve the problem through the mother."

CARDIAC AND ARTERIAL DECOMPENSATION—PREVENTION AND TREATMENT.*

By LOUIS FAUGÈRES BISHOP, A.M., M.D.,
NEW YORK.

COMPENSATION is defined by Stedman's Medical Dictionary as: "The supplying of a deficiency; the making up in one part for the loss in another. Specifically, the maintenance of the circulation, in cases of cardiac valvular defect, by hypertrophy with resulting increased force of the contractions of the heart muscle."

It has latterly been suggested, but not generally considered, that arterial compensation consists in an increase in the structures composing the arteries to accommodate a more active function demanded by high blood pressure, which, in turn, may be occasioned by functional difficulties, more especially of the kidneys.

The causes of broken compensation in the heart may be extra strain of physical exertion, but much more often it is a deterioration of the healthfulness of the heart muscle because it is made sick by poisons that reach it through the circulation, or loses its reserve through exhaustion or neglect of exercise.

There are three topics: (1) Pure cardiac compensation in non-progressive valvular disease. (2) Arterial compensation maintaining a necessary increase in blood pressure. (3) Combined cardiac and arterial compensation where valvular defects exist with kidney or other demands for pressure.

Instances of the first form of compensation have been quite frequent in my experience with young persons. They give the history of some damaging disease and present themselves with murmurs and a compensating hypertrophy of the heart. They should be wisely advised, for they are plastic material for the easy creation of chronic invalids on the one hand, or the development of useful lives on the other.

They should be told that their problem is the same as the problem of any of their healthy contemporaries who are preparing for an athletic contest, namely, the maintenance of the heart in the best possible condition of health and efficiency.

After being warned against things demanding strain, they should be urged that they cannot afford to neglect other forms of exercise. Tennis, horseback-riding, swimming and walking are all appropriate. They must be taught to respect their wind and let it be the indication for the moderation of cessation of exercise.

Many will show a tendency to defect of circulation in the liver and do better on a few-protein diet. The blood will often be found too abundantly supplied with red cells, so that tonics and forced feeding lead to a condition of con-

gestive plethora that is not desirable, and tends toward auto-intoxication.

Those who are compelled to work sometimes do better than those who are unwisely guarded. Plain living, with abundant exercise, devoid of strain, is the ideal state of the young person with pure cardiac compensation.

It is one of the pleasures of the heart specialist to be able to reassure the parents and the young people themselves, and put them on the plane of average individuals.

The treatment of broken compensation with uncomplicated valvular disease in young persons requires a study of its cause, which is often enough found to be muscular strain that has been out of proportion to the power of the crippled heart, particularly when there has been dis-sipation. Prolonged rest may be necessary, and sometimes the occasional use of digitalis is required. The diet should be liberal, and the auxiliary use of iron, arsenic and strychnine as a tonic is allowable if these is true anæmia or nervous depression. In these young people we do not have to contend with many contraindications to such measures as are found in older people. When compensation is restored, out-of-door exercise, as noted above, is necessary for its maintenance.

Simple arterial compensation is found in persons who have undergone some damage to the kidneys and blood vessels, most often through some infection, but occasionally through metallic or food poisoning. These are ordinarily first seen when a little older than those with pure cardiac compensation, and in their care present a somewhat different problem, though hygienically they work out much the same. A careful study will usually show that they are unable to deal successfully with some of the ordinary protein foods. This amounts to a sub-symptomatic sensitiveness. It may be meat; it may be eggs; it may be fish; or two of these classes of protein. Hence the selection of proteins suitable to the individual is of extreme importance and can only be accomplished by the study of the individual himself.

There is no chemical test that has been worked out up to the present time, so we are driven to indirect means for the determination. Tradition and popular prejudice make meat, particularly red meat, least desirable; but some tolerate meat and cannot tolerate eggs, and others show, under investigation, that fish is their insidious enemy.

The study of the effect of special foods on blood pressure helps, but if the sensitiveness is very great, on the withdrawal of all classes of proteins, that which is craved most will often be found to be the one at fault, on the same principle as alcohol is craved by the alcoholic. Protein food, to which a person is sensitive and which has become a habitual poison, acts as a stimulant and is missed. When withdrawn, it leads to a false sense of weakness that really does not represent a lack of physical strength.

In the care of arterial compensation, the few-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

protein diet will be found most desirable and much more easy to obtain than the low-protein diet. It consists of allowing as much as is desired of a few selected proteins and absolutely avoiding the others. Arterial compensation can thus be satisfactorily maintained over long periods of time.

Broken arterial compensation in its simplest form is found in the subjects of high blood pressure, who, through injudicious treatment, the action of depressor poisons or severe nervous shock, undergo a loss of vascular tone leading to interference with circulation in the kidneys and other organs. There is an accumulation of blood in the splanchnic area and a general condition which is often described as "auto-intoxication." These respond to out-door exercise, simplification of diet, intestinal hygiene and the use of vascular tonics, theobromine being one of the most valuable.

Cardiovascular disease, according to the statistics of life insurance companies, is responsible for 104 percent. more deaths than in 1880. Hence the ever growing importance of a restudy of the condition along broad lines. Fifty years ago unwise treatment of cardiac hypertrophy as a primary disease lead to failures that are now more than being duplicated by single symptom treatment of the general disease that is so inadequately named "arteriosclerosis" or "high blood pressure."

While in the second class, the heart is always slightly involved, in the third class it is sometimes difficult to say which is primary—the arterial or the cardiac condition. We find decided valvular defects with a considerably elevated standard of blood pressure. The care of these persons involves the principles of the other two classes of compensation.

The treatment of broken compensation in combined cardiac and arterial disease, which corresponds closely to secondary low blood pressure, which the author has so often described in previous communications, is the most serious problem in cardiovascular disease. The condition develops after years of compensatory life, and the sufferer presents dilatation of the heart with feeble valvular orifices and pathologic relaxation of the blood vessels, causing dropsy, oedema of the lungs, congestion of the liver, impaired cerebral circulation and partial paralysis of the kidneys. In this condition, persons are always highly sensitive to many proteins, even often to the proteins of milk. Secondary low blood pressure is always present, though at times the blood pressure measurement is misleadingly high on account of local vascular spasm. Unfortunately, they often come to the specialist's notice when the situation has been complicated by the liberal, but not always wise, administration of inappropriate drugs. The limits of this paper do not allow the full discussion of so serious a condition. The principles of treatment in my own hands involve the thorough clearing up of the intestinal condition by the administration of an

ounce of castor oil on three successive occasions at intervals of 48 hours; by the thorough digitalization of the heart; by the withdrawal from the diet of offending proteins, and, in a large measure, of milk; allowing bread and butter, vegetables, cereals and milk proteins; and as soon as possible, the commencement of graduated exercise, leading up to as much of an out-door life as possible, and gradually to a more liberal diet.

CENTRAL SCOTOMA AND BLIND SPOT ANOMALIES; THEIR CLINICAL SIGNIFICANCE.*

By PERCY FRIDENBERG, M.D.,
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THE posterior pole of the eye is the seat of two areas, both of which are of clinical importance, although they differ widely in the degree of their functional activity; the macula, with its fixation point of acutest vision for white and colors, and the optic nerve-head corresponding to the silent area known as Mariotte's blind spot.

A central scotoma implies a macular lesion, and excluding, of course, such obvious intraocular conditions of opacity of the cornea or other media and visible changes such as hemorrhage or atrophy at the macula, may be considered as pathognomonic of an axial neuritis, often retrobulbar in origin and having as its histological basis an inflammation or degeneration of the maculopapillary fibers. The course of this wedge-shaped system from the temporal side of the disc backward and then more below and toward the axis of the nerve, is familiar to all. I would merely remind you that the macula receives crossed as well as uncrossed fibers, the former supplying the nasal, the latter the temporal half of the fovea, so that the fixation point is in communication with the visual centers of both hemispheres, i. e., the macula has a double representation in the brain. The well-known clinical observation of a reservation or sparing ("Ausparung" of the Germans), of the macula in hemianopsia corroborates this view. A predominant or exclusive involvement of these fibers, giving rise to central scotoma, at first for colors and later for white as well, with the ophthalmoscopic picture of pallor of the temporal half of the disc, is found in a variety of affections. One large group may be referred to as the toxic amblyopias due most commonly to alcohol and tobacco, but also, it is claimed, to anilin, arsenic, stramonium, lead, carbon oxide, iodoform, opium, mercury, tea, and other drugs.** Intestinal auto-intoxication and the specific poisons of systemic syphilis, rheumatism, gonorrhoea, malaria, influenza and erysipelas have also

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

** Central scotoma has been noted, as an exceptional condition in quinine amaurosis, but as Lewin and Guillery point out, the factor of malaria was probably present, and this itself may cause central scotoma.

been accused. In another group we have to deal with the pathological factor of accessory sinus disease, especially of the posterior ethmoid and sphenoid sinuses, and while the clinical observations and operative findings as well as the results of appropriate therapy have been corroborative in cases reported by many observers abroad and at home, the actual modus of the nerve changes has not been determined beyond cavil. Is this early involvement of the maculopapillary bundle in sinus disease explicable on the basis of a uniform centripetal compression of the optic nerve in its bony canal; in other words, is there a special vulnerability of this group of fibers, or is the condition due to circulatory changes or toxic degeneration?*** A direct extension of the inflammation to the substance of the nerve is, of course, possible by way of a perineuritis producing an interstitial optic neuritis with loss of sight, but this would be more apt to cause peripheral contraction of the field, as has actually been observed. Compression of the central retinal vein where it emerges from the trunk of the nerve, a point which seems to be particularly susceptible to congestion, has been noted in tumor of the sphenoid sinus, and the consequent changes in the nerve were toxic in character as shown by their correspondence, on microscopic examination, to the experimental lesions produced by acute intoxication with methyl alcohol and filix mas. Central scotoma in intoxication amblyopia is almost invariably bilateral, and while this is the exception in sinus disease, it is by no means unknown, even where the affection of the accessory cavity is unilateral.

The possibility of a central scotoma being present in many cases of sphenoid or posterior ethmoid involvement is first mentioned by Fuchs and Birch-Hirschfeld, the latter believing that the damage first takes place in the papillomacular bundle, on account of its vulnerability, and that it constitutes one of the early symptoms of infected accessory sinus or of retention. This is corroborated by Gruenwald, Ziem, Berger, Kuhnt, Bryan, and MacWhinnie (N. Y. M. J. August 13, 1910), who reports fifteen cases and refers to seven others, seen subsequently. In all of these he failed to find a normal field; enlargement of the blind spot being the rule, with isolated scotomata in the intermediate zone in the cases in which pus was present in the middle turbinate region. In none was a central scotoma demonstrated whether pus was present or not, either before or after operation. In all the cases in which pus, granulation or mucocele was made evident after operation, there was a characteristic scotoma of the ring or annular type described by DeSchweinitz, occurring in the intermediate zone, as well as an enlarged blind spot. According to MacWhinnie, the presence

of a ring scotoma would warrant the hypothesis of accessory sinus involvement, even "when the retained infection is not evident to the probe," and where there is evidence of accessory sinus involvement present by inspection of the nares, enlargement of the blind spot with a relative para-central scotoma for white is the typical visual field.

It seems to me that this differentiation can hardly be maintained in practice, for the determination of the presence of pus in the sinuses before operation may depend on conditions which have nothing to do with the pathology of the case, thus, to cite merely one, the diagnostic ability of the surgeon. In other words, a negative pre-operative finding may mean either absence of pus or a failure to detect it. The visual disturbances must, in the last instance, depend on the character and extent of the pathological changes in the sinuses, and cannot logically be expected to correspond with the clinical findings inasmuch as we know that in accessory sinus disease the rhinoscopic examination may not reveal conditions at all proportionate to the accessory sinus involvement as demonstrated, later on, by operation. I am inclined to agree with MacWhinnie in his belief that it is good practice to open the sphenoid in cases of an optic neuritis or choked disc, showing para-central scotoma in the visual fields. In fact, I would go a step further and advise the same surgical procedure, at least to the extent of opening the ostium of this cavity sufficiently to allow free drainage and permit of lavage in all cases of enlargement of the blind spot, central scotoma, or other visual field anomaly of indeterminate origin, even in the absence of choked disc or neuritis. Of course, this presupposes the exclusion of all other etiological factors in the causation of similar central field disturbances, whether hysteria, tobacco-alcohol intoxication, intestinal decomposition or brain abscess and tumor.

Foster Kennedy, (Am. Jour. Med. Sci., September, 1911), calls attention to the occurrence of true retrobulbar neuritis with the formation of a central scotoma and primary optic atrophy on the side of the lesion, together with concomitant papilledema in the opposite eye, as an exact diagnostic sign of certain tumors and abscesses in the frontal lobe, namely, those in which actual pressure is exerted on the optic nerve. In such cases the initial papilledema gives way, on the affected side, to retrobulbar neuritis with progressive atrophy: Edema quickly subsides and visual acuity diminishes rapidly, a central or pracentral scotoma develops, and in a few days' time, well-marked temporal pallor will be seen ophthalmoscopically, an expression of atrophy which, at a later period, will be observed in all four quadrants of the disc. Kennedy's conclusions are based on the observation of six cases. In three a direct pressure was exerted on the nerve trunk from the very

*** Wilbrandt claims that these fibers are more vulnerable by toxins (tobacco, alcohol, etc.), have a finer and thinner medullary sheath than other nerve fibers and, owing to their axial position, have more difficulty in eliminating waste substances such as products of functional metabolism or of toxic absorption.

beginning of the disease, so that retrobulbar neuritis was noted before papilledema had had time to develop.

The ophthalmoscopic and visual findings in these three cases make me somewhat sceptical of the exclusive significance of Kennedy's sign, while I do not for a moment doubt its conclusive diagnostic import as an indication of pressure on the optic nerve. Such pressure might well be caused by a distended sphenoid sinus or posterior ethmoid cell, and even without direct pressure, marked congestion, especially if long continued and perhaps accompanied by absorption of septic matter might produce a retrobulbar neuritis which would in no way be differentiated from that due to frontal lobe neoplasm or abscess. The presence of papilledema precedent to the partial optic atrophy, on the other hand, would speak against accessory sinus origin, as bilateral choked disc and the intracranial tension which it indicates are rare in this class of cases. The association of this feature with papilledema is interesting and of decided clinical importance. It is quite possible that it is not at all infrequent and has been overlooked, the more so as careful tests of central vision are rarely carried out where there is such evident ophthalmoscopic change as choked disc, which, too, was often presupposed to affect central vision to such a degree as to vitiate finer tests. It is now well known that this is by no means the invariable or even the general rule.

The appearance of a well-defined central scotoma in the course of tabes is an indication of florid syphilis and the expression, not of an incipient primary (tabetic) optic nerve atrophy, but of a partial retrobulbar neuritis of leucic origin involving the maculopapillary bundle.

A central scotoma is frequently found in alcoholic neuritis and in pseudotabes of similar etiology, and aids to differentiate this affection from true tabes in which a macular visual defect is an extreme rarity. Among other morbid conditions causing central scotoma we may mention multiple sclerosis, acute myelitis, acute anemia from copious hemorrhages, cranial trauma and fracture of the skull. The intraocular lesion is manifest in macular hemorrhage. Berlin's opacity accompanying contusion of the globe, hole at the macula, central retinal embolism and similar conditions.

Ring Scotoma.—Retrobulbar neuritis with ring scotoma is often due to multiple sclerosis. It is often found, too, in hysteria and in neurasthenics who are markedly photopic and have dazzling subjective light sensations. A marked irregularity, variation, and tendency to spontaneous disappearance and relapse is characteristic of this class of cases. It is a question, too, whether some of the hysterical or neurasthenic cases in which this symptom was noted were not primarily nasal or accessory sinus cases. There is no doubt whatever that sinus disease, especially low grade chronic forms with retention and

mild toxic disturbances will produce a marked and grave neurasthenia or even a psychasthenia. Whether the latter is due mainly to the frequent and prolonged headaches or to the effects of poisoning from absorption of decomposition products from the sinuses or nose, is not clear.

Gjessing, DeSchweinitz, and others note concentric ring scotoma in posterior ethmoiditis. Central color scotoma is often the first symptom of an axial neuritis (Birch-Hirschfeld), but according to Van der Hoeve, enlargement of the blind spot, at first for color, and later for white, precedes it.

Anomalies of the Blind Spot.—Mariotte's spot is located about 15° to the temporal side of the fixation point corresponding to the actual location of the disc at this angle from the macula. In eyes hyperopic three dipotries or more the blind spot is further away, up to 19° , while in myopia it is nearer, down to 11° , to the center of the field. The blind spot is usually about $\frac{1}{2}^\circ$ below the horizontal meridian, owing to the fovea being somewhat above the level of the disc. Van der Hoeve's examination of 100 eyes of subjects between 18 and 22 years of age showed that the blind spot formed a fairly uniform oval with its greater axis vertical, of about $5^\circ 43'$ horizontal, and $7^\circ 26'$ vertical diameter, surrounded by a zone relatively blind for white of $\frac{1}{8}^\circ$ to $\frac{1}{4}^\circ$ and this by a zone of relative color blindness averaging $\frac{1}{2}^\circ$. These campimetric findings at two meters correspond closely with the figures given by Landolt.

Enlargement of the blind spot may be due to any intraocular changes which destroy the function of the retina immediately about the nerve-head, as for example the mechanical pressure in choked disc. Opaque nerve fibres, coloboma of the nerve sheath, myopic conus, or choroidal atrophy are obviously to be considered. Aside from these ophthalmoscopically evident causes, enlargement of the blind spot implies loss of function in the peripapillary bundle of optic nerve fibres which are situated immediately below the sheath of the nerve, i. e., most peripherally, and supply the retina at the margin of the disc. It is probable that these fibers are covered by others at the level of the papilla, namely those running to the periphery of the retina, so that their degeneration is not immediately signaled by pallor, as is the case where the peripheral fibers are affected, as in quinine amaurosis and other atrophies with predominant involvement of the outer limits and concentric contraction of the visual field. Enlargement of the blind spot has been observed as an almost invariable accompaniment of disease of the posterior accessory cavities, ethmoid and sphenoid, and may be considered little short of pathognomonic. Van der Hoeve, de Kleijn, Gjessing, MacWhinnie, Bryan and many others have reported experiences bearing this out. Van der Hoeve considers a horizontal diameter for motion of 7° as too large, and one over 6° as sus-

picious. This or a relative color scotoma of more than one degree should lead to further investigation.

Enlargement of Blind Spot.—Rapid tiring during tests for determining limits of blind spot is itself an important symptom, according to de Kleijn, of partial loss or deterioration of function in the retina immediately about the nerve head. The normal eye shows a blind spot of the same size for white, blue and red. De Kleijn cites two positive cases in which operation was insisted on, in spite of negative rhinoscopic findings, on account of the presence of an enlarged blind spot, and two negative cases, shown so by operation revealing free posterior cells.* Cf. Beer, 1817, remarked improvement in eye diseases due to nasal troubles, when free discharge was prompted by sneezing or taking snuff. Kuhnt, Onodi, Oertel and others have noted asthenopic symptoms and scintillating scotoma in sinus disease and the writer can bear this out from experience in his own case.

The usual methods of testing for central scotoma or blind spot anomalies are inaccurate and require much time and patience. The use of campimeters or large black screens at a distance of about six meters is open to the objection that accurate fixation is difficult and cannot be controlled.

The usual perimetric tests are carried out with too large test objects. Haitz has devised a method of examination with stereoscopic fixation, allowing both eyes to be kept open and examined independently with very small test objects, measuring one and two mm. in diameter. I have modified this test by constructing a graduated scale for the perimeter with squares 1° on a side. These test objects may be exposed and covered instantaneously while the eye of the patient is kept under observation and accurate fixation assured, or a stereoscopic fixation may be used by means of a pair of spherio-prisms with a focal point corresponding to the center of the perimeter arc. I have had these tests arranged for daylight and for dark room testing with artificial illumination. The defects may be plotted on Haitz's charts for the center of the visual field or on the ordinary perimeter blanks.

Even if colored objects, on account of their feebler luminosity form a much more sensitive test than white ones, they do not suffice to determine the actual extent of a central scotoma, as the absolute types are generally surrounded by a zone of diminished sensibility in which red, for instance, appears as red gray or red brown to black, or with higher illumination grey red, pink red or gray. It is to a certain extent at the option of examiner, and patient as well, to de-

termine which tint is to be considered as a recognition of red. To obviate this, Groenouw has suggested the use of minute black points, especially for those cases in which even small colored objects fail to reveal a central scotoma, claiming, too, that it is easier to state when a black point is seen than to determine exactly the tint to which a color has turned. The existence of a zone of diminished sensibility can be demonstrated by using points of different sizes, which will show a central defect which is smaller for a large test object than for a small one.

According to Wilbrand a progressive course of axial neuritis may be inferred from the following scotometric findings:

1. Extent of relative and absolute scotoma identical, when tested with large objects.
2. Extent of scotoma remaining fixed for blue and white, but increased for red.
3. Fixed extent of red field with the new development, inside the scotoma, of a defect for white object (of any size).
4. Successive disappearance of colors from the visual field or from the region of a scotoma for white in which, previously, color was perceived.

DYSMENORRHEA.*

By J. H. CARSTENS, M.D.,
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DYSMENORRHEA seems to be on the increase, and probably is on account of our mode of living. Women of the primitive races did not seem to suffer very much from this condition as far as we can find out, hence we can assume that advancing civilization will continue to bring forth cases of painful menstruations. It is up to us to study its etiology and pathology and show how it can be prevented, and if present relieve the patient.

Dysmenorrhea is one of the most troublesome things for a general practitioner to treat. And it is so complicated and difficult to find the cause, and what is worse in some cases there apparently seems no reason for its existence.

The usual classifications of varieties by different authors is still of advantage in making the diagnosis.

The membranous dysmenorrhea is still obscure from an etiologic standpoint, but fortunately rare. I relieve some cases with a thorough curettage, and then swabbing out the uterus with pure carbolic acid. In a few cases I found a diseased ovary and tube in connection with it, and removed these at the same time.

The so-called "Ovarian Dysmenorrhea" is as a rule caused by an inflammatory condition of the tubes, ovaries and adhesions, in cases that

* de Kleijn (Graefe, 1912, No. 82) claims that tumors or fracture about the optic foramen without sinus disease may cause central scotoma and enlargement of blind spot. Pigment changes about the disc are common in hemorrhage and axial neuritis connected with accessory sinus disease (Snellen). The same condition may be found in traumatic hemorrhage into the nerve sheath.

* Read before the Medical Society of the State of New York, May 1, 1913.

follow different infections. These of course require an operation. There are some cases without any history where there is severe pain in one or the other ovary, and when they can be palpated are found to be very small and very sensitive. On operation, (which is the only thing that can be done,) we find simply a small, hard cirrhotic ovary, the removal of which cures the patient. All the other pelvic organs are normal, no adhesions, simply this small and hard unfunctionating ovary causes the whole trouble.

Then we have tumors, such as fibroids and polyps, which require surgical treatment.

Displacement of the uterus, especially flexions, are by many authors considered the principle cause. Pessaries have been used, and many diverse operations suggested to relieve this condition, as a rule with little benefit. Many cases of displacements exist without producing painful menstruations.

Neuralgia has been made use of to explain painful menstruation, when we could find no other cause. Well, I suppose that is as good to tell the patient as anything else, but it neither explains to the scientific inquiring mind the etiology, pathology, mode of treatment, nor cures the suffering patient.

We finally come to the obstructive dysmenorrhea, which is placed at the head of the list by most authors. I take it last, because that is the kind I want to say a few words about.

Mechanical therapy has been for ages the prime view of the profession, resulting in the invention of innumerable dilating instruments, or in the cutting the cervix, the removal of part of the latter, or the whole, to remedy the trouble. There are rare cases, the so-called "Pin Hole Os," which are cured by dilatation. In most of these cases where all other causes have been excluded, and the whole trouble seems to be in the uterus only, dilatation will relieve only a certain number. Investigations have shown that the uterus is generally patulous, a sound passes readily and the blood never coagulates in the uterus, but remains liquid on account of the alkaline secretion of the womb, which is increased during menstruation. There is no clotting of blood, and no large solid body to be expelled from the uterus, as the patient generally thinks. The coagulation takes place in the vagina. The blood can flow out of the uterus without any trouble. That is not what causes the painful menstruations. In fact, exhaustive experiments made in large series of cases have shown that by thorough dilatation under an anesthetic, less than one-half of the patients are relieved, and the others find that in two or three months the trouble recurs. I have therefore always held that stenosis is only the cause in some cases, and that flexions produce none or little obstruction, and cause no pain, or rarely so.

Now, what is the trouble? As a rule in nearly all the cases where there is pain from the very beginning, we find a so-called small or infantile uterus. The so-called infantile uterus varies; sometimes it is only two inches in length and thin in proportion. In the majority of cases I find it of full length, two and one-half to three inches, but very thin like a finger, half to three-quarters of an inch in diameter. The mucous membrane is also poorly developed, just like the thin muscles.

Seeing a case like this, I would ask any man of common sense, what is the use of giving any medicine to such cases? What remedy is there that will make the womb grow? If anyone knows of such a remedy, I should be glad to know it, but on the very face of it no man with common sense will for a minute believe that any of the remedies ever recommended will make such an uterus grow to normal size.

I mention this simply to call attention to the need of a thorough physical examination of every case before trying any medicine. The temporary medical treatments for certain symptoms are in place, but a thorough systematic physical examination, under an anesthetic if necessary, should be made, *then* you know where you are at.

First, we will ask ourselves, why is this uterus not developed? By getting the history of these cases we quickly see what the trouble is. Serious sickness of various kinds following each other, sometimes in quick succession during the age of puberty, will account for a small percentage of cases. But in the vast majority we will find there is a wrong mode of living, generally in the middle or upper classes. The girls study too much, long school hours, music lessons, insufficient exercise, bad air, improper food, and so on.

I find many cases in girls who are ambitious, who study hard, do severe mental work, want to be teachers, stenographers, bookkeepers, and so on, but who are descendants for seventeen generations of "*the man with the hoe*," that is, they have not the mental capacity to acquire knowledge. Have to study very hard, keep at it, and finally gain their ambition, but at what a cost. All their strength and energy has been used up in mental development. Hard mental work and poor nourishment added, nature has not been able to develop the pelvic organs, hence an infantile uterus and dysmenorrhea.

Then I run across cases later in life, unmarried women, who menstruated regularly and painlessly for ten or fifteen years, then gradually develop pain during this period, it increases, and in a year or two they have a great deal of trouble. As these are nearly all women who are earning their own living, they have great trouble in holding their positions, if they are laid up one or two days every month. On examination I find these women have small, hard uteri. *A premature atrophy of the uterus,*

caused by the non-use of the organ, or the pelvic organs. This you generally find in unmarried women, the exceptions being in sterile married women, who develop a great deal of adipose tissue.

The question now is how to relieve these troublesome cases? They go to one physician, then to the other, take any quantity of medicine without relief, sometimes become dope fiends. Some practitioners say that these girls get cured when they get married, and become pregnant, and after that they have no more trouble. This is perfectly true in some cases, but how do you know that they are going to be married, and if they do, the trouble is that they do not become pregnant. This pathologic condition prevents pregnancy, and I have often been called upon to treat sterility, and find the above described condition.

What develops muscles in any part of the body? You will all answer exercise is the only thing. They do not develop by rest. How to exercise them is the question.

Just thirty years ago I called attention to the value of dilatation in these cases, in using a dilator twice a week and continue this for months, but few patients will continue long enough; it is too painful.

Somehow, it occurred to me that by putting in a stem pessary that the uterus would try to expel it, and this exercise develop the organ. I began experiments with all kinds of stem pessaries. Formerly stem pessaries had been used for all kind of *displacements*, but it was found that infectious trouble often resulted, and severe inflammation followed, then stems were soon tabooed, and are to this day by many. Simply because they do not select their cases, and do not understand the great principle involved. I finally selected the Chambers hard rubber pessary as the best, but always had more or less trouble with the two arms coming together, and the pessary coming out, so that I was obliged to add the Thomas-Hodge Retroversion Pessary. I finally began to use silver pessaries, which are alloyed so as to make them springy, and I know they do not come together and fall out. A so-called introducer is required to get them in place. This is painful, hence requires the use of an anesthetic. Naturally everything is supposed to be aseptic, the uterus must be thoroughly dilated to enable you to introduce the stem. The uterus can be curetted first if the mucous membrane is diseased, otherwise not. After it is in it causes no more trouble. No douches or after treatment is required. The patient stays in bed twenty-four hours, that is all. I have patients wear them for years.

I must warn against the use of the pessary in diseased tubes and ovaries or adhesion, etc. *They must be absolutely excluded.* The pessary is useful only when the condition is limited to the womb. It does not relieve dysmenorrhea

caused by pus tubes, retroflexions or cirrhotic ovaries.

Naturally, we do not always have painful menstruations alone; it is often accompanied with irregularity, coming on every six or eight weeks, very scant, and very painful. Now these cases are also relieved by the stem, menstruation becomes regular and more profuse, that is, about normal.

Some of the most troublesome cases we have are those very fleshy women who are great eaters. The monthly flow becomes scant and painful. Here also the stem gives wonderful relief. It is wonderful how these women will lose flesh, if they become sensible and regulate their manner of living.

Then we have those marvelous cases of reflex nervous symptoms during or between the periods, "Mittelschmerz," as the Germans call it. The kind of cases that are often overlooked.

All I ask is for a careful selection of cases, and a fair trial, and you will seldom fail to relieve these very troublesome and often intractable cases with a silver stem pessary.

Discussion.

DR. FRANK F. DOW, Rochester, N. Y., says: The infantile uterus is the expression of anatomical or physiological defect.

The former offers no ground for treatment. The difficulty in determining to which class the case may belong justifies the effort to overcome, if possible, the obstacles to the proper development of this organ.

Presumptively the lack of development is due to unbalanced glandular stimuli. But our knowledge of these correlated functions is too meagre to be of much assistance in direct medication. We must resort therefore to attain our end to indirect medication or treatment.

This treatment may be general—that is, improved nutrition, better environment, release from depressing conditions, with recreation and rest where needed, and local, that is, stimulation of circulation in pelvic viscera. This may be effected by electricity, by massage, by proper douching, by local applications of iodine and glycerine, by increased physical exercise in certain cases, by horseback riding, and the use of the bicycle. Several cases of enlarged uteri after this treatment, followed by pregnancy after marriage, seem to prove its efficacy.

THE AMERICAN COLLEGE OF SURGEONS.

PRESENTED BY THE BOARD OF REGENTS OF THE
COLLEGE.

What is the American College of Surgeons—why should it be, what does it intend, what has it done?

American surgery at its best is the best surgery of today, but the average of surgery in

this country it not only far below this standard, but below even a reasonable standard.

This condition of affairs is largely the result of general failure to appreciate the qualifications and conditions needful for good surgery.

The very fact that surgery has so advanced in recent years has tended to loss of perspective.

Just because the art has advanced, its practitioners must be held to a stricter accounting of fitness and of results attained.

The profession has been no more to blame than the lay public, perhaps—certainly the vast multiplication of small hospitals, an important factor, is not to be laid at the doctor's door, but before the public shall gain a wider perspective, the physician and surgeon must lead the way.

The time seems ripe for something like a standardization of surgery—some understanding of the responsibilities of surgical work, some recognition of the difference between surgical work and medical practice.

The American College of Surgeons, about to hold its first formal convocation, is simply the expression of an attempt to bring about the setting of a standard for surgery in this country, and to work for a gradual raising of this standard.

The intent is to establish the standard by recognizing men now in practice whose training, experience and character entitle them to be considered specialists in surgery or in the strictly surgical specialties.

This choice must be independent of affiliations with different schools of practice, or with whatever institutions or groups of men—a choice based on individual fitness alone.

The new college is fortunate in its absolutely democratic origin.

In November, 1912, at a session of the "Clinical Congress of Surgeons" in New York—a body of men having no cohesion save their common interest in surgery, a democratic and open, not a selective body—it was proposed and voted that the presiding officer appoint a committee to consider the feasibility of such a college—the committee to act wholly independently.

The president appointed ten of those present, men from all over the country, with Canada represented. After consideration, this committee presented its plans to representative groups of active surgeons in a score of large cities all over the country, and, since these plans met approval, the groups of men from these cities were asked to go to Washington last May, to meet and to proceed to organize. Accordingly, in May, 1913, 350 men, from Toronto to New Orleans, from Boston to San Francisco, and from most of the large towns between, met with the committee, organized the college, adopted a constitution and by-laws, elected officers and laid out plans for the future.

Much of the work of the college was vested in a board of regents, fifteen in number, elected at that time. In the selection of candidates for

admission the regents are supported by a central committee on credentials, with separate subcommittees for each state and province.

At the convocation of the American College November 13th next, to be opened by the president of the Royal College of Surgeons of England, Sir Rickman Godlee, the fellowship will be granted to nearly a thousand men from the States and Canada, carefully picked from among many applicants representing, we believe, the best in surgery and surgical specialties.

The movement has so far met with a gratifying response and interest.

Other fellows will be admitted, after scrutiny, for a year to come.

After that, it is the intention to admit by examination only.

In time this scheme will result in the formation of a body like the Royal College; in time the standard set will be more definite and will tend to rise steadily.

No standard of academic examination could be applied to those now in active service.

Those who have acted for the college can only ask the profession and the public to believe that they have used their best judgment in choosing those who have asked to join in this movement.

It has been no light task; it cannot have been done perfectly; it has often been done against personal friendship as well as in spite of prejudices—those responsible have done the best they could or knew in their attempt to pick men really qualified.

There has been criticism—there will be more criticism. There are two special points of attack, first, because the college is to be a "guild"—perhaps it is, in a sense, but always an open guild, open to all who can show fitness, wherever they come from; second, because it excludes men who, though not specialists, are doing good work in surgery; there are such men, but the college does nothing to them, the failure to include them means merely that they are not, with few exceptions, the best men fitted to do the work in raising the standards that this college has set for its task.

As for the practitioner of medicine, we believe that our action will help him to gain once more the position which is not always granted him today, that of the trusted adviser of the family, and we believe that he will be the gainer if his patients learn not to demand work of him outside his chosen field.

The field of medicine offers a field not smaller or less worthy than that of surgery—they are merely not the same field.

A word more and we have done—the college has taken up one evil, so rampant in certain states as to threaten the standing of the profession as a whole, both practitioners and specialists, namely that form of commercialism known as fee-splitting.

The college will not knowingly select for, or retain within, its ranks anyone who practices fee-splitting, directly or by subterfuge.

ANNOUNCEMENT

DIRECTOR OF THE QUARANTINE LABORATORY OF THE STATE OF NEW YORK.

Dr. Joseph J. O'Connell, Health Officer of the Port of New York, is taking extraordinary means to procure a first-class bacteriologist and pathologist as successor to the late Dr. E. C. Baldwin, who was Director of the Quarantine Laboratory at Rosebank, Staten Island. The health officer has asked his Advisory Board, which consists of Dr. Joshua M. Van Cott, Dr. James Ewing, Dr. John H. Larkin, Dr. Francis Carter Wood and Dr. William Hallock Park to pass upon the qualifications of those applying for this position.

The construction of a new modern laboratory with an adequate equipment at Quarantine, makes the post a very attractive one. All applicants are advised by the health officer to send their applications and credentials to the Chairman of the Advisory Board, Dr. Joshua M. Van Cott, at the latter's address, 188 Henry Street, Brooklyn, New York. When the Board has selected the successful competitor it will submit its name to the health officer, who will then make application to the New York State Civil Service Commission for permission to employ him. Applicants should file their applications with Dr. Van Cott on or before December 6th, 1913.

The Medical Society of the State of New York.

DISTRICT BRANCHES.

FIRST DISTRICT BRANCH.

ANNUAL MEETING AT YONKERS, OCTOBER 9, 1913.

The meeting was called to order in the Hollywood Inn by the Vice-President, Dr. Henry Lyle Winter. The President being absent on account of sickness.

The minutes of the last meeting were read and approved as read. On motion the President appointed as nominating committee for the officers for the coming year, Drs. S. W. S. Toms, N. A. Warren, and G. S. Mooney.

An appropriate address of welcome was delivered by the Hon. James T. Lennon, Mayor of Yonkers.

The Committee on Nominations reported the following nominations for the ensuing year: President, Henry Lyle Winter, Cornwall; Vice-President, James E. Sadlier, Poughkeepsie; Secretary, Charles E. Denison, N. Y. City; Treasurer, Thomas F. Goodwin, Mt. Vernon. On motion the Secretary was instructed to cast an affirmative vote.

A recess was taken to enjoy the luncheon provided by the Committee on Arrangement at the City Club.

SCIENTIFIC SESSION.

"The Treatment of Typhoid Fever," W. Stanton Gleason, M.D., Newburgh.

Discussed by Drs. T. F. Goodwin, Mt. Vernon; E. I. Harrington, Yonkers; S. W. S. Toms, Nyack and S. E. Getty, Yonkers.

"Menorrhagia and Metrorrhagia, What They Signify," J. Riddle Goffe, M.D., New York.

Discussed by Drs. E. M. Hermance, Yonkers; H. Moffat, Yonkers and J. M. Lynch, New York.

"Diagnosis of Rectal Diseases," Jerome M. Lynch, M.D., New York.

Discussed by Dr. H. Moffat, Yonkers.

"Certified Milk of the Medical Society of the County of Westchester," Bertram F. Drake, M.D., New Rochelle.

"Acute Specific Fever, Manifestations in Nose and Throat with Treatment," Earl Parsons Lasher, M.D., New York.

"Late Cerebrospinal Manifestations of Inherited Syphilis," Henry Lyle Winter, M.D., Cornwall. Read by title.

FIFTH DISTRICT BRANCH.

ANNUAL MEETING AT ONEIDA, OCTOBER 2, 1913.

The meeting was called to order by the President, Dr. Otto Pfaff.

There were one hundred and thirty in attendance.

MORNING SESSION.

President's Address, Otto Pfaff, M.D., Oneida.

"Some Observations in Recent Cases of Fracture," Eugene H. Carpenter, M.D., Oneida.

"A Plea for Cæsarean Section," Fred J. Douglas, M.D., Utica.

"Some Thoughts on Atypical Pneumonia in Infancy,"

Edward J. Wynkoop, M.D., Syracuse.

At the time designated for the paper by Dr. Nathan Jacobson, deceased, appropriate remarks were made by Dr. W. Dewey Alsever, of Syracuse, and Dr. William Gibson, Utica.

"Post-operative Treatment of Sarcoma," Frederic H. Calkins, M.D., Watertown.

The meeting adjourned at 1 P. M. to the Presbyterian Church, where an elaborate luncheon was served.

The afternoon session commenced at 3.15 P. M., and the following officers were elected:

President, Dr. Frederick H. Flaherty, Syracuse; Vice-President, Dr. William D. Garlock, Little Falls; Secretary, Dr. James F. McCaw, Watertown; Treasurer, Dr. George F. Mills, Oneida.

"Congenital Cystic Kidney," by F. B. Lund, M.D., Boston, Mass., read by I. J. Walker, M. D., of Boston, Mass.

"Importance of Cystoscopic Examination," Jesse R. Pawling, M.D., Watertown.

"Diagnosis and Treatment of Iritis," R. L. Crockett, M.D., Oneida.

"Backache," Clarence E. Coon, M.D., Syracuse.

"Some Phases of Insanity," Samuel W. Hamilton, M.D., Utica.

SEVENTH AND EIGHTH DISTRICT BRANCHES.

JOINT ANNUAL MEETING, AT SONYEA, SEPTEMBER 24 AND 25, 1913.

The meeting of the Eighth District Branch was called to order by the President, Dr. Bennett, Wednesday evening, September 24th. Owing to absence of the Secretary the minutes of the last meeting were not read.

A motion was made and carried that the next annual meeting be held at Buffalo, the date to be decided by the Executive Committee.

Preceding the election of officers the plan was discussed of continuing the office of President for a two-year term beginning with the present year.

The election of officers which took place at the business session of the Eighth District Branch resulted as follows:

President, Arthur G. Bennett, Buffalo, re-elected to serve for one year from date; First Vice-President, Carl G. Leo-Wolf, Niagara Falls; Second Vice-President, Albert T. Lytle, Buffalo; Secretary, Edward A. Sharp, Buffalo; Treasurer, F. H. Van Orsdale, Belmont.

THURSDAY, SEPTEMBER 25, 1913.

SCIENTIFIC SESSION HELD WITH THE SEVENTH DISTRICT BRANCH.

President's Address, "The Eighth District Branch," Arthur G. Bennett, M.D., Buffalo.

President's Address, "The Seventh District Branch," William T. Shanahan, M.D., Sonyea.

"The Burden of Mental Defect," Herman G. Matzinger, M.D., Buffalo.

"Field Work In the Study of Epilepsy," David F. Weeks, M.D., Skillman, N. J. Illustrated with lantern slides.

Dr. William T. Shanahan, Superintendent of the Craig Colony for Epileptics, and the medical staff of the institution, gave a luncheon at one o'clock at which

there were about one hundred members and guests present.

Immediately following the luncheon the business session of the Seventh District Branch was held. The meeting was called to order by the President, Dr. W. T. Shanahan.

In the absence of the secretary of the Seventh District Branch a motion was made and carried that the Secretary of the Eighth District Branch act as secretary and report the transactions of the joint meeting of the two District Branches.

At the business session of the Seventh District Branch all the officers for the past year were re-elected. President, William T. Shanahan, Sonyea; Vice-President, Frederick J. Bowen, Mt. Morris; Secretary, J. F. Myers, Sodus; Treasurer, H. J. Knickerbocker, Geneva.

Following the business session of the Seventh District Branch the scientific session was resumed jointly with the Eighth District Branch.

The President of the Medical Society of the State of New York, Dr. William Francis Campbell, of Brooklyn, gave a short address on the value of membership in the State Society.

The papers of Dr. Matzinger and Dr. Weeks were discussed by Drs. Gertrude E. Hall, Albany; A. L. Shaw, Sonyea; and M. M. Allen, Rochester.

"Recent Advances in Neurology and Psychiatry," Edward L. Hanes, M.D., Rochester. Discussion by Dr. Eveline P. Ballintine, Rochester.

"Landry's Paralysis and Its Relation to Acute Epidemic Poliomyelitis," Edward A. Sharp, M.D., Buffalo. Discussion by Dr. J. F. Bowen, Mt. Morris.

"Suggestions for a New Classification of the Syphilides," Grover W. Wende, M.D., Buffalo. Illustrated with lantern slides.

The papers by Dr. J. F. Munson, Sonyea, "Sugar Tolerance in Epilepsy," and that of Dr. G. K. Collier, Sonyea, "Intravenous Use of Paraldehydes," were read by title owing to the lateness of the hour.

"A Further Report Upon Some Hematological Cases," John M. Swan, M.D., Rochester.

COUNTY SOCIETIES.

CORTLAND COUNTY MEDICAL SOCIETY.

The Cortland County Medical Society, at a regular meeting, held on October 3, 1913, passed the following resolutions:

Regarding the biennial publication by the State Society of the Medical Directory of New York, New Jersey and Connecticut.

WHEREAS, It is well known that the annual publication of the State Medical Directory costs the State Society about six thousand (\$6,000) dollars for each edition, and that such annual publication seems unnecessary owing to the comparatively few changes needed in each new edition, and as the biennial publication of the Directory (with possibly a correction slip for insertion on the non-publication year) should and would cover all needs, thereby saving an expenditure of three thousand dollars per year and make available this amount for other necessary expenses of the State Society, therefore, be it

Resolved, That it is urged and recommended by the Cortland County Medical Society that the annual publication of the Directory be suspended in favor of a biennial edition and the funds thus made available be used for other needs of the State Society.

Regarding the Prosecution of Illegal Practitioners.

WHEREAS, It is known that the system now employed for the prosecution of illegal practitioners of medicine in this state is little better than useless, largely owing to the lack of necessary funds and organized efforts, and

WHEREAS, Local feeling among the laity, whereby right motives are misjudged and misunderstood, the natural desire of the average practitioner of medicine

to shun public notoriety of this kind, and for various other reasons, and

WHEREAS, The State Medical Society has frequently signified its willingness to undertake the prosecution of illegal practitioners of medicine provided necessary funds are available and the various county societies assist in procuring evidence, therefore be it

Resolved, That this Society urge such action by the State Society; that the State Society Council finds ways and means for so doing; that the House of Delegates of the State Society be urged to take the formal steps toward the formulary for such prosecution, and that this Cortland County Medical Society pledges itself to aid in every way possible the procuring of evidence against and the prosecution of illegal practitioners of medicine in all cases under investigation by Counsel and deemed suitable for such action.

(Signed) CORTLAND COUNTY MEDICAL SOCIETY.

D. R. REILLY, *Secretary*.

October 3, 1913.

The Medical Societies of the Counties of Broome and Tompkins have also passed both of the above resolutions.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

At a regular meeting, held in New York City on October 27, 1913, the following resolutions were unanimously passed:

Regarding the biennial publication by the State Society of the Medical Directory of New York, New Jersey and Connecticut.

WHEREAS, Resolutions have been passed by the Cortland County Medical Society, recommending the publication of the Directory biennially, and

WHEREAS, In the opinion of the Medical Society of the County of New York this would not be in the best interest of the Medical Society of the State of New York for the following reasons:

The Directory is of great value in keeping a correct roster of the legal practitioners of the State and should be issued full and complete each year.

The number of changes in the Directory each year is very great, comprising as they do changes in the personnel of the profession in three states. The officers of the societies, hospital and dispensary appointments, and the other information contained in the Directory, which adds great value to the publication, must, in order to have it accurate, be compiled each year. The amount the Society would lose in advertisements and in sales off years cannot be calculated, but would undoubtedly be a serious matter and might add to the cost of the Directory in other years.

The printing of the changes in the personnel of the profession on the alternate years, and the distribution of the same, would cost a sum that would vary from year to year, but the saving would not, in the opinion of the Medical Society of the County of New York, compensate for the disadvantage to the members of looking up names and other data in both the original Directory and the addendum.

Now, therefore, be it Resolved, That the Medical Society of the County of New York is strongly in favor of the publication annually by the Medical Society of the State of New York of the Medical Directory of New York, New Jersey and Connecticut, and be it further

Resolved, That the Delegates of the Medical Society of the County of New York be instructed to use every effort to have the Directory published annually, and that a copy of these resolutions be sent to every county society in the State of New York with the request that they do all in their power to continue the annual publication of the Directory.

Regarding the Prosecution of Illegal Practitioners.

WHEREAS, Resolutions have been passed by Cortland County Medical Society recommending the establish-

ment of a State Department for the prosecution of illegal practitioners in the various counties in the State, and

WHEREAS, In the opinion of the Medical Society of the County of New York the establishment of such a department would be prohibitive in cost, the expense in New York County alone being far in excess of the estimate for the entire State in the aforementioned resolution, and

WHEREAS, In the opinion of the Medical Society of the County of New York the prosecution of illegal practitioners can best be done by individual county societies for the reasons that they are most familiar with the necessities of the work in their own county, now therefore,

BE IT RESOLVED, That it is the opinion of the Medical Society of the County of New York that the interests of the profession will be best conserved by the prosecution of illegal practice by each county, and be it further

RESOLVED, That a copy of these resolutions be sent to every county society in the State with the request that the Delegates be instructed to vote against the establishment of any such bureau.

(Signed) THE MEDICAL SOCIETY
OF THE COUNTY OF NEW YORK.
BROOKS H. WELLS, *President*.
JOHN VAN DOREN YOUNG, *Secretary*.

October 27, 1913.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

REGULAR MEETING, BUFFALO, OCTOBER 20, 1913.

President Whitwell called the meeting to order at 8.30 o'clock

The Secretary read the minutes of the regular meeting of June 16, 1913, and also the minutes of the Council meeting of October 7, 1913, both of which were approved as read.

Dr. Lytle, on behalf of the Committee on Membership, presented the following applications which had been favorably acted upon by the Council.

Drs. Robert King and Christopher Fletcher, on transfers from the Medical Society of the County of St. Lawrence; Dr. Frank E. Brundage, on transfer from the Medical Society of the County of Allegany; Drs. Albert F. Ostwald, Nadrina Kavinsky and Jennie Harper Harris, as new members. The Secretary was directed to cast the ballot of the Society and they were declared duly elected.

President Whitwell stated that nominations were now in order for the annual election to be held on the third Monday in December, 1913.

The following nominations were made: Dr. John V. Woodruff for President, Dr. Arthur W. Hurd for 1st Vice-President; Dr. Franklin W. Barrows for 2d Vice-President; Dr. Franklin C. Gram for Secretary and Dr. Albert T. Lytle for Treasurer. For Censors the present members of the Board of Censors, as follows: Dr. John D. Bonnar, Dr. Francis E. Fronczak, Dr. Arthur G. Bennett, Dr. Irving W. Potter and Dr. Archibald D. Carpenter. Dr. F. Park Lewis for Chairman of the Committee on Legislation. Dr. Henry R. Hopkins for Chairman of the Committee on Public Health. Dr. Grover W. Wende for Chairman of the Committee on Membership. The following were nominated as delegates to the State Society for the year 1914-15, four of whom are to be elected: Dr. Albert T. Lytle, Dr. Julius Ullman, Dr. Julius Richter, Dr. J. F. Whitwell, Dr. DeLancey Rochester and Dr. Franklin W. Barrows.

Nominations were then declared closed.

Dr. Edith R. Hatch then presented a paper on the subject, "Is the Teaching of Sex Hygiene Advisable in Our Public Schools?"

This paper brought forth a very lively discussion for and against the proposition, by one of the largest attended meetings that the society has had for a long time.

There were present at this discussion, on invitation,

Henry P. Emerson, Superintendent of Education, and a large number of other members of the Department of Education. At the close of the meeting a collation was served.

MEDICAL SOCIETY OF THE COUNTY OF SARATOGA.

ANNUAL MEETING, AT LUZERNE, SEPTEMBER 30, 1913.

The following officers were elected for the ensuing year: President, Frank F. Gow, Schuylerville; Vice-President, Roland H. Stubbs, Waterford; Secretary, James T. Sweetman, Jr., Ballston Spa; Treasurer, Thomas E. Bullard, Schuylerville. Censors: F. J. Sherman, J. R. MacElroy and D. C. Moriarta.

SCIENTIFIC SESSION.

President's Address, J. B. Ledlie, M.D., Saratoga Springs.

"Report of a Case," G. F. Comstock, M.D., Saratoga Springs.

"A Plea for More Careful Examination of Uterine Scrapings," J. F. Humphrey, M.D., Saratoga Springs.

"Renal Calculus," J. R. MacElroy, M.D., Saratoga Springs.

"Obturation Ileus," G. S. Towne, M.D., Saratoga Springs.

MEDICAL SOCIETY OF THE COUNTY OF SENECA.

ANNUAL MEETING, AT INTERLAKEN, OCTOBER 9, 1913.

The following officers were elected for 1914: President, Lewis Arthur Gould, Interlaken; Vice-President, Carroll B. Bacon, Waterloo; Secretary, Frederick W. Lester, Seneca Falls; Treasurer, Robert Knight, Seneca Falls. Censors, J. E. Medden and R. Knight of Seneca Falls; Lewis A. Gould, Interlaken. Delegate to State Society, J. E. Medden, Seneca Falls. Alternate, A. J. Frantz, Seneca Falls.

MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

ANNUAL MEETING, AT HUDSON FALLS, OCTOBER 7, 1913.

Meeting called at 11 A. M. Dr. McKenzie president pro tem.

* Minutes of last meeting were read and approved as read.

Report of the Comitia Minora meeting held at the office of the Secretary, August 28, 1913, was duly presented.

Drs. Casey, Connally, Pashley, Budlong, Stillman, Sumner and Tenney were appointed on the Program for the Annual Meeting.

Drs. Melick, Cuthbert and Park were appointed Entertainment Committee for the meeting of the Fourth District Branch.

The following officers were elected for 1914: President, Willis A. Tenney, Granville; Vice-President, John Millington, Greenwich; Secretary, Silas J. Banker, Fort Edward; Treasurer, Russell C. Paris, Hudson Falls. Censors: J. T. Park, Hudson Falls; C. W. Sumner, North Granville, and G. M. Stillman, Argyle. Delegate to State Society: W. B. Melick, Ford Edward.

The following amendments to the By-Laws were adopted.

Resolved, That Section 1, Chapter VII, the word "four" in line 6 be changed to "three."

Resolved, That Section III, Chapter X, read as follows:

"Members whose dues or assessments for the current year are unpaid on May 1st, or who are under suspension, shall not be eligible for nomination or appointment to any official position in the Society, nor shall they be entitled to vote or to receive the notices, publications or privileges of the Society until their dues are paid."

The President appointed Dr. D. C. McKenzie a member of the Committee on Legislation.

Dr. Budlong read a paper by Dr. Edward Adams of New York on the "Treatment of Ulcer of the Leg."

Discussed by Drs. Banker, Paris and Stillman.

After an adjournment for dinner and the Meeting of the Comitia Minora at 1.30 the afternoon session was opened by the President, who addressed the meeting on "The Medical Man in Business," and discussed the subject of Fees.

Dr. Jenkins presented a case with amplifications and was tendered a vote of thanks.

"Treatment of Ulcer of the Leg," Edward Adams, M.D., New York.

Discussion by Drs. S. J. Banker, R. C. Paris; and G. M. Stillman.

"Early Arterial Conditions; Prophylactic Treatment by Early Diagnosis and Diet, etc," C. W. Sumner, M.D., North Granville.

"Gall Stones with Operation," S. Pashley, M.D., Hartford.

MEDICAL SOCIETY OF THE COUNTY OF
DUTCHESS.

ANNUAL MEETING, AT POUGHKEEPSIE, OCTOBER 8, 1913.

The following officers were elected for 1914: President, Louis C. Wood, Poughkeepsie; Vice-President, Robert H. Breed, Wappingers Falls; Secretary, Frederick J. Mann, Poughkeepsie; Treasurer, Lewis H. Marks, Poughkeepsie; Assistant Secretary, John H. Dingman, Poughkeepsie. Censors: D. H. MacKenzie, Millbrook; J. H. Cotter, Poughkeepsie; H. P. Carpenter, Poughkeepsie. Delegate to State Society: A. L. Peckham, Poughkeepsie; Alternate, F. W. Parsons, Poughkeepsie.

SCIENTIFIC SESSION.

President's Address, M. M. Lown, M.D., Rhinebeck. "Acute Rheumatism, Causes and Pathology," S. L. Smith, M.D., Poughkeepsie.

"Acute Rheumatism, Treatment," P. L. Dodge, M.D., Poughkeepsie.

"Chronic Rheumatism," J. H. Cotter, M.D., Poughkeepsie.

ONONDAGA MEDICAL SOCIETY.

REGULAR MEETING, SYRACUSE, TUESDAY, SEPTEMBER 23, 1913.

SCIENTIFIC SESSION.

"Practical Points in the Administration of Ether or Chloroform," J. J. Buettner, M.D., Syracuse.

"Preparation of Patient and Room for Operation in Private House," F. H. Flaherty, M.D., Syracuse.

"After Care of Surgical Cases in Private Homes," G. B. Broad, M.D., Syracuse.

MEDICAL SOCIETY OF THE COUNTY OF
STEUBEN.

SEMI-ANNUAL MEETING, AT CORNING, OCTOBER 14, 1913.

The following officers were elected for 1914: President, Douglass H. Smith, Bath; Vice-President, William E. Barron, Addison; Secretary-Treasurer, Bertis R. Wakeman, Hornell. Censors—F. S. Swain, L. M. Kysor, F. L. Spaulding, F. C. Shaut and O. K. Stewart. Delegate to State Society—B. R. Wakeman, Hornell. Delegate to Sixth District Branch—L. M. Kysor, Hornell.

SCIENTIFIC SESSION.

"The Last Thought on Blood Pressure," C. R. Bowen, M.D., Almond.

Discussion opened by J. Raymond Kelly, M.D., Hornell.

"Vaccine and Vaccine Therapy," C. A. Bentz, M.D., Buffalo.

Discussion opened by L. M. Kysor, M.D., Hornell. "The Belt Hook in the Treatment of Fracture," B. R. Wakeman, M.D., Hornell.

Discussion opened by O. K. Stewart, M.D., Canisteo. "Treatment of Septic Abortion," James E. King, M.D., Buffalo.

Discussion opened by H. B. Smith, M.D., Corning.

THE MEDICAL SOCIETY OF THE COUNTY OF
LIVINGSTON.

ANNUAL MEETING AT GENESEE, OCTOBER 7, 1913.
BUSINESS SESSION.

The following officers were elected for the ensuing year; President, Arthur H. Paine, Caledonia; Vice-President, James F. Munson, Sonyea; Secretary and Treasurer, George K. Collier, Sonyea; Delegate to State Society, G. K. Collier, Sonyea.

SCIENTIFIC SESSION.

"Pemphigus Vegetans," W. E. Lauderdale, M.D., Geneseo.

MEDICAL SOCIETY OF THE COUNTY OF
WARREN.

ANNUAL MEETING AT FRENCH MOUNTAIN, OCTOBER 8, 1913.

BUSINESS SESSION.

The following officers were elected for 1914: President, Edgar B. Probasco, Glens Falls; Vice-President, Morrison L. Haviland, Glens Falls; Secretary and Treasurer, Virgil D. Selleck, Glens Falls; Censors, E. D. Elliott, J. J. Montgomery, and A. McKee; Delegate to State Society, H. E. Clarke, Glens Falls; Delegate to Fourth District Branch, B. J. Singleton, Glens Falls.

SCIENTIFIC SESSION.

President's Address, "Anemia," S. A. Rowe, M.D., Glens Falls.

"Some Clinical Studies of the Circulation, Especially in Regard to the Venous Pulse," Henry Hun, M.D., Albany.

"Medicine in China—Ancient and Modern," George F. De Voll, M.D., Luh Hoh, China.

"The Value of Co-operation in Conservation of the Public Health," J. W. Le Seur, M.D., Batavia.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MATERIA MEDICA, PHARMACOLOGY, THERAPEUTICS AND PRESCRIPTION WRITING. For Students and Practitioners. By WALTER A. BASTEDO, Ph.G., M.D., Associate in Pharmacology and Therapeutics at Columbia University. Octavo of 602 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3.50 net.

ESSENTIALS OF PRESCRIPTION WRITING. By CARY EGGLESTON, M.D., Instructor in Pharmacology, Cornell University Medical College, New York City. 32mo of 115 pages. W. B. Saunders Company, 1913. Cloth, \$1.00 net.

THE WHITE LINEN NURSE. By ELEANOR HALLOWELL ABBOTT, with illustrations by HERMAN PFEIFER, New York. The Century Co., 1913.

COMPEND OF DISEASES OF THE SKIN. By JAY F. SCHAMBERG, A.B., M.D., Professor of Dermatology, Philadelphia Polyclinic. Fifth edition, revised. 112 illustrations. 12mo. XV plus 302 pages. Blakiston's? Quiz-Compend? Series. Cloth, \$1.00; interleaved for the addition of notes, \$1.25.

APPLIED PATHOLOGY, being a guide to the Application of Modern Pathological Methods to Diagnosis and Treatment. By JULIUS M. BERNSTEIN, M.B. (Lond.); D. P. H. (Camb.); M. R. C. P., assistant physician (late pathologist) to the West London Hospital; Lecturer Clinical Pathology, Postgraduate College; Physician Putney and Royal Ear Hospitals, Lecturer in Bacteriology, Westminster Hospital Medical School, etc. Illustrated with five coloured plates and forty-six drawings. London: University of London Press. Published for the University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde.

ANATOMY, DESCRIPTIVE AND APPLIED. By HENRY GRAY, F.R.S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. New (English) edition, thoroughly revised and re-edited, with the *Basle Anatomical Nomenclature in English*, by ROBERT HOWDEN, M.A., M.B., C.M., Professor of Anatomy in the University of Durham, England. Imperial octavo, 1,407 pages, with 1,126 large and elaborate engravings. Cloth, \$6.00 net; leather, \$7.00 net. Lea & Febiger, Publishers Philadelphia and New York, 1913.

THE OPERATING ROOM AND THE PATIENT. By RUSSELL S. FOWLER, M.D., Chief Surgeon First Division, German Hospital, Brooklyn, N. Y. Third edition rewritten and enlarged. Octavo volume of 611 pages with 212 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3.50 net.

DORLAND'S AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Seventh revised edition. Edited by W. A. NEWMAN DORLAND, M.D. Large octavo of 1,107 pages, with 331 illustrations, 119 in colors. Containing over 5,000 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1913. Flexible leather, \$4.50 net; thumb indexed, \$5.00 net.

DISEASES OF THE RECTUM AND PELVIC COLON. By MARTIN L. BODKIN, M.D., illustrated. New York: E. B. Treat & Co., 1913. 416 pp., 8 vo. Cloth, \$3.50.

PROTEIN SPLIT PRODUCTS in Relation to Immunity and Disease. By VICTOR C. VAUGHAN, M.D., LL.D., Dean Dept. Medicine and Surgery, University Michigan; VICTOR C. VAUGHAN, Jr., M.D., A.B., in charge tuberculosis work, Detroit Board of Health, Jr. attend. physician, Harper Hospital, Detroit; and J. WALTER VAUGHAN, M.D., A.B., Jr. attend. surgeon, Harper Hospital, Detroit. Illustrated. Lea & Febiger, Philadelphia and New York, 1913.

SURGERY OF THE VASCULAR SYSTEM. By BERTRAM M. BERNHEIM, A.B., M.D., Instructor in Surgery, Johns Hopkins University, Baltimore. With 53 illustrations in text. Philadelphia and London: J. B. Lippincott Company.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otolaryngology, Rhinology, Laryngology, Hygiene, etc. By leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U. S. A. With the collaboration of JOHN A. WITHERSPOON, M.D., Nashville, Tenn; Sir WM. OSLER, M.D., Oxford; A. MCPHEDRAN, M.D., Toronto; FRANK BILLINGS, M.D., Chicago; CHAS. H. MAYO, M.D., Rochester; THOS. H. ROTCH, M.D., Boston; JOHN G. CLARK, M.D., Philadelphia; JAMES J. WALSH, M.D., New York; J. W. BALLANTYNE, M.D., Edinburgh; JOHN HAROLD, M.D., London; RICHARD KRETZ, M.D., Vienna. Volume III. Twenty-third series, 1913. Philadelphia and London: J. B. Lippincott Company. Price \$2.00.

BOOK REVIEWS.

SKIN DISEASES IN GENERAL PRACTICE, THEIR RECOGNITION AND TREATMENT. By HALDIN DAVIS, M.B., B.Ch., B.A. Oxon., F.R.C.S. Eng, M.R.C.P., Physician in charge Skin Dept., Paddington Green Children's Hospital; Chief Assist. Skin Dept., St. Bartholomew's Hospital; Asst. Physician Hospital Diseases of Skin, Blackfriars. London: Henry Frowde. New York: Oxford University Press, 1913. 340 pp., 8vo. Cloth, \$3.75.

The author is to be congratulated for having produced a work on dermatology which will be of service to the general practitioner. Many have attempted to do this before, but the work under review is perhaps the best of its kind that has ever been written.

He has followed the example of Sabouraud, "Topographical Dermatology," and has classed the various skin diseases according to the part of the body where they are most frequently observed. The avoidance of the subject of classification should be pleasing to the general practitioner, for whenever the latter reads a chapter on classification he is very apt to become confused in his understanding of the whole subject of dermatology.

The first chapter of the book serves as the introduction. The next three discuss those diseases that go largely to make up the sum total of dermatology—diseases of pyogenic origin, eczema and syphilis. The author, by giving a chapter to each, has emphasized the fact that all doctors of medicine should at least be familiar with these common diseases.

From chapter five to fourteen inclusive the diseases are considered according to their topographical distribution. The last chapter deals with some modern methods of treatment, such as radium, X-ray, refrigeration, etc., and it is surprising how much useful knowledge is contained in so small a space.

The plates and other illustrations are excellent, and the presswork is good.

Again the reviewer wishes to congratulate the author on having produced a work on dermatology that will meet the requirements of the general practitioner.

W.

THE CATARRHAL AND SUPPURATIVE DISEASES OF THE ACCESSORY SINUSES OF THE NOSE. By ROSS HALL SKILLERN, M.D., Professor of Laryngology, Medico-Chirurgical College; Laryngologist Rush Hospital, etc. Philadelphia and London: J. B. Lippincott Co., 1913. 389 pp., 8vo. Cloth, \$5.00.

This work, entirely devoted to the accessory sinuses of the nose, is remarkable in the fact that it is the first formal treatise in the English language devoted wholly to this restricted field.

The author has attempted, in the German manner, a thorough treatise devoted to these integral structures of the nose concerning which a continuously widening appreciation has been developing during the past two decades.

Necessarily, most of the subject matter of the book is material industriously culled from the work of hundreds of specialists abroad and at home; but as to the real work of the author—the collation, the arrangement, the sifting of facts and their presentation in due proportion—these the reviewer considers worthy of hearty commendation.

"General Considerations," being Part I of the book, include the anatomical study of the regions which the author for convenience has divided dogmatically into three portions which he calls (1) inferior turbinal portion, (2) middle turbinal portion, and (3) ethmoidal portion. These include the entire outer wall of the interior of the nose and are examined seriatim, superficially (from within the nose) and the successive structures beneath them (from within outwardly). Thus the turbinates are removed in order to examine the ostiums of the sinuses themselves. The development of the sinuses from birth is traced.

Part I of the book further contains, under separate

headings, the physiology of the sinuses, their uses (including the various present and former theories regarding them), the mechanism of their normal drainage, their bacteriology, causes of their diseases, the reasons for chronicity, their pathology, general symptomatology, diagnosis, treatment, and complications.

The four subsequent parts of the book treat, respectively, the maxillary, the frontal, the ethmoidal, and the sphenoidal sinuses. In each of these divisions the author expounds the anatomical relationship of each, normal and abnormal, their acute and chronic inflammations, the methods of the surgical examination of each, their respective complications, etiology, pathology, prognosis and surgical treatment, detailing the steps of the various operations of well-known authorities.

The book is thus more than a mere compilation covering the recent advances in the entire field of the surgery of the nasal accessory sinuses. It is a well-planned work in which all pertinent details have been conscientiously presented. The reviewer feels personally grateful to the author who has placed in convenient form, and more fully than has heretofore been attempted in English the diagnosis and treatment of diseases of the nasal accessory sinuses. The two hundred and forty-seven illustrations, the five colored plates and the novel frontispiece are newly made for the book.

WILLIAM C. BRAISLIN.

HEALTH AND LONGEVITY THROUGH RATIONAL DIET. Practical Hints in Regard to Food and the Usefulness or Harmful Effects of the Various Articles of Diet. By Dr. ARNOLD LORAND. Philadelphia: F. A. Davis Co., 1912. 416 pp., 8vo. Cloth, \$2.50.

This book reflects the ripe experience of a wise physician who in many years of medical practice in Carlsbad had exceptional opportunities for studying the relationships between diet and health. It contains much valuable information about the different food substances, and discusses, among others, the following topics: the influence of food on men, the fundamental laws of rational feeding, injurious modes of feeding, vegetarianism, the practical advantages of rational feeding, hints for those obliged to take their meals in restaurants, the increased activity of certain functions brought about by food, the relationship of food to old age and longevity.

The practical conclusion to which the author arrives is, "that a milk-egg-vegetable diet is the best and at the same time the most rational for mankind." He says: "While during youth, especially during the period of growth, the use of meat is very beneficial, when not taken in too large quantities, it is not required by the adult, nor by persons in advanced age; and when, on the contrary, it is taken in large quantities, as in England and America, three times a day, or with us twice a day in large amounts, there is no doubt that the action of the decomposition products may prove very prejudicial to our organs."

The author's remarks on the good and evil qualities of various food substances are particularly interesting and instructive, but not everyone will agree with all his statements. Some articles which the reviewer thinks deserve scant and disparaging notice he treats with leniency, as for example some of the more undesirable varieties of animal food, notably liver, kidneys and sweetbreads, which the author says should not be eaten by the gouty or by diabetics, but which he fails to forbid in other conditions.

He also entertains what seems to be an exaggerated opinion of the dietetic value of eggs, which is admittedly high. He says: "An egg diet is indicated whenever the albumin of the body is deficient or lacking, as after exhausting illness. When cooked they form an excellent food in kidney troubles." This statement seems too broad in view of the capacity of eggs for decomposition in the intestinal tract and the special susceptibility manifested by many apparently healthy people to the intestinal toxins produced by them.

His enthusiasm for strawberries the reviewer does not share.

His high regard for bananas seems justifiable and the following observation which he made deserves to be quoted: "I once saw a young American lady from the West who could eat twenty-six bananas, one after the other, without experiencing any discomfort."

Altogether this book is very interesting and readable, and its teaching in general seems to be wise and sound. It is certainly far in advance of current medical opinion.
E. E. C.

A LABORATORY MANUAL OF INVERTEBRATE ZOOLOGY. By GILMAN A. DREW, Ph.D., Assist. Director Marine Biological Laboratory, Woods Hole, Mass. With the aid of members of the Zoological Staff of Instructors at the Marine Biological Laboratory. Second edition. 12mo of 213 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.25 net.

This is the second edition of a working manual of general zoology based upon a set of laboratory directions prepared by the assistant director and some of the instructors at the Marine Biological Laboratory of Woods Hole, Massachusetts. It is a practical guide for workers in this field. Various forms are described and literature lists suggested. The important points of anatomy and adaptation are indicated and an attempt is made to keep students from making everything conform to type, since they are then less likely to miss wonderful adaptations.
A. C. J.

MECHANICAL TREATMENT OF ABDOMINAL HERNIA. By WILLIAM BURTON DEGARMO, M.D., Professor of Special Surgery, N. Y. Post-Graduate Medical School and Hospital, etc. Philadelphia and London: J. B. Lippincott Co., 1913. Cloth, \$1.50.

This excellent little work should be much appreciated by truss makers and those whose duty it is to fit these appliances. The former are not men of medical education and as a result they have been working under a disadvantage. In this they will find an excellent guide. The general practitioner should measure for the truss himself and should supervise the fitting of these supports to obtain the best results. Too often a patient is dismissed by the family advisor with instructions to obtain a truss. The case should remain under his observation. As a rule the patient passes out of the doctor's hands when merely such advice is given. The physician will find between these covers much profitable reading. Detailed instructions are given in regard to measuring and fitting trusses, the best types to select for the various hernias and their care. American, English, French and German trusses are illustrated and described; their merits and demerits are discussed. It is to be regretted that electrotypes have been accepted for economic reasons from the manufacturers bearing their advertisement. This shows poor taste and mars the beauty of the book from the artistic standpoint.

To those who have no interest in the surgery of hernia this should prove a useful and suggestive book. It is presented in the author's well-known clear and concise way.
ROYALE H. FOWLER.

PREVENTIVE MEDICINE AND HYGIENE. By MILTON J. ROSENAU, Professor Preventive Medicine and Hygiene, Harvard; formerly Director Hygienic Laboratory, U. S. Public Health Service. With chapters upon Sewage and Garbage, by GEORGE C. WHIPPLE, Professor Sanitary Engineering, Harvard; Vital Statistics, by CRESSY L. WILBUR, Chief Statistician, Bureau of the Census, Department of Commerce and Labor; The Prevention of Mental Diseases, by THOMAS W. SALMON, Director of Special Studies, National Committee for Mental Hygiene, etc. New York and London. D. Appleton and Company. 1913.

In style and content Rosenau's "Preventive Medicine" leaves nothing to be desired. The book is a mine of information. The conscientious physician will find much in it to furbish up his knowledge of such matters as the Pasteur prophylactic treatment, vaccination, etc. Probably there are many physicians who would be

interested to know why Germany has prohibited scarification since 1897, by ministerial decree. The remarks on the hygiene of sex are in accordance with the modern view, which regards the old-style innocence as present-day ignorance. The newer knowledge of poliomyelitis, which the author has done so much to augment through his discoveries in connection with the *Stomoxys calcitrans*, is thoroughly set forth. The classification of diseases followed is a very satisfactory one, namely, into those having specific or special prophylactic measures, those spread largely through the alvine discharges, those spread largely through discharges from the mouth and nose, those borne by insects, and miscellaneous. The section on immunity, heredity and eugenics is a masterly exposition of these subjects. There are sections on sewage disposal, refuse disposal, vital statistics, industrial hygiene and diseases of occupation, schools, disinfection, air, food, soil and water. There are special contributions by George C. Whipple (sanitary engineering), Cressy L. Wilbur (vital statistics), and Thomas W. Salmon (mental diseases). This book covers all points of modern public health work more adequately than any other known to us. Even economic and social difficulties are given due consideration, for, as the author says, preventive medicine has become a basic factor in sociology.

A. C. J.

SURGERY OF THE EYE. A Hand-book for Students and Practitioners. By ERVIN TÖRÖK, M.D., Surgeon N. Y. Ophthalmic and Aural Inst.; Ophthalmic Surgeon Beth Israel Hosp.; Consult. Ophthal. Tarrytown Hospital, and GERALD H. GROUT, M.D., Asst. Surgeon N. Y. Ophthalmic and Aural Institute; Instructor Eye Dept. Vanderbilt Clinic; Consult. Ophthal. Bellevue Hospital. Octavo, 507 pages, with 509 original illustrations, 101 in colors, and 2 colored plates. Cloth, \$4.50 net. Lea & Febiger, Publishers, Philadelphia and New York. 1913.

Until a few years ago, the typical books on ophthalmology devoted a number of pages to the principles of optics, gave some directions about refraction, described the more or less common diseases of the eye and concluded with a description of the important operations. However, within recent years the profession has been favored with text-books devoted exclusively to ophthalmic surgery. The latest and one of the best works of its class is "Surgery of the Eye." Very little if any extraneous matter has been introduced, in order to "fill up." On the other hand, few if any important details have been omitted. Exactly what the surgeon needs to know is stated briefly and concisely.

In order to give one a comprehensive idea of the operations described, the authors have adopted a logical arrangement of topics. The indications and the contraindications are pointed out. Full particulars are given regarding the preparation of patients. The necessary instruments are enumerated. Each successive step of the various operations is thoroughly explained. Numerous illustrations and schematic figures materially aid the reader in gaining a clear understanding of the subject. The after-treatment is carefully considered. The authors are to be congratulated for the thoroughness with which they have completed their task. Doubtless, "Surgery of the Eye" will prove to be a helpful mentor both to the inexperienced and the experienced.

J. W. I.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS. By JOSEPH B. DELEE, A.M., M.D., Professor of Obstetrics at the Northwestern University Medical School, Chicago. Cloth. Price \$8.00 net. Pp. 1,060, with 913 illustrations. Philadelphia: W. B. Saunders, 1913.

Book-making, like all modern art, has evolved itself into perfection, so far as the present generation of man is able to judge. The new work of Dr. DeLee, one of the most elaborate text-books on obstetrics in recent years, not only exemplifies the best in mere book-making, but the most modern in the science of obstetric art.

This work is based on the author's "Notes on Obstetrics," segregated during his twenty-one years of

teaching, combined with eight years of actual preparation, and therefore contains all that is known of the science and practice of midwifery. The needs of the student, as well as the general practitioner, are constantly held in view, emphasizing and separating the scientific from the practical. Full and explicit advice is given, illustrated profusely and intelligently with drawings, photographs and X-ray plates, many of which are original and have not been seen before. At the conclusion of each chapter is found a brief bibliography of the more important and recent literature. Often a concise résumé is given at the conclusion of a subject, which feature is particularly attractive to the student or hurried practitioner.

The subject matter is divided into four parts: The Physiology of Pregnancy, Labor and the Puerperium; the Conduct of Pregnancy, Labor and the Puerperium; the Pathology of Pregnancy, Labor and the Puerperium; and Operative Obstetrics. Each of these grand divisions is subdivided into sections and these in turn into chapters.

The first three (3) sections are given to the physiology of pregnancy, labor and the puerperium. The processes of ovulation, the changes of menstruation, the development of the ovum and placentation are admirably gotten together. True, much of this work is speculation, but the best of this is here in an assimilable form. The changes of the maternal organism due to pregnancy are fully described and illustrated with good drawings and photographs. The epitome of the causes of labor is so graphically described that were the doctor a female midwife, one would accuse him of having borne a child. The mechanism of labor is accurately and elaborately detailed. Some new symbols have been used, and it would seem without advantage. Why not use those symbols most commonly used, e. g., L O A and R O A, etc.?

The hygiene of pregnancy is concise and full of helpful suggestions to patient, nurse and accoucheur, and if followed intelligently, obstetric mistakes would be very materially reduced. Pelvimetry has been given ample space. The author does not advise internal measurements as a routine, but specific directions for taking them are given.

In the diagnosis of pregnancy all methods are employed, including the X-ray and serodiagnosis, the latter being merely mentioned. The summation of the diagnosis of pregnancy is ideal for the busy student.

The conduct of labor is thoroughly reviewed. The contents of the obstetrical satchel is given, as well as full instructions for the proper management of labor in the home. Hospital delivery is preferred in any case, but is insisted upon in abnormal cases. In delivery, when perineal laceration seems evident, episiotomy, preferably mediolateral, is freely practiced. The percentage of perineal tears in the author's hands is high, because he considers that the baby is in danger if the head is held on to the perineum too long. Better get a small tear, or do episiotomy if a bad tear seems inevitable, than kill the baby.

The physiology and care of the infant receive their quota of attention, including asepsis and antiseptics of the eyes, naval and orifices of the body, together with a few words about feeding and nutrition.

The remainder of the volume, which consists of nearly 700 pages, is given over to pathologic obstetrics. The section on the toxemias of pregnancy shows a thorough review of the literature, as well as a large and varied practical experience. The author favors prompt delivery in eclampsia and by that method which is less dangerous to the mother. Induction of premature labor is advised in those cases not yielding to proper treatment. Venesection is done when indicated, preferably after the third stage of labor.

Extrauterine pregnancy, in all its phases, is well discussed. The author favors immediate operation, using ether anesthesia. The instructions given as to the treatment of the various forms of abortion and premature labor are accurately and tersely given. Cervical and vaginal tamponade is advised in the inevit-

able and complete abortions, always followed by curettage. Septic abortions are never curetted and only packed when hemorrhage is alarming. After septic symptoms have subsided the contents of the uterus may be removed with the finger or placental forceps.

The prognosis in placenta prævia is improving by the grace of asepsis and better obstetric practice. Version, with slow spontaneous delivery, or meteuryxis is advised. Accouchement forcé is condemned as being almost criminal, Cæsarian section is gaining reluctant recognition, and in certain selected cases, with a qualified surgeon, is the method of choice. Vaginal Cæsarian section is not to be recommended.

In pulmonary tuberculosis, if the patient is seen early and the process is florid, abortion is indicated. If late, we may wait. In any case, if the process seems very chronic, wait and watch. Syphilis is to be treated in the usual manner regardless of pregnancy. Instituted early abortion may be prevented. Salvarsan and inunctions give the best results. In chronic heart affections "watchful expectancy" is the rule. If chronic decompensation with myo-degeneration occurs, interference is demanded. During labor "be on the job," for it is here and just after delivery that collapse and sudden death may occur.

Excellent diagrams do much to elucidate the description of the mechanism and management of abnormal presentations. Embryotomy is advised in neglected transverse cases when version is impossible or too hazardous as opposed to Cæsarian section, because the former operation gives the mother a better chance.

The very important subject of deformed pelvis, including etiology, mode of development, clinical aspects, and their influence upon the mechanism of labor, is thoroughly discussed and illustrated by photographs, drawings and X-ray pictures, many of which are original.

Slow delivery is the secret of success in preventing all kinds of tears, while episiotomy lessens the dangers of impending serious lacerations. Immediate repair of lacerations of the cervix and perineum is advised when possible. When immediate primary repair is not possible, secondary repair six to eight months later rather than five to ten days postpartum, is advised, because at this time a true surgical operation may be done. In the immediate primary repairs no sutures should be placed until the placenta has been delivered.

The discussion on postpartum hemorrhage gives some very definite statements regarding the history and conduct of such cases—"Forearmed is forewarned." Determine first of all the source of the hemorrhage. Special emphasis is placed upon the uterovaginal pack in obstinate cases. Ergot and its derivatives is given preference over pituitrin, the latter being merely mentioned. Alarming hemorrhage from deep lacerations of the cervix may be controlled by the uterovaginal pack or sutures or both. Saline is given subcutaneously during active hemorrhage. Transfusion is highly recommended in the desperate cases.

In the chapter on accidents to the child attention is called to the various methods of resuscitation of the anaerosed infant, special mention being given to the use of the tracheal catheter and maintenance of body temperature. The hot and cold plunge is condemned as dangerous and unnecessary. Schultze's method is reserved for the very desperate cases and even then is contraindicated in premature infants, suspected cerebral hemorrhage or fracture of any of the bones. No mention is made of the pulmotor nor Holden's method of resuscitation.

The discussion of the pathology of the puerperium is given over to a very comprehensive and exhaustive consideration of puerperal infection and diseases of the breasts. All known methods of treatment are given. General supportive treatment, saline by the drop method in the rectum and postural drainage is favored by the author. The clinical results of serums and vaccines are disappointing. The surgical treatment resolves itself into two procedures, viz., hysterectomy and ligation of the pelvic veins, both of which are still on pro-

hibition, because of the absolute inability to place the indication for interference by these methods.

In the section on operative obstetrics directions are given regarding the conduct of operative cases, both in the hospital and at the home. A careful complete general examination should always be made preceding an operation. The incisions for vaginal hysterectomy, symphysiotomy, Döderlein's hebosteotomy, version and breech extraction are fully considered and intelligently illustrated. Pubiotomy is not recommended in primiparæ. Meteuryxis is highly recommended when suitable indications are present. The indications and conditions for the use of forceps, the technique of their application and mode of traction are well given. The axis-traction forceps are not recommended, the author preferring the simple Simpson forceps to all other kinds. In occipito-posterior positions the author does not recommend the Scanzoni-Fritsch method of rotation, but prefers traction with possible spontaneous rotation. If rotation fails to take place, delivery as acciput posterior, with episiotomy, gives better results than forcible anterior rotation.

A consideration of the Cæsarian operation, a chapter detailing the mutilating operations on the child, a concise consideration of the induction of premature labor and a brief appendix complete the volume.

HARVEY B. MATTHEWS.

INTERNATIONAL CLINICS. Especially prepared original articles on Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, with the collaboration of J. A. WITHERSPOON, M.D., A. MCPHEDRAN, M.D., F. BILLINGS, M.D., C. H. MAYO, M.D., T. H. ROTCH, M.D., J. G. CLARK, M.D., J. J. WALSH, M.D., etc. Volume II. Twenty-third series, 1913. Philadelphia and London: J. B. Lippincott Company.

This quarterly issue of the familiar International Clinics is made up of twenty-three articles—eight on diagnosis and treatment, five on medicine, two on neurology, four on surgery, one on obstetrics, one on legal medicine, and one electrotherapeutics. The twenty-five contributors represent a distinguished array of talent, and the articles are of an unusually high order, even for this publication. There are a large number of plates, several of which are colored, charts, diagrams and figures, adequately illustrating the text. It would be impossible within the space at our disposal to discuss all the papers in detail, and it would be invidious to select anything for special discussion out of such a mass of uniformly excellent material. The most recent advances receive exhaustive treatment, and the practitioner will find in the perusal of these topics the essentials of a post-graduate course in modern medicine.

A. C. J.

ELECTRICITY IN DISEASES OF THE EYE, EAR, NOSE AND THROAT, with illustrations. By W. FRANKLIN COLEMAN, M.D., M.R.C.S., Eng.; Ex-President and Professor Ophthalmology Post-Graduate Medical School, Chicago; Ex-President Ophthalmological Society, Chicago; Professor of Ophthalmology Illinois School of Electro-Therapeutics, Chicago, etc. The Courier-Herald Press. 1912.

The first part of the book explains the elementary principles of electricity, describes and illustrates the necessary apparatus and by diagrams and outlines shows the arrangement of the equipment in the author's treatment rooms. Part second begins with a consideration of electric currents and their effects upon the eye. Mention is made of Dr. Finley R. Cook's so called *intermittent* X-rays. These rays have been used in the treatment of atrophy of the optic nerve, detachment of the retina, chronic glaucoma, cataract and other degenerative changes of the eye. It is stated that the negative needle was successfully used in cases of xanthiasma. Xanthiasma was probably intended. The author treated thirteen cases of trachoma and had only one failure. A whole chapter is devoted to the electrical treatment of cataract. The statement is made that, in

most instances of incipient cataract, the progress of the disease may be checked and often a complete cure effected. Electricity seems to score its greatest triumphs in the treatment of atrophy of the optic nerve. As is well known, these patients usually go on to complete blindness. But with the use of the sinusoidal current, the author reports improved vision in sixty-six per cent. of his cases.

Part fourth takes up the electrical treatment of diseases of the ear. A number of otologists report good results from the use of the 500 c.p. lamp, in cases of acute catarrhal otitis media, chronic purulent otitis media and mastoiditis. The remainder of the book gives a resumé of the uses of electricity in diseases of the nose, the accessory sinuses and the throat. The employment of the galvano-cautery in nasal hypertrophies is strongly condemned. In conclusion it may be said that Professor Coleman has written a book which ought to convince even the most sceptical specialist of the value of electricity as a therapeutic agent.

J. W. I.

MARRIAGE AND GENETICS. Laws of Human Breeding and Applied Eugenics. By CHARLES A. L. REED, M.D., F.C.S., pp. 182. (5¼x7¼.) The Galton Press, Publishers, Cincinnati, Ohio. Price, including postage, \$1.00. Subscription only.

Dr. Reed's book represents an earnest attempt to "codify" what he calls the ten fundamental laws of race perpetuation, "the Decalogue of Human Breeding," and to show how eugenics may be applied. The author assures us in the preface that it was written with an "exalted purpose," and on page 23 this purpose is given as the rearing of well-bred families. It seems to us that the chief trouble with eugenics is the determination of a desirable type, and then types rapidly change. We would do much better to insure a wholesome environment for our children in general, which few of them enjoy under the present abominable economic dispensation, giving attention in the way of segregation and sterilization only to the grossly defective. What the eugenists set up as desirable types, rather by modest implication than directly, strike many of us as merely smug, unctuously respectable and commonplace paragons. If the eugenists had their way and succeeded in peopling the world with a race of disgustingly normal beings, standardized to the Philistian scale which the intellectual plebians who are so warmly drawn toward the eugenic camp seem determined to devise, life would be drab and jejune indeed. Happily, such a consummation can never be, for which the gods be thanked. Anything approaching real control of the race after the plan of these fanatical breeders is a fantasy. It is usually impossible to determine hereditary factors in individual parents, even with many antecedent facts in hand, and Reed himself admits that hybridization—happily "scrub breeding," has gone on in the human family so long that pure strains with definite character units are practically unknown. The determination of inherited and often unrevealed attributes of a prospective husband or wife will in the main remain subject matter for old wives' tales. "The diverse streams of contaminated germplasm are to-day flowing on through the generations." Who are the fit? Hold up your hands! What is fitness? If it is the faculty of conforming to the schedules of morality and mentality and physique laid down by eugenic snobs we confess an entire absence of enthusiasm. What is the use, anyway, of planning this eugenic "aristocracy" within a shamefully exploited democracy, so-called? Why not first abate our underlying economic evils and give everybody a fair chance merely to live endurable lives, from which would flow all the eugenic advantages needed by most men, who might then find themselves in a position to give some attention to what is now, necessarily, mere doctrinarian flubdub.

Behold! Palmistry and astrology and phrenology and alchemy have been supplanted by eugenics. And there is a new type of egotist abroad, thanking God that he is like other men and persuading his fellows

to model themselves after his image, though when we study him closely we marvel at his naive presumption.

Only those who have attended a conclave of unterrified eugenists, rushing in with proposals of ways and means at which angels would stand aghast, despair of the race.

Natural selection under decent economic conditions is the sanest hope of the race, as Alfred Russel Wallace has clearly shown—and, next to this, the abatement of the fanatical eugenist.

ARTHUR C. JACOBSON.

BLOOD PRESSURE IN GENERAL PRACTICE. By PERCIVAL NICHOLSON, M.D. With seven illustrations. Philadelphia and London: J. B. Lippincott Company. Price, \$1.50.

This book is a simple yet reasonably comprehensive treatise on blood pressure in the preparation of which the literature of the subject has been judiciously sifted. The technic of blood-pressure examination and the interpretation of blood pressure findings are dealt with in a manner which must prove satisfactory to the general medical reader. The literary style of the author is usually clear and readable. The book is written, as the preface states, for the general practitioner, and that ever hopeful though often disappointed support of the medical book trade will this time get what he is promised and what he wants.

E. E. C.

A TEXT-BOOK OF BIOLOGY. For Students in Medical, Technical and General Courses. By WILLIAM MARTIN SMALLWOOD, Ph.D. (Harvard), Prof. Comparative Anatomy in Liberal Arts College of Syracuse University, and in charge of Forest Zoology, New York State College of Forestry. Octavo, 285 pages; illustrated with 243 engravings and 13 plates, in colors and monochrome. Lea & Febiger, Publishers. Philadelphia and New York, 1913. Cloth, \$2.75, net.

This text-book was prepared for students in medical, technical and general courses. It is assumed that the student is already in possession of certain facts which he has gained from his own accurate observation in the laboratory. A wide range of topics is covered in a masterly way. The chapters on biological factors in disease and on heredity are especially good. The work is to be highly commended as an able and broad exposition of biologic science in which are included the essentials of all those recent striking advances that have changed so greatly the trend of modern medical thought and practice. The author has a gift for omitting unessential matter and language comparable to that which, as Robert Louis Stevenson said, would, if it could be applied to a daily newspaper, make an epic of it.

A. C. J.

PRACTICAL ANATOMY. An Exposition of the Facts of Gross Anatomy from the Topographical Standpoint, and a Guide to the Dissection of the Human Body, by JOHN C. HEISLER, M.D., Professor of Anatomy in the Medico Chirurgical College of Philadelphia. With 366 illustrations, of which 225 are in color. J. B. Lippincott Company, Philadelphia and New York.

This work presents the subject of anatomy from the relational point of view, the details of each region being given in the order of dissection. Furthermore, specific directions are given the student as to the technique of dissection and the order of procedure in exposing and identifying the various structures of each region. The interest of the student is stimulated by showing the relation of the structure to the practical facts of medicine and surgery.

The illustrations are models of accuracy, made for the most part from the author's dissections and under his direct supervision. Two hundred and twenty-five of the illustrations are done in color and are exceptionally fine.

We unhesitatingly commend this book to the student as an excellent guide in the prosecution of his study of the cadaver.

WILLIAM FRANCIS CAMPBELL.

MUELLER'S SERODIAGNOSTIC METHODS. Authorized Translation from the 3d German Edition. By ROSS C. WHITMAN, B.A., M.D. Philadelphia and London. J. B. Lippincott Co., 1913. 146 pp. 12 mo.

Theoretical considerations do not figure in Miller's "Serodiagnostic Methods." Its purpose is wholly practical. The more important methods of serum diagnosis are exactly described and in each case a complete and detailed list of the reagents and apparatus required is given. The original sources of information, scattered throughout the literature of German medicine, are acknowledged in footnotes. The reader is warned that certain methods have been included whose permanent worth has not been demonstrated. The Noguchi modification of the Wassermann reaction is not described. The book is to be highly commended as a trustworthy and clear presentation of complicated laboratory methods of diagnosis.

A. C. J.

DISEASES OF THE EAR. By PHILIP D. KERRISON, M.D., Professor Otolaryngology, N. Y. Polyclinic Medical School; Junior Aural Surgeon, Manhattan Eye, Ear and Throat Hospital; Aural Surgeon, Willard Parker and Polyclinic Hospitals; Member American Laryngological, Rhinological, Otological and American Otological Societies, the New York Otological Society and the New York Academy of Medicine. 331 illustrations in text and two full pages in color. Philadelphia and London. J. B. Lippincott Company. Price, \$5.00.

Kerrison in his "Preface" truly claims that "probably in no branch of medicine have more notable advances been achieved during the past decade than in otology," and cites in proof thereof "the wholly new field of work which has been opened to us by the successful investigation of the static labyrinth," "the new light upon syphilitic lesions of the labyrinth and auditory nerve," "the investigations still in process as to the influence of autogenous vaccines and leucocyte extracts upon certain phases of aural disease," and the fact that "in aural surgery our activities can no longer be confined to the narrow limits of the tympanum and mastoid process, but must include the more hazardous field of intracranial surgery, and the yet more delicate and difficult work upon the auditory labyrinth itself."

Of course, much in the book must, and does, follow closely along the lines of other similar text-books on otology. There is, however, a marked difference from most previous books on the subject, viz., the much greater space than usual allotted to labyrinthine physiology, suppurative disease of the labyrinth, and the symptomatology and treatment of the suppurative lesions of the brain and meninges; and it seems to us that in this full consideration of these topics lies the great value of the book to specialists, while to the students of otology and general practitioners, especially to those living at a distance from the larger medical centers, will be found of especial value the plan, in the section devoted to operative surgery, or rather profusely illustrating the successive steps of the various operations described. The illustrations are for the most part original, and are certainly of more than average merit.

Taken all in all then, we find much in the book to commend, but little that incites us to criticism, and take pleasure in congratulating the author for having done so well in a field trodden so many times before.

J. E. S.

GOUT, ITS ETIOLOGY, PATHOLOGY AND TREATMENT. By JAMES LINDSAY, M.D. (Edin.), M.R.C.P. (Lond.), Hon. Physician; formerly honorary pathologist and resident medical officer, Royal Mineral Water Hospital, Bath. London: Henry Frowde, Hodder & Stoughton, Oxford University Press, 35 West 32nd Street, N. Y. City. Warwick Square, E. C., 1913.

This little book covers, in easy and pleasing style, about all the known facts in respect to gout, and also offers the results of certain observations of the author

in a study of six hundred cases of the disease. The text is suitably illustrated by photographs and skiagraphs. At the end is a chapter on mineral water and spa treatment, which the author is peculiarly qualified to discuss by reason of his long experience at the Royal Mineral Water Hospital, at Bath, England.

A. C. J.

TUBERCULIN TREATMENT. By CLIVE RIVIERE, M.D., London, F.R.C.P., Physician, East London Hospital for Children, Shadwell; Physician Out-patients, City of London Hospital for Diseases of the Chest. Egbert Morland, M.B., and B. Sc., London, M.D. Berne of Arosa, Switzerland; Visiting Physician English Sanatorium (Villa Gentiana). Second edition. London: Henry Frowde, Hodder & Stoughton, Oxford University Press, 35 West 32nd Street, N. Y. City. Warwick Square, E. C., 1913.

In view of the constantly increasing interest in tuberculin therapy since Sahli and Denys and Trudeau showed how the dreaded and reviled product of Koch's researches could be safely and effectively used, such a text-book as this one will fill a real need. The peculiar merit of this work is that it gives an account of the whole field of tuberculin treatment in correct perspective, showing that the two prevailing methods of using tuberculin (the small-infrequent-dose school and the large-frequent-dose school) are indeed based on the same essential principles, modified to suit certain definite requirements. This should serve to abate the confusion which exists in the minds of many practitioners and precludes more general employment of a truly specific remedy. The authors favor the taking up of tuberculin therapy on the part of practitioners, and declare that the administration of such a remedy can no more be confined to the specialist than can the treatment of tuberculosis in general, since the necessary precautions are well recognized and the principles governing specific treatment capable of exact statement. The immediate results of tuberculin therapy are such that it is difficult to understand the opposition to its employment. TR and probably BE may be given by the mouth, a fact which, were practitioners better acquainted with it, would doubtless serve to popularize the use of tuberculin. The danger of ill-considered general reactions has been sufficiently impressed upon the general practitioner to qualify him for greater therapeutic usefulness in this field. The authors adopt the cubic millimetre as a unit of dosage. This book is written in a singularly attractive style and covers every phase of tuberculin treatment adequately.

A. C. JACOBSON.

DISEASES OF THE RECTUM AND PELVIC COLON. By MARTIN L. BODKIN, M.D. Illustrated. N. Y., E. B. Treat & Co., 1913. 416 pp. 8vo. Cloth, \$3.50.

It is gratifying to note that another book devoted to the diseases of the rectum has been published. It is indeed to be regretted that this important branch of medicine has not, in the past, received more consideration by the general practitioner. Fortunately for the patient suffering from a rectal disorder, the number of physicians qualified properly to diagnose and treat such diseases is rapidly increasing.

Dr. Bodkin's recent book will do much still further to disseminate knowledge of this very important subject. After a very careful reading the reviewer is convinced that the physician in general practice as well as the specialist will find in Dr. Bodkin's treatise much of the information on this subject that he should know. It is written in a clear and concise style. The illustrations are good, though perhaps somewhat lacking in detail, and are sufficiently numerous fully to tell their story. The most approved operative methods are fully set forth.

Worthy of special attention is the chapter on "Catarrhal Diseases of the Rectum and Colon," which is very well written and covers the subject in a masterly manner.

The author has devoted the last chapter to the "Relation of Gynecology to Rectal Diseases," and has

pointed out the necessity to the gynecologist of a more intimate acquaintance with the symptoms of rectal troubles. The reflexes arising from most rectal disorders are so numerous and far-reaching that it is the duty of every practitioner fully to inform himself upon the subject.

Throughout this book the author has shown himself to be painstaking, conscientious and thorough, and has made it clear that the *cure* of these diseases is practically certain provided the true cause and early recognition of the particular trouble is determined.

EARL H. MAYNE.

DIET AND HYGIENE IN DISEASES OF THE SKIN. By L. DUNCAN BULKLEY, A.M., M.D. Paul B. Hoeber, New York, publisher. Price, \$2.00.

Space will not allow of a comprehensive review of this book, for although it is a small volume, only 194 pages, it is so filled with useful suggestions regarding diet and hygiene, that it deserves a more extended review than can be given here.

This volume demonstrates three things: first, that the author is not only a dermatologist, but is also a thoroughly trained physician; second, that a successful cutaneous specialist must have a broad knowledge of general medicine; and third, that as time goes on, all those who make a specialty of skin diseases will come to the belief that many of the intractable diseases, as for instance psoriasis, are of metabolic origin.

It is the reviewer's opinion that this work will be of more value to the general practitioner than to the dermatologist. Perhaps the latter will not be able to endorse all of the arguments advanced, but even they can read the book and learn.

WAYSIDE EXPERIENCES. A Collection of Plain Tales as Heard Along the Road. By C. ELTON BLANCHARD, M.D. Newark, N. J., Physicians Drug News Co., 1912. 246 pp. 12mo. Cloth.

There is an amateurishness about Dr. Blanchard's book which there is no danger of confusing with the "notorious amateurishness of genius," to borrow a characterization of Arnold Bennett. It is the amateurishness of the uninspired pen stuck impudently into that magic inkpot which puts an enchanted spell on the quill of a Doctor Doyle and a bromidic solution on that of him not Mendelianly endowed for citizenship in the kingdom of the god of letters. Some of the stories are based upon sexual matters and attempt to show impressively the sad results of venereal disease in family life, but banality eclipses impressiveness. Dr. Blanchard employs original and exasperating systems of punctuation, orthography and syntax, or else he is much sinned against by the publisher's minions.

A. C. J.

MEDICAL DIRECTORY.

CHANGES FOR VOLUME XV.

Dr. Earnest Auzal, removed to 127 West 58th Street, New York City.

Dr. William H. Baughman, removed to 645 West End Avenue, New York City.

Dr. Jacob W. Bayliss, removed to 472 Delaware Avenue, Buffalo, N. Y.

Dr. Ellis Bonime, removed to 24 East 48th Street, New York City.

Dr. Eugene A. Chapman, removed to Stafford Springs, Conn.

Dr. Frederick W. Culler, removed to 127 West 82d Street, New York City.

Dr. Alvah H. Doty, removed to 205 West 57th Street, New York City.

Dr. John W. Doyle, removed to 149 East 48th Street, New York City.

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Dr. Siegfried Fischer, removed to 252 West 91st Street, New York City.

Dr. William S. Gardner, removed to 991 East 167th Street, New York City.

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Dr. William J. Hammer, removed to 128 West 59th Street, New York City.

Dr. Charles R. Hancock, removed to 224 West 52d Street, New York City.

Dr. Eugenia G. Hancock, removed to 224 West 52d Street, New York City.

Dr. Harry G. Harris, removed to Glasgow, Mont.

Dr. John A. Heatly, removed to 511 State Street, Schenectady, N. Y.

Dr. T. Leacraft Hein, removed to 6 West 107th Street, New York City.

Dr. Edmund Y. Hill, removed to 320 West 87th Street, New York City.

Dr. Bruno S. Horowicz, removed to Stapleton, S. I.

Dr. Harry Jarmulowsky, removed to 82 East 92d Street, New York City.

Dr. Frank P. Jenks, Brooklyn, added to Qualified Examiners in Lunacy.

Dr. Eldred W. Kennedy, removed to 127 Genesee Street, Rochester, N. Y.

Dr. Regina F. Keyes, removed to 432 Delaware Avenue, Buffalo.

Dr. Francis J. Lennon, removed to 155 Lafayette Avenue, Buffalo, N. Y.

Dr. Isaac Levin, New York City, appointment, Chief, Dept. Cancer Research, Montefiore Home.

Dr. Eli Long, removed to 325 West 88th Street, New York City.

Dr. Russell B. Lynn, removed to 144 East Water Street, Elmira, N. Y.

Dr. Thomas W. Maloney, removed to Gardner, Mass.

Dr. C. Ross Miller, removed to Ogdensburg, N. Y.

Dr. James Moran, removed to 262 West 83d Street, New York City.

Dr. Alexander Nicoll, removed to 51 West 58th Street, New York City.

Dr. Edward S. Peck, removed to The Coronet, 57 West 58th Street, New York City.

Dr. Charles O. Rice, removed to Cape Vincent, N. Y.

Dr. Mary H. Robinson, removed to Brookton, N. Y.

Dr. Eugene W. Rother, removed to 940 Clinton Avenue, S., Rochester, N. Y.

Dr. Max J. Rush, removed to 1133 Broadway, New York City.

Dr. Samuel Schaeffer, removed to 335 West 29th Street, New York City.

Dr. Louis Shalet, removed to 16 East 87th Street, New York City.

Dr. Walter M. Silleck, removed to 19 West 122d Street, New York City.

Dr. Maximilian Stern, removed to 219 West 81st Street, New York City.

Dr. Walter Timme, removed to 133 West 72d Street, New York City.

Dr. Homer Wakefield, removed to 106 Morningside Drive, New York City.

DEATHS.

J. L. ARCHAMBAULT, M.D., Cohoes, died October 17, 1913.

EDWIN C. BALDWIN, M.D., Fort Wadsworth, died October 3, 1913.

JOHN D. BRUNDAGE, M.D., Westhampton Beach, died October 21, 1913.

GEORGE DRURY, M.D., Brooklyn, died October 20, 1913.

ALEXIS MARCY LEON, M.D., New York City, died November 2, 1913.

CHARLES MCBURNEY, M.D., New York City, died November 7, 1913.

HENRY T. PEIRCE, M.D., New York City, died October 1, 1913.

EDWIN C. REAMES, M.D., Canastota, died September 25, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

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EDITORIAL DEPARTMENT

NOMINATORS OR ELIMINATORS?

WITH the approach of the New Year, when nominations for officers in many medical societies will be in order, the following, written in a reminiscent mood, may or may not be instructive to the reader.

It was warm in Minneapolis, very warm. Within the confines of the assembly hall in which the last session of the House of Delegates of the American Medical Association was held, it was hot—so hot that it would require an expletive borrowed from Hades to express its degree.

The august assemblage divested itself of its toga, and in shirt-sleeves sweltered and perspired while transacting the routine business of the day, which in due order called for the nomination and election of a president for the ensuing year—and then; the flood gates of oratory opened and beneath its seething waves it was left gasping. Shades of Burke and Patrick Henry! why hovered you so near? Your subtlety was never in danger, your logic never at fault! The names of five candidates were placed in the field, any one of which could have discharged the duties of the

office with honor to the Association, with justice to its members and with credit to himself. It is pleasing to relate that in advance of the meeting there was no electioneering, no canvassing, no exchange of *quid pro quos*. Vague rumors of the possibility of such and such a name being presented circulated around, lacking evidence of preconcerted approval. If there ever was an impartial body of electors it was this body of delegates waiting in impatient expectancy to hear in graceful periods the declaration of attainments which would influence its selection of a candidate for the highest office within its power of disposal. Outbursts of eloquence were entirely unexpected, but they appeared *satis eloquentiae, sapientiae parum*. Metaphor struggled with hyperbole, simile grappled with alliteration, personification cavorted with allegory. It is far from our desire to exalt the oratorical ability of one speaker over that of another or to refer to their constructive or destructive force, so we have transposed the order of the introductions, words, phrases and sentences used by the speakers in the hope for obvious reasons that their recognition will not be possible. We are extremely susceptible to the beauties in art and easily swayed by our emo-

tions, so be not over critical in your judgment of the instability of our decisions, which like a weathercock in the wind changed with ever varying breath.' Under the persuasive spell of oratory, as a compromise with our emotion, we would have voted for the five candidates had we not been deterred by the fear of detection. Compelled by virtue of necessity to make a selection, it was necessary to weigh the evidence of individual worth of each candidate. The professional standing and executive ability of each were painted in colors of equal brilliancy. We had then but to consider personality in the abstract—the qualifications which were to appeal to the voter. As a pleasing mental exercise those of you who were not present should try and select a candidate from amongst the following: "The grandfather of the candidate fought in the war of the Revolution, his father helped to save the Union in the Civil War, the candidate was noted for his patriotism, filial duty and strong adherence to the tenets of the Methodist faith; his professional attainments require no eulogy—they are equalled by few and surpassed by none." The foregoing remarks, embellished with gestures, voice and enthusiasm were to us quite convincing. We were delighted with the little touch of genealogy, for at one time we were a student of that branch of learning and we believe that had we not cut down our genealogical tree at the epoch when one of our forbears were hanged for sheep-stealing, we would still be interested.

"There is a time for all things, but this is neither the time nor the place for a review of past history. I have made no study of the ancestry of the man whose name I have the honor to present. I am not interested in dead but in living issues. Some of the greatest patriots I ever knew were the most incompetent presidents. As a liberal minded free-thinker, opposed to no religion, I am unable to understand how any religious sect could aid in the knowledge of parliamentary

law or filial duty in its construction. But if religion is to be considered, which I deprecate, my nominee belongs to the same church as the President of the United States, and he seems to be 'making good.'" A delegate sitting near me in an undertone said "Cut it out; cut it out!" However, in a vivid peroration the candidate's acquirements and liberal views were enumerated. I wavered in my choice, feeling that after all, liberality is a most admirable quality.

Another of the speakers, a gentleman with Napoleonic features, arose and for a moment stood impassive, grand, gloomy and peculiar—certainly peculiar, because he electrified the assemblage with an amusing sportive vocabulary—"Gentlemen, so far you hold a bob-tail flush, but I hold the ace. The man whose name I am about to present requires no introduction. Not to know him is a misfortune—his fame is world-wide. You would honor yourself in electing him your presiding officer. He is—" At this point the orator lost the thread of his discourse, consulted a slip of paper which he was evidently unable to decipher, for, looking up, he continued—"I can say no more in his praise. It would be superfluous." The brevity of his remarks, under existing weather conditions, pleased me. Most men admire a true sport. We occasionally play cards, and we felt that a little game of seven-up with the President could be enjoyed without loss of reputation. The Western and Southern members appeared pleased with his remarks, and no doubt were influenced to some extent in favor of his candidate.

The thermometer and the excitement over the nominations continued to increase and reached their maximum at the close of the next speaker's remarks. He grew enthusiastic over the native State of his candidate—"Elect him and the gratitude of our State will flow to you as did the lava of Vesuvius to Herculaneum. Our people will welcome you with outstretched arms to the

hospitality of one of the most hospitable of States. They will show you fields upon fields of waving grass interspersed with fragrant flowers; they will show you God's noblest gift to man—the horse—sinewy, sleek, supple—a thoroughbred racer. Though you may be as numerous as the hosts of Alexander and as dry as the sands of Sahara they will allay your thirst with the purest of whiskey and let you bathe in its limpid amber. The princess of the land will call you brother and say "That which you see is yours." The princesses, more beautiful than the Houris of Mohammed's heaven, will wait upon you as handmaids. Had the question then been put to a vote oratory would have won. The applause was deafening—the thermometer flew in fragments. Then up rose an austere visaged man—"I am no orator. Oratory is unnecessary to enhance the value of plain words. I am a plain man from a plain state. Instead of red, white or blue grass our State can show you miles upon miles of fields of waving golden grain. It will show you not the pampered race horse fit alone for show, but one endowed with strength to labor in the fields and turn the wheels of commerce. It will show you beautiful lakes of pure translucent water which you can drink and in which you can bathe, to arise, refreshed for the serious work of the day. You will not be welcomed by princes but by men. You will not be smiled on by princesses (I marvel at the temerity of the last speaker suggesting temptation to the venerable grey hairs I see before me) but by women of a State which has conferred upon them the glorious privilege of suffrage. It is for the son of such a State I bespeak your support, a man possessing every attribute accorded to the other nominees, but not hampered with professorships, editorships or chairmanships to interfere with the duties of the presidency of this great organization. He will not be compelled to call upon the Secretary for a solution of parliamentary rules, but rule over your Council with grace and

dignity. He is not aware that his name is to be presented. As a pupil from whose lips I learned wisdom and from whose high ideals reverence for my profession, I feel honored in placing his name before you. Again we hesitated in our choice. The sobriety of thought, excusably exaggerated, partly effaced the effects of the platitudes of the preceding speaker. While cogitating we were aroused from our reverie by the next speaker.—"I have the honor of nominating for the office of President of the American Medical Association one who has been honored for the originality of his achievement, whose contributions to medical literature have stamped him as a forceful writer, whose modesty and courtly manner distinguish him as a cultured gentleman worthy of respect and admiration.

A motion that the nominations be closed was carried. We trust that you have not too violently stubbed your toes against the Moral.

A WORD ON ECONOMICS.

IT is generally admitted that the science of economics, in its relation to the practice of medicine is now a question demanding consideration and deep study by physicians. It is hardly fair for members of the profession who have achieved success and its concomitant wealth, to sit idly by and unconcernedly watch their brothers do all the fighting for a rectification of the abuses. On the other hand, it is impolitic on the part of the propagandists, in assailing but one of the many causative influences—hospitals, to shout from the house-tops—Hospital Trusts! Surgeons' Trusts! In any reform the aid of dominant men is vital.

The causes of this economic poverty are multiple and have been discussed at Dan and reported at Beersheba. We have heard the murmurings of discontent grow into rebellion—a rebellion without order of battle. Defensive and offensive measures still remain in an inchoate state. The enemy's position unknown. Why not uncover it. Then seek a vulnerable point of attack and concentrate upon it all available strength.

The JOURNAL is desirous of lending its aid to any well conceived attack. It is a member of no corps but the ally of all.

Original Articles

THE TREATMENT OF LARGE VENTRAL HERNIA BY INVERSION OF THE HERNIAL SAC; WITH OR WITHOUT OPENING INTO THE PERITONEAL CAVITY.*

By IRVING S. HAYNES, Ph.B., M.D.,
NEW YORK CITY.

THIS paper is not a review of the subject of ventral hernia, post-operative or umbilical. It is merely a report of my own experience in the treatment of several very large hernia of this kind. I do not suggest or urge that the method here described should be applied to all forms of the above types of abdominal ruptures, however, it has proved so decidedly useful to me in a few exceptional cases that I deem it my duty to record my experience.

The practical value of the "inversion," as I term this method was forced upon me during the treatment of the following case:

CASE I.—Mrs. J. K. Patient referred to me by Dr. J. J. Tierney.

A very large stout woman, weighing considerably over 200 pounds; aged 45 years.

On March 30, 1911, I operated upon her for a large fibroid of the uterus. The incision was about six inches in length at the left of the median line. The rectus muscle was retracted to the outside. The peritoneum was closed by plain catgut and the fascia with No. 2 chromic gut, the skin with finer plain gut. The superficial parts of the wound healed by primary union but the deeper structures were torn apart on the fifth day by a terrific attack of vomiting, brought on by the patient having, on her own responsibility, drunk four pint bottles of ginger ale. She was considerably shocked by the experience and nothing further was attempted at this time.

In September she reported to me with a very large hernia, at the site of the previous operation. The gap in the fascia measured 8 inches in vertical and 4 inches in transverse dimensions. The protrusion was 4 or 5 inches beyond the level of the abdominal wall. On September 15, 1911, at the Red Cross Hospital an operation was undertaken for the cure of this hernia. The patient took the anesthetic very poorly, maintaining that very disagreeable condition of prolonged and straining expiratory efforts which forced the abdominal viscera into the hernial sac under tremendous pressure.

What form of operation to attempt under this unfavorable condition was the problem.

I recalled a similar case that I had had several years previously. A very large and powerful

man who had an immense hernia, in whom this same type of respirations was present. In this case everything was carefully prepared before opening the hernial sac for the quick overlaying of flaps. As soon as the sac was opened the patient's expiratory efforts were redoubled. The House Surgeon and myself could not with our combined efforts prevent the extrusion of the intestines. When enough anesthetic was given to somewhat control the forced expiratory efforts the man became cyanotic and nearly died. With the patient half dead from the anesthetic and shock, we finally succeeded in getting the intestines within the abdomen and finished the operation. That memory is a nightmare to me.

The patient is living at present, but with a return of the hernia.

With that experience in mind, with the same type of expiratory efforts and great increase of intra-abdominal tension present in this case, I determined to attempt the cure of the hernia without opening into the peritoneal cavity by the following method:

The skin was separated from the sac with considerable difficulty, as skin, very little fascia and peritoneum were all that covered the hernial protrusion.

The skin and fat were then dissected back from the margin of the hernial orifice for two inches, leaving the external fascia perfectly clean. There were several small holes through the sac which showed that the great omentum was everywhere adherent to its inner surface.

The sac when fully exposed was eight or nine inches in vertical height and five or six inches in width, with a forward projection of five inches. With a continuous Lembert suture the slack of the sac was inverted into the abdominal cavity. At the beginning and end the suture lines were about an inch, while in the middle of the hernia they were two inches apart. The effect of this suture was to roll the loose parts of the sac into the abdominal cavity and bring the hernial protrusion down to the level of the abdominal wall.

This first suture was No. 2 plain gut, doubled.

The second row of interrupted, mattress sutures of heavy kangaroo tendon were placed just outside the margin of the hernial orifice and about an inch of fascia was picked up in the bite of each suture. After all were in place they were tied, beginning at the top, then bottom, and the center was closed last. The margins of the hernial orifice were thus brought close together. The strain was terrific. However, it did not seem to distress the patient. One inch outside of the second row of sutures a third line of sutures of this same material were placed in a similar manner, so as to "break joints" with the other row. When these last were tied the second row of su-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

tures, with an additional margin of abdominal wall an inch wide, were inverted into the abdomen. To take the strain off the kangaroo tendons and to more firmly coaptate the parts, six retention sutures, consisting of double strands of No. 30 gauge, bronze wire were introduced in the familiar figure-of-eight manner, and tied at a distance of four inches from the incision, over rolls of iodoform gauze. A rubber tissue drain was placed in the superficial parts and the skin closed by No. 1 plain gut, double. The entire operation took 100 minutes.

There was some vomiting but this was controlled by gastric lavage. The bowels moved on the second day without special effort. Convalescence was uneventful. The drain was removed after the fifth day when the free secretion of serum had ceased. Primary union resulted.

Most of the wire sutures were removed during the third week, but two broke off beneath the skin. An X-ray on April 15, 1913, shows that these have been entirely eroded and absorbed—an interesting fact.

At the end of the third week the patient was allowed out of bed.

June 26, 1912.—The woman is doing her own housework, washing, scrubbing, etc.; is perfectly well and has an absolutely solid and symmetrical abdomen. Her bowels act naturally every day. The result is a complete cure.

April 10, 1913.—Weight, 232½; girth of abdomen midway between the umbilicus and pubes, 47 inches. Scar is 9 inches long. Absolutely perfect result.

This type of hernia is usually the result of a weak scar from suppurative conditions in the abdomen demanding drainage, with no or only partial closure of the wound—or it may result from a too-rapid absorption of the deep sutures with gradual or sudden giving away of the deeper parts, the skin remaining united; or it may follow failure to secure proper coaptation of the abdominal wall at the time of the operation.

These herniæ are marked by the very large gap through which the viscera are protruded. In three of my cases here detailed this gap measured 8 x 4; 6 x 2, and 7 x 4 inches.

In four others operated by this method, the opening was smaller. The method was used in these cases merely to see how it would act. The results are cures in all, thus far.

The sac is composed of attenuated skin with a thin layer of fascia and the peritoneum, to which the omentum, intestines, and various abdominal organs or growths may be adherent.

In size these herniæ vary from a mass as large as a large grape fruit to a tumor that in size and shape resembles the crown of a large Derby hat.

This type of hernia is a very difficult one

THE TECHNIC OF THE INVERSION METHOD OF TREATING ABDOMINAL HERNIA.

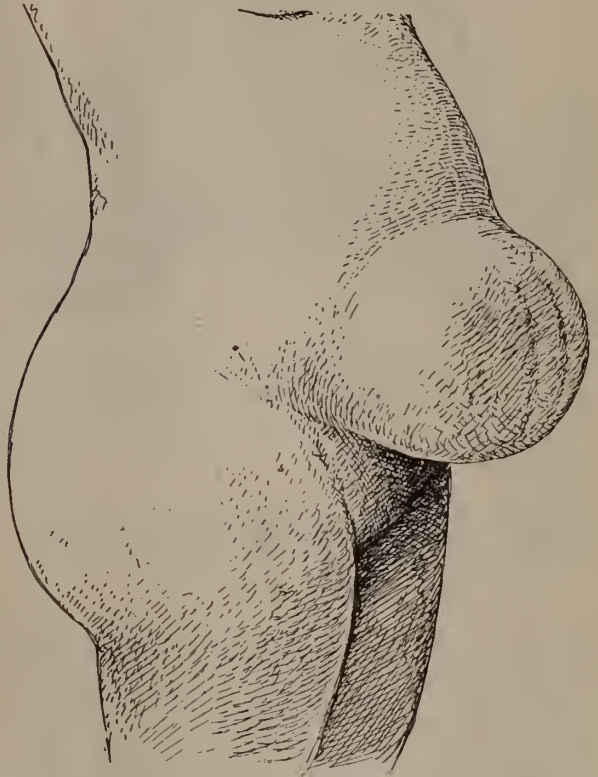


FIG. 1.—Diagram to show the type of hernia under consideration.

to cure by the usual methods. Extensive flap-splitting, transplanation of the fascia or muscle and silver-wire filigree have been the usual methods employed.

Details of the "Inversion" Method.—Dissect the skin from the sac and the skin and fat from the fascia for a distance or from one to two inches beyond the margin of the hernial orifice.

Whether the skin shall be entirely removed from the sac depends upon whether the sac is to be inverted entire or not. The preceding case is the only one in which it was necessary, or seemed necessary, to accomplish the technic without opening the sac. In all the other cases the sac was opened to deal with some attending complication. In these instances more or less skin was removed by the usual elliptical incisions with the redundant portions of the sac itself.

After the complications have been dealt with and the sac (peritoneum and thin fascia) has been sutured with No. 2-plain gut, doubled, the inversion of the hernia and coaptation of the margin is carried out.

For this purpose two rows of sutures of heavy kangaroo tendon are necessary. Both rows are placed mattress-wise with deep and wide bites in the external fascia, the two rows "break joints" with each other.

Retention sutures of either bronze wire,

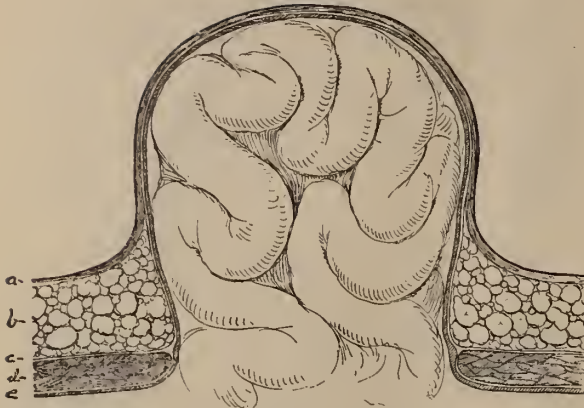


FIG. 2.—A sectional view of such a hernia. The contents may be disregarded, the construction of the sac is the important feature.

The different structures are lettered the same throughout:

- a. Skin.
- b. Subcutaneous tissue.
- c. External fascia covering the abdominal muscles.
- d. Muscular layer.
- e. Internal muscular fascia and peritoneum.

silk worm, or chromic gut are used to take the strain off the mattress sutures. The wire is preferred in the larger hernia and the gut may be used in the smaller ones. These sutures are placed in the figure-of-eight manner and brought out through the skin at a distance of from two to four inches from the skin incision where they are tied firmly over rolls of gauze or a large rubber tubing (quill suture).

A drain of rubber tissues should be inserted before the skin is closed with silk worm or plain gut.

This drain is needed because there is a considerable oozing of serum, bloody at first and clear later from the wound.

The drain will not be needed more than two days in the small hernia and from five to seven in the larger.

The utmost care must be used before, during and after the operation to preserve complete asepsis. Suppuration would probably ruin the result.

My experience has demonstrated the old truth that while the integrity of the abdominal parietes is dependant upon the approximation and normal action of its muscles, the preservation of such integrity is much more dependent upon the correct apposition and relations of its fascial planes.

This has been pointed out by so many other writers that it is unnecessary to argue the point.

In the cases of these immense herniæ, I made no attempt to secure muscular flaps or apposition. Their close contiguity has been, of course, secured by the apposition of their external fascial covering. Relapses may occur; there have been none thus far.

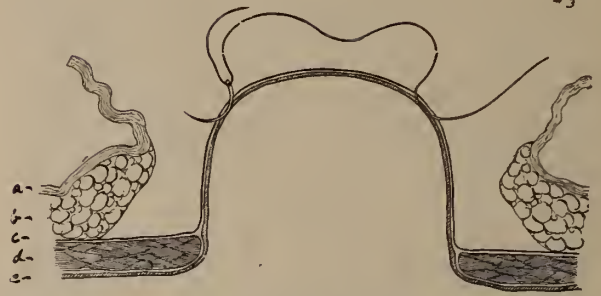


FIG. 3.—The illustrations from No. 3 to 8, inclusive, depict the steps in the operative treatment when the sac is not opened.

FIG. 3.—Shows the skin dissected from the thin sac and the skin and subcutaneous tissue dissected back from the hernial orifice so as to leave a wide margin of the adjacent fascia cleanly exposed.

The first suture, to take up the slack or fullness in the sac is shown.

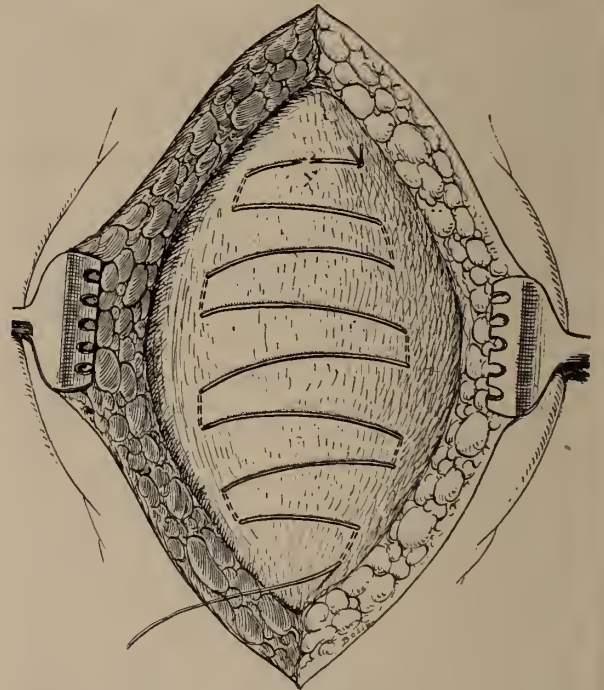


FIG. 4.—A view of the outside of the hernial sac with the first inverting suture in position.

The percentage of relapses in hernia treated by the flap methods is 10 per cent. or more.

In these enormous herniæ, with multilocular sacs, with adherent viscera and similar complications the saving of time secured by not having to dissect out the necessary flaps is very considerable while the method of suturing is so simple and easy that it adds to the celerity of the operation.

The objection that will at once suggest itself is that in case the hernial sac is not opened there is great danger of perforating the intestines in introducing the sutures. This I grant and urge great care in placing the first and second rows. Furthermore, this danger may be entirely avoided if through small in-

cisions in the sac a finger is inserted beneath it and under its guidance the suturing is carried out.

Another danger that I feared was the tremendous increase in the intra-abdominal pressure by rolling into the abdomen a mass of sac and besides further narrowing the space by inverting the walls themselves. However, in actual practice, there has been no disturbance from this cause whatsoever.

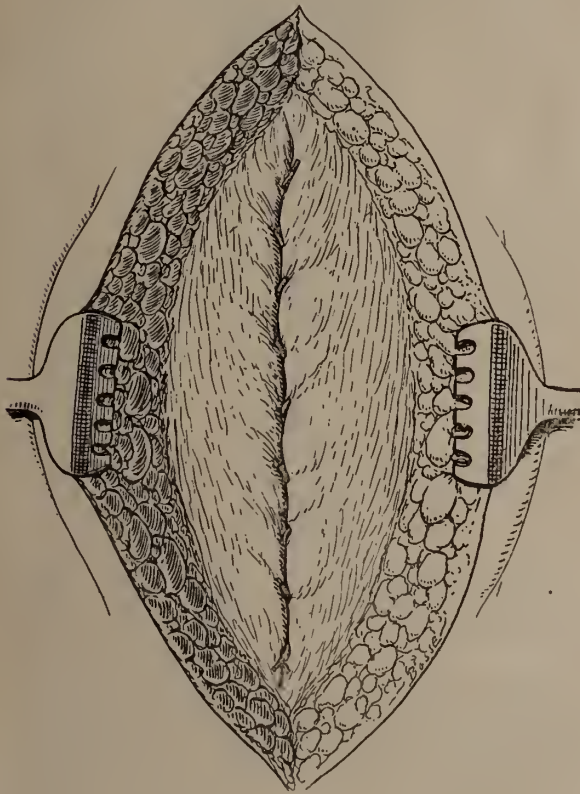


FIG. 5.—To represent the appearance after the first suture has been drawn tight.

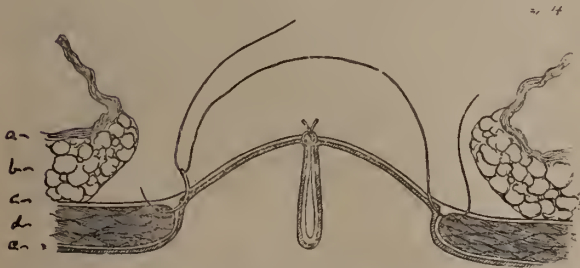


FIG. 6.—A cross section to show the infolding produced by the first suture and the placement of suture No. 2.

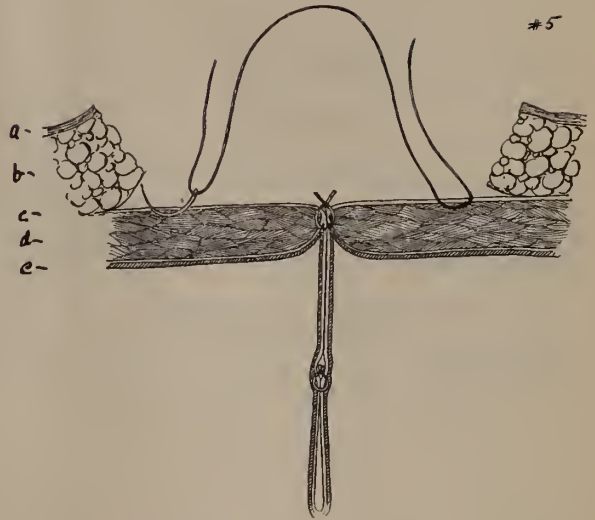


FIG. 7.—Suture No. 2 has been tied and the muscle edges brought together. Suture No. 3 is shown in place.

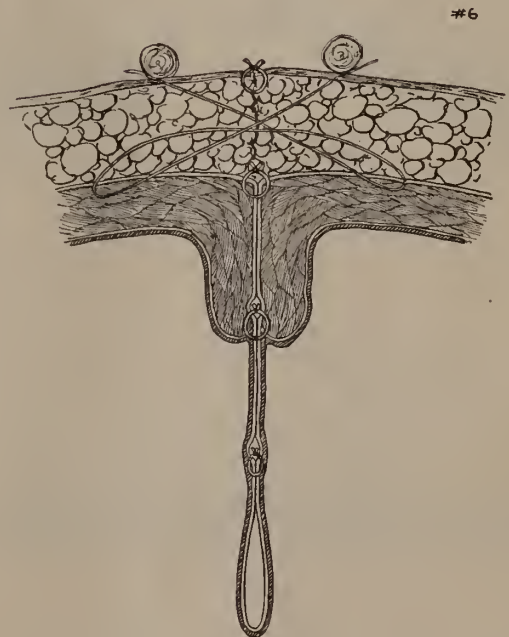


FIG. 8.—Suture No. 3 has been tied and the surfaces of the fascia over a wide area have been brought in firm contact. This last suture rolls inward, the edges of the muscles forming the hernial orifice. A figure-of-eight retention suture is shown in position, tied over rolls of gauze, and the skin edges coaptated by a last stitch.

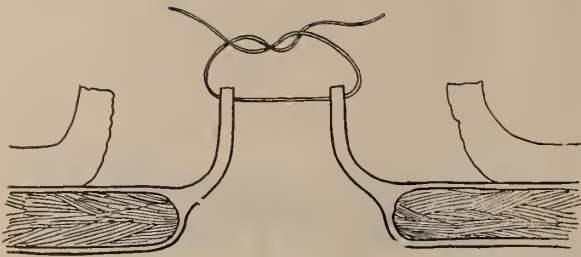


FIG. 9.—The figures, 9 to 12, inclusive, show the adaptation of the method to the case where the sac has been opened.

FIG. 9.—The introduction of the first suture.

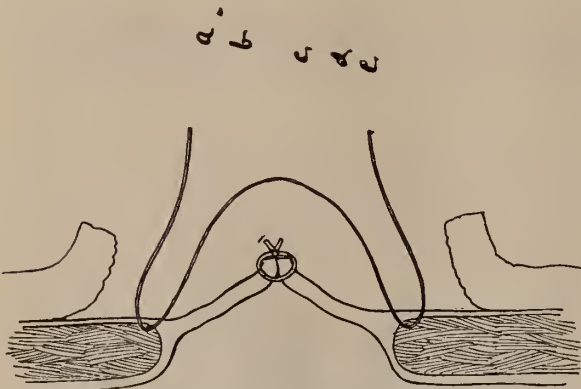


FIG. 10.—The closure of the hernial sac and the introduction of suture No. 2.

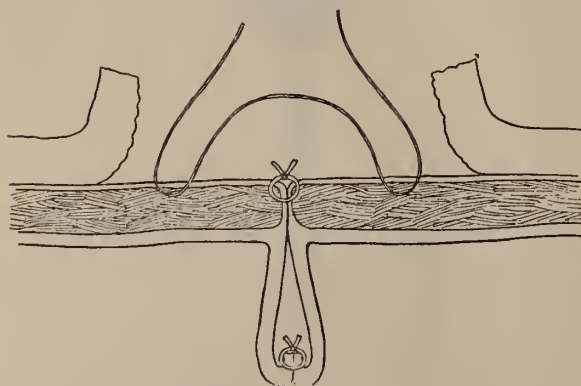


FIG. 11.—Suture No. 2 has been tied with the result of coaptating the edges of the hernial orifice and suture No. 3 is inserted.

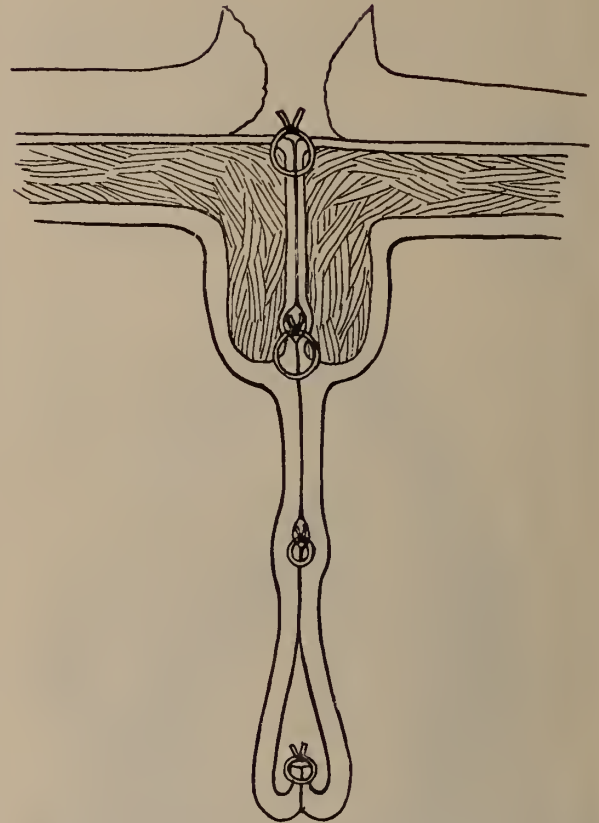


FIG. 12.—Completion of the closure of the hernial opening. The skin (and fat) is to be sutured as depicted in Fig. 8.

Obstruction and possible strangulation of the intestines might seem to be another real danger. If it is one it has not appeared in my experience. In the cases with the largest herniae the bowels have acted spontaneously on the second or third day. I believe such prompt action is aided by the greater tension within the abdomen.

Neither has the fascia become necrotic or sloughed in any of my cases. Primary union has resulted in all.

Cure of the hernia has thus far been obtained in all cases. I realize, of course, that the last ones are too recent for statistical purposes.

I know the advantages of the classical methods in the usual types of abdominal herniae and I only advocate this "inversion" method for these very large ruptures that seem to be almost beyond any of the accepted methods of treatment.

The following case records are appended:

CASE II.—Mrs. T. B., aged 40. Large framed woman; weight 220. Patient referred by Dr. J. J. Tierney. Patient was admitted to the Red Cross Hospital, October 24, 1911 and discharged November 26, 1911.

Seven years ago the patient was operated upon for gall-stones, seven were removed.

For the past six months she has complained of indigestion, gas eructations, vomiting and pain. The pain is felt in the upper part of the abdomen. She has been unable to take solid foods for the past few months, if she does she vomits them up soon afterwards. She has lost 30 pounds in a short time. There is no mass palpable, no blood in the vomitus or stools. There is a large post-operative hernia at the site of the previous operation, but this does not seem sufficient cause for her symptoms.

Diagnosis.—Pyloric stenosis due to adhesions or possibly new growth. Post-operative ventral hernia.

Operation October 25, 1911.

The old scar was excised and the field inspected.

The omentum was adherent over the inner surface of the hernia, to the first part of the duodenum and to the under surface of the liver at the site of the gall-bladder which had been removed. An angulation and constriction had been caused by these adhesions in the first part of the duodenum producing the obstructive symptoms.

There was no growth, the pancreas was normal, the stomach was full but not pathologically dilated.

After dealing with the adhesions the adherent omentum was excised and the peritoneum and posterior sheath of the rectus closed by an interlocking suture of plain gut.

This line was then rolled inwards by placing mattress sutures of heavy kangaroo tendon deeply in the outer fascial layer one inch from the incised margins.

Two retention sutures of silkworm, double strands, were placed in a figure-of-eight manner to relieve the tension on the deeper sutures. The skin was coaptated over a small wick of rubber tissue.

The length of the hernial opening was six inches. The operation took one hour.

Convalescence was uneventful.

Patient sat up on the 28th, was allowed out of bed on November 10th, and went home on the 26th. The wound healed by primary union.

September 25, 1912. Patient is in perfect health. Has regained all and more than she lost in weight. There are no abdominal symptoms and the scar is firm.

April 13, 1913. Patient well and scar perfect.

CASE III. Private patient. Mrs. F. L., aged 44.

Admitted to the Red Cross Hospital, April 2d, discharged April 21, 1912. Patient is a stout woman weighing 175 pounds.

Patient seeks relief from the symptoms of indigestion, gas, constipation and colics caused by a small umbilical hernia that has recently been growing larger. Its present size is about that of a lemon.

Operation, April 3rd. After exposing the hernia there were found two small breaks in the middle line above the umbilicus through which adipose tissue was protruding.

The hernial sac was excised with some omentum adherent to it, the fascia was split upward to include the upper defects. The appendix was removed in the course of the operation. The hernial opening was closed by bringing the peritoneum and deep layer of the rectus sheath together by No. 2 plain gut doubled, then two rows of mattress sutures of heavy kangaroo tendon to invert the sutured surfaces into the abdominal cavity. The superficial parts were closed by silkworm gut over a rubber tissue drain. Time, one hour.

Patient was out of bed on the eleventh day and went home on the 21st. Primary union.

January 13, 1913. Wound perfectly solid. Bowels acting normally.

CASE IV.—Mrs. C. R., aged 36. Referred to me by Dr. J. J. Tierney.

Admitted to the Red Cross Hospital, May 23d, discharged June 16, 1912. A short, stout, heavy woman with a very large abdomen.

She wishes treatment for an umbilical hernia as large as a goose egg. She has noticed the rupture for many years but it has given her distress, indigestion and colics only recently.

Operation, May 24th. The hernial sac was isolated by the usual elliptical incisions. With the adherent omentum the loose part of the sac was excised. The incision was enlarged downwards to remove a left hydrosalpinx, cystic and adherent right ovary and a chronically inflamed appendix.

The hernial orifice was closed as in the preceding case, excepting that three retention sutures of silkworm gut were required. Time of operation, 65 minutes.

Recovery was satisfactory, primary union resulted, patient left the hospital on June 16th with a solid scar.

CASE V. F. M. Man; aged 43.

Admitted to Harlem Hospital October 23, 1912; discharged November 26, 1912.

He was operated upon nine years ago for suppurative appendicitis, the wound was drained.

Since that time he has had a hernia at the site of the operation.

He was brought to the hospital with a severe attack of colic and vomiting. Bowels had not moved for three days but he had passed some gas. The mass in the right side has increased in size and cannot be entirely reduced, whereas before he could always reduce it.

The hernia is larger than a large grape fruit, partly reducible and somewhat tender. The sac is so thin that the peristaltic movements of the intestines can be seen.

Operation on the 24th disclosed a large dissecting hernia with numerous pockets. When the sac had been fully freed and the margin of

the hernia exposed the gap in the wall was found to be 6x2 inches. The loose part of the sac with the adherent omentum was excised. Some of the omentum was utilized in covering raw surfaces of small intestines, where it had been separated from the sac; however, a considerable portion of the sac was inverted into the abdominal cavity after closure as in the preceding cases. Two rows of the kangaroo tendon mattress sutures were used in inverting and approximating the hernial margins and four silkworm gut, double, sutures were placed for retention purposes in the figure-of-eight manner. The skin was closed over a rubber tissue drain and sutured with plain gut. Time two hours.

His bowels moved on the 26th without special attention. The wound healed by primary union, but there was a serious discharge from the drainage tract for two weeks.

He was discharged, cured, on November 26, 1912.

April 18, 1913, Dr. A. T. Rossano, former House Surgeon to Harlem Hospital hunted up this patient and found him at work, in good health, with a perfect scar.

CASE VI. Miss S. S., aged 60 years.

Admitted to Harlem Hospital November 7, 1912; discharged January 11, 1913.

Three years ago she was operated upon for a "tumor of the uterus."

There was a scar below the umbilicus, in the middle line in which there was a defect at its upper part through which a small post-operative hernia had formed during the past four weeks, so she states. She often vomits after eating and has attacks of colics.

The protrusion was through an opening about an inch in diameter and about as large as a hen's egg. It was easily reducible.

Operation, November 14.

The skin covering the small hernia with the umbilicus included was removed. The hernial sac was slightly nicked in the process and its contents seen to be omentum which was easily reduced and was not adherent.

The rent in the sac was closed and the sides of the orifice brought together with three interrupted mattress sutures of kangaroo tendon. Silkworm retention sutures were placed and the skin closed over a small drain. Time 25 minutes.

The bowels moved on the 16th. The drain was removed on the 20th. This wound was infected by a displacement of the patient's dressings and discharged until January 5th when it was found firmly closed. She was out of bed on that date and left the hospital on the 11th.

April 18. This patient cannot be traced.

CASE VII. Mrs. C. T., aged 58; admitted to Harlem Hospital January 27, 1913.

A large, heavy woman, weighing about 180 pounds.

Three years ago she had been operated upon for some abdominal condition.

Examination shows an immense post-operative hernia through a gap at the right of the median line below the umbilicus. This hernial mass is of the size and shape of a large Derby hat minus the brim. At the most prominent part of the tumor is a long scar. Adherent to the scar and the sac about it is a hard, intra-abdominal mass, about six inches long and four in width. This mass was diagnosed as a fibroid tumor, probably from the uterus.

Operation January 30, 1913.

The central portion of the sac was isolated by two elliptical incisions, 12 inches in length. This part of the sac, with the adherent tumor (which proved to be a fibroid of the right ovary, with a partially twisted pedicle) was excised. The omentum was greatly increased in breadth and thickness and adherent to the greater portion of the sac, especially about its margins.

The intestines were also adherent in numerous places. After they were released the sac and omentum attached to it for several inches were trimmed off; hemorrhage controlled by an interlocking suture, then the redundant sac with the omentum were sutured together so as to close up the opening into the abdomen. This left a projecting mass of tissue about as wide and thick as ones' two hands placed palms together.

The hernial orifice measured 7 inches vertically by 4 inches transversely. The edges and surface of the fascia were thoroughly cleaned for an area of two inches all around the opening. The deep, mattress sutures of heavy kangaroo tendon were carefully placed at distances of a half inch from each other. The first row inverted the above mentioned great mass of tissue (sac wall and adherent omentum) and the second row still further inverted the abdominal wall and hernial mass.

Four double strands of No. 2 chromic gut were used for retention sutures; a rubber drain was inserted in the superficial wound and the skin closed by plain gut.

The operation took one hour and twenty minutes.

The bowels moved by the second day. They operated daily thereafter. The drain was removed by the end of the first week and the retention sutures at the end of the second; two of them had been absorbed. There was primary union in the parts.

March 4. Patient out of bed; bowels regular.

The growth proved to be a fibroid tumor of the right ovary. It measured six and a half inches in its long dimension and four and a half inches in its short diameter.

March 17. Discharged cured, with a firm scar.

April 18. Dr. Rossano found the patient in good health with a perfectly solid scar.

Discussion.

Dr. OWEN E. JONES, Rochester:—The method of inverting the sac in the operation of ventral hernias is, I believe, an excellent solution for certain cases which confront us, in which the coils of intestines are so firmly adherent that separation would be difficult and possibly dangerous to accomplish; and where the adhesions had produced no tendency toward intestinal obstruction. It is readily seen care must be exercised in suturing the sac to avoid the danger of puncturing any coil of bowel which may be in contact with or adherent to the inverted sac.

There also may be some danger in the readjustment of the already adherent bowel of producing intestinal obstruction, although I have never known such complication to occur. I have on a number of occasions operated upon these cases in the manner described by Dr. Haynes in his paper and believe it to be suitable in those cases where there are many dense adhesions and danger to the patient in prolonging the operation.

Dr. ROYALE HAMILTON FOWLER, Brooklyn:—Mr. Chairman, I thank you for your invitation to join in the discussion of this subject, I congratulate Dr. Haynes upon the success which he has attained with this method of treatment. I am happy to say that I was once a pupil of Dr. Haynes; that to-day he remains my teacher.

In 1836, Gerdy reported two cases of ventral hernia which he treated successfully by inverting the entire hernia, skin and other coverings into the abdomen. He produced adhesions between the inverted cutaneous surfaces by ammonia, sutured together the margin of the sac and obtained firm union in seven or eight days.

In 1872 and 1876 Simon, employing the same principle, treated two cases by inversion, having previously denuded the skin over the margin of the hernial aperture. The raw surfaces were opposed by three rows of sutures. Good results were obtained in both cases.

Hegar, in 1879, still further modified the operation by making the cutaneous denudation of horse-shoe form. Jeffremvosky, Hoffa, and Maas also employed this technic.

Ballandin, instead of limiting denudation to skin, attempted to still further improve Simon's method by deepening his incision into the substance of the muscle.

In 1887, Wm. M. Polk, in the discussion of W. Gill Wylie's paper read before the New York Obstetric Society upon Ventral Hernia, stated: "It ought to be possible to unite the fascia without opening the peritoneal cavity."

It seems that Chrobak, the same year, made

the first systematic attempt to carry out this idea. He did not succeed, but punched the peritoneum full of holes and resolved never to attempt it again.

In December, 1890, G. M. Edebohls operated for the radical cure of a ventral hernia 10x5 cm. by dissecting the layers of the hernia from the peritoneum practically without opening the abdominal cavity, inverting the peritoneal pouch and bringing together over it the separated margins of the recti muscles, fascia and skin. The following year, in a paper entitled "Ventral Hernia, With a Plea for Extraperitoneal Operation," he set forth the advantages of this procedure. This was considered by him the first recorded case in which the sac of a ventral hernia had been treated extraperitoneally and inverted.

What are the actual advantages? It is claimed that (1) it removes the procedure from the category of a laparotomy. (The fear of incising peritoneum *per se* would have little weight.) (2) That the inverted sac strengthens a weak point similar to MacEwen's operation for inguinal hernia, in which the sac is puckered up to form a pad. (3) That no time is wasted in separating an adherent sac or intestinal coils from the scar, if these are present. The last is the important argument in its favor.

The speaker's experience with extraperitoneal treatment of the sac, and inversion has been limited to incisional herniæ occurring in an appendic scar. A number of these have been successfully treated. No cases of large ventral herniæ have been treated in this way, because of a danger, which, though remote, has seemed at times to be a contra-indication to its performance. The infolding of a large sac would seem to be attended with danger of intestinal obstruction. In case of large incisional herniæ there are usually coils of intestine adherent to the scar. In the event that such a hernia is inverted, it is readily seen that the adhesion is thereby lengthened.

Dr. Haynes, in closing the discussion: I wish to thank Drs. Jones and Fowler for their contribution to this subject. Especially are my thanks due to Dr. Fowler for his careful search of the literature and the report of more or less similar operative procedures.

The speakers have instinctively offered the very objections to this "inversion" method that arose in my own mind when performing the several operations. But thus far there has been no trouble from increased intra-abdominal pressure or intestinal obstruction. So far as the last is concerned, the increased tension within the abdomen has seemed to explain the fact that in the cases having had the most extensive work done the bowels acted spontaneously within 24 hours.

THE ROLE OF OVARIAN DISEASE IN THE PRODUCTION OF STERILITY.*

A PRELIMINARY CONTRIBUTION.

By **GEORGE W. KOSMAK, M.D.**,
NEW YORK CITY.

NOTWITHSTANDING the attention which has always been accorded to the relief of sterility in women, we must still acknowledge our great ignorance as to many of the features in connection with the physiology, pathology and treatment of this condition. Numerous methods of an operative character have been proposed to overcome the failure to conceive in women and one must regretfully acknowledge that their shortcomings are numerous. Aside from the necessity of always studying the husband's condition, arises the need for a careful examination of the wife and close attention to every lesion which might serve as a morbid factor. Malformations and malpositions of the generative tract undoubtedly occupy a very important place in the production of sterility, although it is probable that their effect has been overestimated. It is hardly possible that even a stenosed cervical canal can offer any obstruction to the progress of a spermatozoon which in its largest dimensions must necessarily be very much smaller than even the most tightly contracted cervical tube. It is more likely that circulatory and other disturbances which attend these malpositions are the direct preventions of conception, a subject which we need not discuss further in connection with this paper. Of ovulation, in respect to the time at which it takes place in relation to the menstrual periods we are still more or less in ignorance and whether each menstrual period is necessarily accompanied by the discharge of an ovum cannot be stated conclusively. We presume that a Graafian follicle ruptures at each menstrual period, but whether this occurs in each ovary alternately has not as yet been demonstrated. Nor do we know whether successive Graafian follicles ripen and rupture during successive months in a healthy ovary when the other is diseased. The only presumptive evidence which we have pointing to this fact is that in the presence of a cystic ovary which does not functuate, menstruation and apparently ovulation, goes on regularly. I have been impressed with the idea that although the menstrual function is apparently not inhibited in such cases, a Graafian follicle with its contained ovum does not always rupture on each occasion, for in many instances where such disease of the ovary is present sterility is a frequent accompaniment. This is a situation which it has been my endeavor to examine for proof with the aid of statistics obtained from various observers. For the purpose I distributed a ques-

tionnaire containing the following requests for information:

Married how long before oöphorectomy was performed?

Number of children before oöphorectomy and their sex?

Indications for operation?

Which ovary removed?

Pathological condition of the same?

Any other operation done at the same time?

Character of first menstrual period subsequent to oöphorectomy?

Date of birth of children after oöphorectomy.

Sex of subsequent children.

Unfortunately the results have not been entirely to my satisfaction, as only a comparatively few responses were secured and in most instances the data was not sufficiently explicit to permit the drawing of any definite conclusions. I hope to continue the investigation, however, and at some future time be in a position to obtain more definite results.

The question of sterility in women is such an important one that we ought to take every factor into consideration which may have bearing on the situation. The masterly papers published by Edward Reynolds, of Boston, Clark and Norris, of Philadelphia, and others, clearly demonstrate this fact and I have been largely impressed and influenced by their statements. The principles of conservative treatment of the ovaries in laparotomies is of undoubted value, as we know the functioning power of even small masses of ovarian tissue is not to be questioned. We ought to differentiate, however, the particular lesion present in the ovary in our case, as ovaries damaged by inflammatory processes with the production of adhesions would seem much more amenable to treatment than those in which a cystic degeneration has occurred. From a study of such cases, as the example detailed below, I have been led to believe that marked cystic degeneration of the ovaries is the central and important factor in the production of the sterility in certain instances, for reasons which I am not at present competent to state. I hope, however, to bring forward more definite evidence in the future. The limits imposed upon me in the reading of this paper will prevent any extended statement of the literature of the subject, although this is not very extensive in this particular field. Let me relate briefly a case in which a cystic ovary with resultant symptoms was probably the cause of a sterility in a patient in whom no other definite lesion could be demonstrated.

Mrs. L— was first seen by me on February 22, 1912. She was then 36 years of age and had been married seven years. She had never been pregnant and a dilatation with curettage was done four years previously for dysmenorrhea and sterility. Her menstruation was regular, scant and somewhat painful, although less so than be-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

fore her operation. Two years previously she had an attack of pain in the right iliac fossa which lasted for two days. Otherwise the patient was in good health and accustomed to considerable out-door exercise. She was a well nourished woman and not inclined to any neurasthenic symptoms. Four weeks previous to the time I saw her she began to complain of pelvic distress. When examined at the time of my first visit, the right ovary was sensitive and tender, the tube likewise. The left side seemed normal. She had been in bed more or less during the last period but did not secure entire relief. There had been no omission of any periods and there was no flow between the periods, neither was there any rise in temperature or pulse rate. The patient also complained of a desire to urinate frequently. A more careful examination undertaken about two weeks later showed an anteflexed and anteverted uterus, movable and not tender. Posteriorly and apparently attached to the uterus was a rounded mass as large as a hen's egg and tender to the touch. The cervix appeared congested and the os small. In view of the scant and somewhat painful periods and the presence of the mass in the pelvis, which was taken to be an enlarged ovary, operation was advised and consented to. On March 20, 1912, at the Lying-in hospital, a laparotomy was done after preliminary dilatation and curettage. Exploration of the cervical canal showed that the calibre of the same was so constructed as to admit only a fine silver probe. After cleaning out the uterine cavity, a hard rubber stem pessary was introduced and left in situ. After opening the abdomen exploration of the pelvis showed a uterus of normal size, with normal tubes that were patent to the passage of a probe. On the left side the ovary was as large as a pigeon's egg, cystic in character and attached by moderately strong adhesions to the sigmoid and part of the cul-de-sac of Douglas. This left ovary did not seem to contain any normal tissue and was completely excised, especially as the right ovary was apparently of normal size and character. The appendix presented a marked constriction about half an inch away from the tip, and was removed. The patient made a good recovery, and on April 8th, nine days after operation had a free discharge of blood which lasted about twenty-four hours and simulated a period. On April 20th the stem pessary was removed. On April 28th a period came on which lasted five days, was more profuse than usual and free from pain. The patient stated that it came on nine days ahead of the expected time. Following the same she had normal periods on May 22d, and June 15th, each lasting about four days. The patient became pregnant and went through a perfectly normal pregnancy and was delivered on March 30, 1913, of a full term healthy girl baby after a moderately severe labor. Dilating bags had been introduced the day previously, as the patient had irregular pains but showed no ten-

dency to go into labor and the child seemed to be at term.

This is an instance where the relief from the sterility might be ascribed to the dilatation and curettage, but as this had been done on a previous occasion without results it is improbable that it was not the only factor. Undoubtedly the presence of a cystic ovary without traces of Graafian follicles or corpora lutea showed that the functioning power of the left ovary was either gone or very much reduced and that the chances for impregnation were actually reduced one-half by this fact. Why should the removal of such an ovary tend to do away with a condition of sterility? This is a difficult question to answer, yet we may assume that the irritation and disturbance produced by the presence of a diseased ovary of this character would in itself act as a bar to successful fertilization. It would be considered very radical to advocate the removal of a cystic ovary in all such cases, however, particularly if the enlargement was not of a marked degree and likewise if instead of a cystic ovary we are dealing with adnexal tissues that are the seat of inflammatory processes. Yet it might appear advisable to do this if children were desired and this lesion on the part of the mother was discovered to be the only obstruction to pregnancy. While such ovarian disease may not be the only cause in the individual case, it undoubtedly constitutes a contributing factor and may possibly be of greater moment than abnormalities in position, etc., of the uterus and cervix.

Another point of interest is in the reference to the influence of one diseased ovary on the other. We often find that the removal of such tends not only to the relief of specific symptoms referable to the same, but also to an apparently increased function on the other side. In nineteen cases out of a series collected, pregnancy had not preceded the operation of oophorectomy and with the exception of three in which an ectopic was present, cystic ovaries or a chronic salpingo-öophoritis was given as the cause for the removal. An attempt to determine the character of menstruation after the operation was unsatisfactory in most cases, although in several operated on by the writer a relief from the pelvic distress and an improvement in the menstrual conditions was clearly evident.

The writer is fully aware that the series of forty-five cases which he has been able to collect from various operators is entirely unsatisfactory as regards the conclusions to be drawn from the same. In collecting them he was desirous of obtaining information not only as regards the relief of sterility but also on the effect of the removal of one ovary on the sex of the child. The present communication is presented as a preliminary paper because it is hoped that in a few years more definite records of a larger number of cases will be secured. The results are, therefore, presented for what they are worth. There were

seven cases of extra-uterine pregnancy in the series in which the ovary was removed in connection with the ruptured tube, otherwise the ordinary cystic degeneration served as the reason for the oöphorectomy except in a few instances where salpingo-oöphorectomy with adhesion was given as the cause. In nine cases a uterine suspensory operation was done and likewise an appendectomy. In twenty cases children were born previous to the removal of the ovary. As regards the sex of children born subsequently, attention may be called to the fact that the sex changed in four cases and remained unchanged in seven where children of one sex had been born previously. In three cases with more than two previous children of different sexes, the sex after oöphorectomy followed the preponderating sex previously. In one case where five female children had been born there were two males and one female in the succeeding births, and in another where four females were born a male subsequently resulted. An attempt to relate the sex of the removal of one or the other ovary was therefore unsuccessful, as in the series of forty-five cases there were sixteen male and thirteen female infants following the removal of the right ovary and sixteen male and fifteen female infants following the removal of the left ovary—a fairly equal division of the sexes.

In the nineteen cases of the series in which pregnancy had not preceded the operation the oöphorectomy was done in three women while still single and in seven in a year or less after marriage. In the remainder the operation was done in from four to ten years after marriage. In three cases pregnancy took place in less than a year, in ten cases in less than two years and in three cases between five and six years, although several abortions occurred in one of the latter series. As regards the sex of these children we find that in cases where the left ovary was removed there were eight males and nine females subsequently born and where the right was removed there were five males and eight females.

Summary.

There seems to be no question from the observations thus far made by a number of writers that the question of sterility in an otherwise healthy woman must depend on an aggregation of factors rather than on a single lesion and that in every instance the entire pelvic contents must be subjected to careful study.

In a certain proportion of cases, however, the removal of an ovary which is diseased undoubtedly contributes to increased function in the other, as evidenced by an improvement in the menstrual conditions and the greater possibility of subsequent pregnancies. It would appear as if the question of sex was not dependent on the side from which the individual ovum is derived and that whether the left or right ovary is removed the proportion of sexes in subsequent children is about equal.

ACUTE THYROIDITIS AS A COMPLICATION OF ACUTE TONSILLITIS.*

By CLEMENT F. THEISEN, M.D.,
ALBANY, N. Y.

DURING the past ten years a number of cases of acute thyroiditis, seven in all, have come under the writer's observation. This may not appear to be a large number, but acute thyroiditis is a fairly uncommon and interesting condition, and for that reason a paper on the subject may be timely.

The writer's cases are of particular interest from an etiological standpoint, as in all except one case, the inflammation of the thyroid gland occurred with or directly after attacks of tonsillitis.

Four of the patients have been seen from time to time during a number of years, and the writer's observations are particularly based on these cases. Two of these patients have each had two distinct attacks of acute thyroiditis, each time with an acute tonsillitis, and both have since developed well-marked diffuse goiters.

In both these cases as well as in all of the cases reported in this paper, the inflammation of the thyroid occurred in a previously healthy gland of normal size. For this reason and because in no case did suppuration occur, the cases belong in the class described by Mygind and other authors under the name "thyroiditis acuta simplex," particularly to distinguish them from cases of acute strumitis in which the disease involves the already hypertrophied thyroid gland.

Suppuration occurs much more frequently in this class of cases, and they are not as uncommon, occurring sometimes with pneumonia, measles, typhoid fever, influenza, diphtheria, etc.

The writer's patients were all girls and young women, and a search of the literature shows that this is true in the majority of the cases. The only case that did not occur with tonsillitis was one that developed during the course of a pneumonia.

A point of particular interest is the fact, that two of the patients have since their attacks of acute thyroiditis developed well-marked goiters.

Two others had attacks of hyperthyroidism with all the typical symptoms, developing soon after the attacks of acute tonsillitis and thyroiditis.

I do not wish to be understood as emphasizing the above facts as being important etiological factors in the development of goiter, but it is by no means impossible, that the repeated inflammatory attacks the gland was subjected to in the two cases before referred to, may have partly at least been responsible

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for the subsequent chronic hypertrophy of the gland.

S. P. Beebe¹ in an interesting paper in the *NEW YORK STATE JOURNAL OF MEDICINE* states, that "a considerable number of these patients have tonsillitis and adenoids, and an acute attack of hyperthyroidism may follow promptly an acute attack of tonsillitis."

He also says "that these patients often give a history of repeated attacks of acute tonsillitis preceding the development of a goiter, and that any acute throat condition should be avoided."

Lücke²⁴ has given perhaps the best description of acute inflammations of the healthy thyroid gland. He divides them according to their etiology into three forms, the idiopathic, traumatic and metastatic.

A classification of acute suppurative thyroiditis and acute simple thyroiditis is more practical, however, and has been adopted in the writer's paper.

Acute simple thyroiditis which runs its course without suppuration is a rare disease, and a *primary* acute inflammation of the thyroid gland is declared by Ochsner and Thompson¹⁵ in their classical work "The Surgery and Pathology of the Thyroid and Parathyroid Glands," to be so rare that it is almost never seen. I have been able, however, to find a few cases in the literature which will be referred to.

I would again emphasize the necessity of distinguishing between the cases of inflammation of a previously hypertrophied gland, strumitis acuta, which is not so uncommon particularly where goiter is endemic, and the cases of acute inflammation of a previously healthy gland. There is some confusion in the literature in this respect, as several authors have used the terms incorrectly.

Simple acute thyroiditis must also not be confused with acute hyperæmia of the thyroid gland, such as is seen in anomalies of menstruation and acute infectious diseases. It is not uncommon in measles epidemics, particularly in Switzerland where goiter is endemic.

Symptoms.—The symptoms in cases of acute thyroiditis are quite characteristic. A symptom, and one causing the patient perhaps the most discomfort, is the dysphagia which is practically always present. This difficulty in swallowing, which is largely mechanical, due to the compression of the esophagus, is most marked when the swelling of the left lobe of the thyroid is very decided, because the esophagus is closer to the left lobe than to other parts of the thyroid. The dysphagia, as in cases three and four (writer's), is sometimes so great that for several days it is difficult for the patient to even swallow liquids. The writer is, however, of the impression, that if some of the cases of acute thyroiditis are carefully studied, it will be found that the dysphagia is partly at least caused by the intense

acute angina, which often precedes the attack, and will be found more frequently than the reported cases indicate.

Acute thyroiditis is accompanied by a more or less acute congestion and swelling of the mucosa of the upper air passages, and the dyspnoea which also a frequent symptom, is caused by both the compression of the trachea by the greatly swollen thyroid, and the congestion of the tracheal mucous membrane.

A good many of the cases start with a chill, headache, prostration and other symptoms of an acute infectious process. There is always an elevation of temperature, but this is rarely either very high or prolonged, except in the cases that go on to suppuration. The swelling of the thyroid varies but is usually considerable, and there is sometimes considerable congestion of the surrounding parts.

Writer's Cases. CASE 1.—Miss L. B., age 20 years, came into the Nose and Throat Clinic at St. Peter's Hospital in 1906, with history of sore throat for several days. On examination a typical acute follicular tonsillitis was found. The thyroid gland was greatly and uniformly swollen with some redness of the skin and very tender to the touch. This developed during the third day of the tonsillitis, and the patient stated that the gland was not enlarged before her attack of tonsillitis. The swelling of the thyroid increased during the next two days and there was some dyspnoea undoubtedly caused by tracheal compression. Deglutition was very painful, but there was not as much dysphagia as in some of the other cases, perhaps because the left lobe of the gland was not more involved than the other parts.

Temperature was 103 degrees F., for several days. The usual treatment for the tonsillitis was given, and an ice coil was kept around the neck constantly until the swelling of the thyroid gland subsided, which was in about a week. The temperature gradually dropped, being normal within a week and remaining so.

Patient would not consent to a tonsillectomy, and the following winter came to the clinic with a similar attack, running the same course and again developing with an acute tonsillitis.

This patient came to the clinic at regular intervals during the next two years, and while there were no further attacks of acute thyroiditis, she developed a gradually diffuse goiter. It is at least possible that etiologically there is a connection between her attacks of thyroiditis and the subsequent hypertrophy of the gland. There is no doubt that the infection of the gland was each time caused by the acute tonsillitis.

The only internal medication that this patient and in fact all the writer's patients received, was calomel in the beginning of the attack, and urotropin in large doses freely diluted.

Just how much good urotropin did these cases I am not prepared to say. Many good results are reported from its use in acute processes of the upper air passages.

As before stated, none of the writer's cases went on to abscess formation in the gland. The constant use of the ice coil was of the greatest service and reduced the acute congestion of the gland very promptly in all cases.

CASE 2.—Young woman, married, age 22 years. Same history as in preceding case. Acute thyroiditis developed during an attack of acute tonsillitis, and the development of the attack could again be observed from the beginning. The thyroid was greatly congested and extremely sensitive to pressure. Dysphagia and dyspnoea as in the last case.

Cold applications to neck again reduced the swelling of the thyroid quickly, and this subsided with the improvement of the acute angina, showing an undoubted connection between the two conditions. She was practically well in ten days, and I did not see her again for about two months, when she came to the clinic with typical symptoms of hyperthyroidism.

CASES 3 and 4.—Both young women, ages 21 and 24 years respectively, unmarried. Both stated that before the present attack they had had no enlargement of the thyroid.

One patient was just getting over a severe attack of acute tonsillitis, and the other was still having an acute attack. In both, the thyroid gland was greatly swollen and extremely sensitive to the touch.

The dysphagia in both cases was extreme, so that for several days liquids could be swallowed with great difficulty. There was also great dyspnoea for two or three days. The ice bag with the treatment used in the other cases, reduced the inflamed thyroids quickly.

Temperature for four or five days was 103 degrees F., and they were very ill with chills and great prostration.

CASE 5.—Mrs. J., aged 25 years. I was called to see this patient by her attending physician, for a swelling of the thyroid, which developed after the crisis of a pneumonia. The swelling increased rapidly for several days, and there was the usual great tenderness. The throat was reddened, but there was no history of an acute agina. Her physician stated, that her thyroid had been entirely normal before the pneumonia. The attack ran the usual course of about ten days, and yielded to the same treatment.

CASE 6.—Miss A. S., aged 19 years. First seen in January, 1908. Had had a very severe acute tonsillitis a week before I saw her, and developed the acute thyroiditis immediately after the attack.

The attack ran the usual course, and a year later another acute thyroiditis came on with an acute follicular tonsillitis. This patient has

been under observation continuously, and has developed a well-marked diffuse goiter, which started about six months after her last attack of thyroiditis.

CASE 7.—In the seventh case, that of a woman, aged 30 years, a very severe acute thyroiditis came on directly after an acute tonsillitis. There was a good deal of dyspnoea and dysphagia in this case, and within a few months after the attack, she developed a typical condition of hyperthyroidism.

Of the cases found in the literature on the subject, I could find only the following references to acute angina, as a cause for acute thyroiditis:

Lewis and O'Neil,² who reported severe pharyngitis and great pain in swallowing for two weeks, with the attack.

V. Handing's case¹² and Ewald's contribution.¹⁴ Ewald calls attention to the fact that the inflammation of the thyroid may follow inflammatory processes of neighboring parts, and particularly acute sore throat.

Denger and Pieri,^{3,5} have described the relation of acute thyroiditis and Graves' disease. Pieri has collected six cases, and Denger has reported seven cases.

Primary Cases.—The primary cases are the rarest of all, and there are only a few in the literature.

The youngest case on record (primary) is that reported by Carpenter,¹¹ in a boy 14 months old.

Goldberger,⁴ Weber⁹ and Burk,⁷ have also reported primary cases.

The above cases, so far as I could determine, were non-suppurating cases, and following are the only other authentic cases belonging in this classification that I could find. In all of them the thyroid had been previously healthy. They have been reported by Cruvelhier,²⁵ Bauchet,²⁶ Brieger,²⁸ Koppe,²⁷ Barlow,²⁹ Given,³⁰ Charrot,³¹ Koranyi³² and Zesas.³³

In these cases the ages of the patients, mostly women, were between 20 and 30 years, with the exception of Barlow's case, which occurred in a child 3 years old.

Mygind's case²³ followed, a nasal infection terminating in erysipelas.

Diphtheria was responsible for the inflammation of the thyroid in Brieger's case, typhoid in Koranyi's, and malaria in Zesas'.

Of the other cases in the literature Schewerin⁶ has reported two cases of the non-suppurative type of thyroiditis, and Collet³ has reported a case with whooping cough, in a child 18 months old. An abscess formed in this case, and it is one of the youngest cases on record.

Sabitt¹⁰ has reported thirteen cases from the Genf. Clinic, including one of his own. He states that cases occurring with pneumonia are usually mild. When bacteriological findings were positive pneumococci were found in 44.82 per cent. of the cases.

Kyle¹³ has reported two cases of the thyroiditis simplex type, both in young men aged 24 years. He found in both cases changes in the blood, increase in fibrin, and diminished function of the red blood corpuscles.

The following were also found: One reported by Bruney¹⁶ following pneumonia, one after influenza, reported by Browne,¹⁷ and one by Smeeton,¹⁵ two after influenza, by Kiffen¹⁹ and Ismet,²² and one by Robertson,²⁰ following diphtheria, in which an abscess formed.

Bauer²¹ has reported three cases during the course of scarlet fever.

A study of the reported cases shows that in a fairly large percentage the inflammatory attack involved a gland that had been chronically enlarged, also that the majority of the cases occurred with, or followed acute diseases, such as diphtheria, scarlet fever, influenza, pneumonia, etc. Exclusive of the writer's cases, there were only a few cases recorded as a result of tonsillitis.

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RESULTS OF SALVARSAN THERAPY IN MALIGNANT SYPHILIS PRECOX, SYPHILIDE OF THE PALMS AND GUMMA OF THE TONGUE.*

By H. F. L. ZIEGEL, M.D.,
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I. MALIGNANT SYPHILIS PRECOX.

IT is now well known that in malignant syphilis with mucous membrane lesions which have been resistant to mercurial treatment, striking symptomatic results can be obtained with salvarsan. Additional proof of this fact is the subsequent history of a case which has been previously published under the title: "Precocious Tertiary Syphilis: Report of a case with manifold manifestations."**

Fifteen months after postnuptial infection by his wife, a patient 37 years of age who had been treated neither thoroughly nor methodically began to exhibit tertiary manifestations which appeared in the following order:

- (1) Ulcer of the right leg;
- (2) Papular syphilide of the scalp;
- (3) Deep ulcerations of tonsils and posterior pharyngeal wall;
- (4) Stricture of the left nasal duct;
- (5) Ulcers on the forehead;
- (6) Periostitis of nasal bones;
- (7) Gumma, suppuration and perforation of nasal septum;
- (8) Bursitis and synovitis;
- (9) Periostitis of heads of tibiae;
- (10) Gummata of right testicle;
- (11) Synarthrositis.

From the above it will be seen that the lesions had been superficial, involving chiefly the skin, mucous membranes, ocular appendages, cartilages, bursæ, periosteum, the testicle and costochondral articulations. When the report before summarized was published, the patient was free from syphilitic manifestations, all of which had responded to mercurial treatment given in the form of inunctions and injections of the salicylate. At this time, October, 1909, however, the Wassermann reaction was strongly positive. Mercurial treatment was therefore continued up

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

** *Medical Record*, 1909, Vol. LXXVI, p. 645.

to the time the patient passed temporarily out of observation in July, 1910, when, despite this additional treatment for nine months, the Wassermann was still strongly positive. Contrary to advice the patient discontinued treatment because he felt well and was free from symptoms and lesions.

In October, 1911, the patient returned with ulcerations over both tonsils. The administration of salvarsan was not only advised but strongly urged. But having a mind of his own and regarding salvarsan treatment as still in the experimental stage, the patient would not submit to it until July, 1912, when he again returned, this time in a pitiable condition. He had lost considerable flesh and strength and was cachectic; there was profuse foul discharge from extensive deep ulcerations and broken down gummata in the nares and pharynx. His weight was 112 pounds. The Wassermann reaction was strongly positive. Noguchi's luetin test was positive—of a pustular type. The patient's words were: "Now that I am down and out I am willing to take a chance with 606."

Accordingly, on August 1, 1912, 0.6 gm. of salvarsan was given intravenously with the Fox-Trimble apparatus and technics. Starting five hours after the injection and lasting twenty-four hours there was a slight reaction with nausea, diarrhoea and a rectal temperature of 100° F.

Two days after the injection the ulcerations on the tonsils, uvula, palate and posterior pharyngeal wall appeared healthier and there was less discharge. By August 10th the ulcerations had healed entirely and the discharge ceased. Almost miraculous was the transformation. There was a gain in weight of one pound and the general condition was greatly improved. On August 15th another pound had been gained and the general condition had improved still further.

On August 16th another intravenous injection of 0.6 gm. of salvarsan was given. There was practically no constitutional reaction. On August 29th the weight had increased to 116; the patient said he felt like a new man and possibly was not in error in declaring that his life had been saved by salvarsan.

On September 1st was started a series of twelve injections of gray oil. In December, 1912, the weight had increased to 130 pounds and the general condition had improved greatly; during the six years of observation previous to the treatment with salvarsan the highest weight was 124½ pounds.

This patient is far from being regarded as cured of syphilis. In December, 1912, the Wassermann was still strongly positive. Intradermal injection of 0.07 c.c. of luetin was followed in five days by the appearance of a pustule from which six days later seropuru-

lent fluid was extruded. Three months ago the patient would not submit to further mercurial treatment, though urged to do so. Who knows when he will return with new manifestations?

Conclusion.—Despite the rapid involution of severe syphilitic lesions and the prompt disappearance of cachexia after salvarsan therapy in a case of malignant syphilis, the persistence of a positive Wassermann reaction and of a positive luetin test after repeated administration of the drug would seem to indicate that the disease is not permanently suppressed, though at the time of writing the patient has been free from symptoms and lesions for eight months.

II. SYPHILIS OF THE PALMS.

From the standpoint of therapeutic efficiency as indicated by the permanence of the symptomatic results and the effect on the Wassermann reaction, only in selected cases does salvarsan appear to have advantages over mercury. Such an exceptional case is one of squamous syphilide of the palms in which apparent cure after prolonged mercurial treatment was always followed by a recurrence of the eruption and by positive serum test; but since salvarsan therapy was employed over two years ago there has not thus far been any reappearance of the skin lesion or return of a positive Wassermann.

A male patient, 40 years of age, had a genital chancre followed by secondary symptoms twelve years ago. He was systematically treated by mouth for two years, when he married and the treatment was continued for another year. His wife gave birth to a dead child seven months after marriage; she remained well but never became pregnant again till eight months ago. Two years ago her Wassermann was negative. According to information kindly furnished by her obstetrician, Dr. Thomas H. Cherry, at the time of writing there was a living foetus.

Three years after Mr. B.'s primary affection, a scaly eruption appeared on the palms, which when the patient first came under observation three years ago had been unsuccessfully treated with ointments. The Wassermann reaction was positive. One month after a series of twelve deep injections of the salicylate of mercury, the eruption was gone but the Wassermann was still positive. One month later the eruption reappeared. A new series of twelve intramuscular injections of the salicylate resulted in temporary local improvement. But two months after the last injection of the second series the eruption was returning and the Wassermann was positive. It is to be noted, then, that after mercurial treatment there was a temporary favorable effect on the syphilide but persistence of a positive Wassermann reaction. Some

months previously Fordyce* had reported a similar case successfully treated with salvarsan.

Accordingly an intramuscular injection of 0.5 gm. of salvarsan in iodipin suspension was given and repeated in two weeks. Even before the second injection the palms had become soft and free from scales and up to date, during a period of over two years, there has been no recurrence. Though at the time of writing the skin over the palms appears to be normal, because of a recent doubtful Wassermann report and as a precautionary measure, the patient is now being given a series of salicylate of mercury injections.

As to the serum tests, nine days after the second salvarsan treatment the Wassermann was for the first time reported negative; twice subsequently it was negative. These serum tests were performed simultaneously and independently at the Rockefeller Institute and by Dr. J. J. Hertz; there were no discrepancies. In July, 1912, Dr. W. J. Heimann also found the Wassermann negative. The last serum test, performed March 25, 1913, by the New York Board of Health and Dr. J. J. Hertz, was reported doubtful by the former and negative by the latter.

Whenever it was practicable during the past year the writer has asked two serologists to perform the serum test independently. In fourteen examinations which were thus checked up there was absolute correspondence in all but two instances, and in the latter there were but slight discrepancies.

Conclusion.—This case corresponds closely with the one reported by Fordyce and serves to confirm his experience that in scaling syphilide of the palms salvarsan is the specific of choice because of the greater rapidity and permanence of the therapeutic effect in this condition.

III. GUMMA OF THE TONGUE.

During the summer of 1905 a physician engaged in general practice in New York City failed to make it a rule to wear rubber gloves in his obstetric work. On the skin over the middle phalanx of the right index finger appeared a pimple-like swelling, which subsequently suppurated and was excised by Dr. Chas. A. Elsberg. There remained an indolent ulcer, which, when it matured from time to time was incised and curetted. In the meantime there had developed chilliness, intermittent fever, a lymphangitis extending up the dorsum of the hand to the forearm, and enlargement of the right epitrochlear and axillary nodes, those in the armpit being about as large as hazel nuts and very painful. About seven weeks after the finger infection was first noticed and three days after thorough curetting under general anæsthesia, there developed increased fever and chilliness, gastrointestinal disturbance, nocturnal pains, insomnia, slight loss of hair, general

adenopathy, pharyngeal hyperæmia and an erythematous eruption which Dr. Fred. J. Levisieur diagnosed as luetic. After incisions and the local application of unguentum hydrargyri the wound on the index finger healed promptly and the constitutional symptoms abated; during this treatment the roseolar macules on the trunk and extremities became copper-colored and in three weeks disappeared. Following the "schmeerkur" there was energetic treatment with salicylate injections for four years, *i. e.*, from 1905 to 1909. During 1909, 1910 and part of 1911, the Wassermann reaction was performed at intervals of six months and was always negative.

But in October 1911 after the physician had been in a "run down" condition for several months, he noticed on the dorsal surface of the tongue, situated about two inches from the tip and half way between the raphe and left lateral edge, a protuberance of pin-head size which caused annoyance because it could be felt by the palate. In three days this prominence had increased in size to that of a pea; it was not painful but was seated on an indurated tender base. Dr. Chas. A. Elsberg, Dr. B. S. Oppenheimer and Dr. Udo J. Wile were agreed that the growth was a gumma and that the immediate administration of salvarsan was advisable. For the first time the Wassermann was now faintly positive, performed by Dr. W. J. Heimann. Five hours after intravenous administration of 0.6 gm. of salvarsan by Dr. Udo J. Wile there was a severe chill lasting fifteen minutes and followed by very severe retro-orbital headache, repeated vomiting, diarrhœa and a rectal temperature of 104° F. Within 36 hours after the injection the above symptoms disappeared and the pea-like protuberance was getting smaller. In 48 hours it was less than half its maximum size and in 72 hours there was no longer any elevation to be distinguished by the patient's lip and palate, nor by the examiner's finger, though with the latter an area of induration could still be detected. At the site of the tumor which had "melted away" was to be seen a circular area of discoloration three-eighths of an inch in diameter. In less than one week there remained no subjective or objective evidence to indicate the former existence of the gumma.

Following two months of mercurial treatment and an interval of one month the Wassermann was negative (Dr. W. J. Heimann), and Noguchi's luetin test performed by Dr. Martin Cohen was also negative.

During the following winter (1911) the general health improved greatly, there was a gain of ten pounds in weight, and the Wassermann was negative. Though in the Fall of 1912 the Wassermann was still negative, as a precautionary measure Neosalvarsan in dosage number VI was given intravenously by Dr. Levisieur. There was a systemic reaction of moderate severity.

* *Journal American Medical Association*, 1910, Vol. LV., p. 1174.

In March, 1913, a serum test was performed independently by five serologists: Dr. D. J. Kaliski reported faintly positive, but Dr. Noguchi, Dr. W. J. Heimann, Dr. J. J. Hertz and the New York Board of Health all reported negative. Noguchi's luetin test was again negative.

At the time of writing the patient feels better and weighs more than at any time since he was infected eight years ago, and he is studying and practicing clinical medicine in New York City.

Conclusion.—*Despite systematic mercurial treatment for four years after extragenital syphilitic infection, there was a tertiary manifestation in the form of a gumma of the tongue, the rapid regression of which followed the intravenous administration of salvarsan.*

ENURESIS AND CHRONIC DIGESTIVE DISTURBANCES.*

By FRANK VAN DER BOGERT, M.D.,
SCHENECTADY, N. Y.

WHEN it can be justly said of a diseased condition that a physician's reputation is more often lost than won in its treatment, one is doubtless justified in assuming that comparatively little is as yet known as to its etiology.

It is no doubt true that involuntary passage of urine is due either to increased irritability of the bladder or to diminished tone of the sphincter, influenced by increased excitability of the lumbar center or interference with normal brain control. It is with the underlying cause of this excitability or inhibition that this paper hopes to deal.

That reflex irritation is of importance in the production of the symptom is evidenced by the not infrequent cures following the removal of these sources of irritation. Circumcision, or the relief of an adherent clitoris undoubtedly relieves some cases, as does also the repair of an annal fissure or the removal of a rectal polyp. The removal of adenoids is frequently followed by a cure. These same local conditions, however, occur with even more frequency in children who are not bed wetters, and the frequent failure following treatment directed toward these lesions must make us exceedingly sceptical as to their very great etiologic importance.

Leonard Williams believes that adenoids and enuresis are associated only because they are due to an underlying cause which he considers to be thyroid insufficiency. He was led to the use of thyroid in the treatment of incontinence by noting aggravation after the

removal of adenoids from a child in whom the adenoids were supposed to be the cause. The argument was that the adenoid hypertrophy was, in all probability, compensatory for the deficiency of lymphatic substance elsewhere. The thyroid gland was chosen to supply the supposed deficient internal secretion. Undoubtedly Dr. Williams has had many successes with this line of treatment. In my own experience, however, thyroid has more often failed than succeeded and a search of the literature fails to reveal any startling results. Thyroid improves the general tone, probably through augmentation of an individually deficient gland, and the atrophy of hypertrophied lymphatic tissue during administration of thyroid must, to any one who has seen it occur, be considered as sufficient evidence of the relationship of the thyroid gland to the lymphatic tissues. On the other hand, if we consider hypertrophied tonsils and adenoids as part of a general catarrh of the alimentary tract the relief afforded by the removal of these deformities may fairly be considered to be due to its effect upon the gastrointestinal condition and the subsequent improvement in the general health.

With the exception of a comparatively small number of cases in which an extreme state of acidity or alkalinity may act as direct irritant to the bladder wall, cases in which evidences of a true cystitis are found and the exceedingly rare cases of diabetes in childhood, the infrequency with which changes in the urine are found apparently warrants a certain disregard of the irritating properties of the urine in the production of the incontinence.

Whether we attribute the condition to local reflex disturbances or to changes in the urine or whether we believe it to be due to thyroid insufficiency, to deficiency in the suprarenals or as suggested by Mello-Leitao, that the enuresis is sometimes caused by an alternation of the hormone of the kidney, it seems fair to consider these factors as more direct and exciting causes and to look deeper for the underlying cause of the excessive responses of the nervous and muscular mechanism and for the derangement or poor development of the organs accused.

Since the fundamental nervous disorders of childhood so often apparently depend upon chronic digestive disturbances, the histories and symptomatology of more than 50 children, subjects of incontinence, were studied with a view to determining to what degree disturbances of the digestive tract might be held responsible for the development of the symptom. The dietetic histories invariably gave ample reason for suspecting the alimentary tract. Practically without exception gross errors in feeding were noted, these errors often dating from early infancy, of thirty-four children who gave a history of having been nursed, twenty had been allowed to remain at the breast for abnormally long periods,

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

fifteen of these had been nursed for a year or longer, some as long as eighteen months. Prolonged nursing certainly predisposes to poor digestive development and consequently to digestive disturbances in later childhood. Fischl, in Phaundler and Schlossman's Diseases of Children says that chronic disturbances of digestion in older children begin usually in infancy, dating from malnutrition, or due to residual weakness of digestion. The more frequent later dietetic errors appeared to be in the direction of sweets and starches. A few were possibly excessive milk drinkers, suggesting the type of intestinal toxæmia upon which Kerley lays so much stress. It is with some hesitancy that the incontinence in these cases is attributed to the effect of the diet upon the digestive organs and through them the production of toxæmia, since the diuretic effect of a milk diet might be considered in itself a sufficient cause. Possibly it would be more fair to include only those cases in which the finding of large amounts of indican in the urine justifies the diagnosis of a toxæmia of this nature.

Starch excesses are common, undoubtedly because of the ease with which starchy foods may be obtained; this is especially true of the cereals, crackers and bread. Excesses in the so-called uncooked cereals are especially common. Meat excesses were not frequent. Irregular feeding and between meals feeding apparently played a most important part.

Practically all the patients showed symptoms common to gastro-enterics, symptoms attributable to the diseased condition of the digestive tract including loss or perversion of the appetite, constipation, diarrhœa, and acute bilious upsets occurring at varying intervals, and colic-abdominal pains, were noted. The tongue showed as a rule, the grey, thin slimy coat of catarrhal conditions, the so-called geographical tongue of gastric catarrh also occurring in several instances. Again, symptoms due to the interference with digestion and assimilation of food including poor physical development, muscular weakness, tendency to colds, wasting and anaemia, were common. Profound or restless sleep, with or without night terrors, nervous symptoms usually attributed, by the laity at least, to worms, chorea, mental torpor, to which may be attributed the lack of brain control, rough and irritable skin and general muscular and joint pains, were among the symptoms apparently due to toxæmia. Still discusses the occurrence of enuresis in rheumatic children and says that he has noted the association sufficiently frequently to make him always watchful for rheumatism in the child with enuresis. He also says that the rheumatic child is peculiarly apt to be a nervous child, and that herein maybe the connection. It seems just to assume that both the nervousness and the rheumatism are manifestations of intestinal toxæmia. As other arguments in favor of the intestinal tract as the seat of the underlying cause,

may be suggested the frequent occurrences of enuresis after the acute catarrhal diseases and digestive upsets.

With the exception of Eustace Smith, who in his Wasting Diseases of Children, speaks of nocturnal incontinence as a not infrequent symptom of Mucus Disease, the writers of text books have apparently given comparatively little attention to the part played by the digestive tract in the production of enuresis, and to the possibilities of treatment directed toward the improvement of the digestive process. Dietetic treatment is advised, but apparently in most instances with the idea of changing the composition of the urine rather than increasing general muscular and nerve tone, and the prevention of toxæmia. Jacobi, however, speaks of a general anemia and muscular debility which indicates a diet carefully selected for its nutritiousness and digestibility, and Kerr of a malnourished state of the nerves increasing reflex irritability and decreasing inhibitory control. Sutherland, in his Treatment of Diseases of Children, says that in many cases of enuresis it will be found that the child has been systematically overfed or improperly fed, but attributes the trouble not so much to the material as to the quantity of the food, and West draws attention to the fact that in the majority of cases, so long as the affection is recent, a connection may be clearly traced between it and gastro-intestinal disorders, but aside from these few references most of the authors, in speaking of treatment, advise merely a simple, non-stimulating diet with limitation of the amount of nitrogenous food and sugar, and a light, dry supper with the avoidance of stimulants.

In the light of my experience such advice seems, at the most, inadequate, and there is some question as to the advisability of a dry supper which would tend to make the urine more concentrated. That concentration, however, is not a marked factor might be suggested by the frequent improvement during hot weather when more fluids are eliminated through other channels, the improvement in hot weather arguing in favor of the catarrhal conditions which are more prevalent during the cold season. In the British Medical Journal of 1906, Lewis advises ascertaining among other things whether or not intestinal asepsis is a prominent feature, and if so whether or not the urine passed at night is abnormally acid or decreased in quantity, of low specific gravity, etc. He says of this class of cases that they can be easily dealt with and cured by means of a proper diet.

In speaking of the digestive tract as a factor in the production of incontinence, I purposely omitted reflex irritation arising in the bowel. Fæcal masses of chronic constipation may act in this manner as may also the various intestinal worms. Still has found threadworms so frequently present that he thinks it is often wise,

even when their presence is denied, to give one dose of santonin with calomel to make this point certain. That a round worm in the bowel may act reflexly upon the mechanism of urination is evidenced by a case of my own in which the passage of a worm relieved a long standing suppression. But besides a reflex action both faecal masses and parasites undoubtedly produce local irritations productive of catarrhal conditions.

The belief then that the disturbances of digestive functions play an important role in the causation of enuresis other than through the production of changes in the urine is based upon the following facts brought out by the study of my series of cases.

The symptom occurs at an age when gastrointestinal disorders are most common, and productive of most nervous symptoms. The dietetic histories of the children showed invariably gross errors, principally excesses in starches and sweets. The incontinence practically always occurred along with other functional nervous disorders, or with local digestive symptoms, or with a poorly nourished state and anemia. The frequent occurrence of adenoids may, I think, be justly considered part of the digestive catarrh, and the relapses occurring during and after the catarrhal diseases, together with the relapses following grosser dietetic errors and during acute indigestion upsets must be considered incriminating.

The treatment then, based upon this theory as to causation, must be that of the gastrointestinal condition.

A definite number of meals daily, given with absolute regularity to establish a regular digestive habit, and separated by an interval long enough to ensure complete digestion and the establishment of an appetite.

Absolute abstinence from food between meals, nothing but water being allowed.

A mixed diet containing green vegetables to stimulate peristalsis, thereby insuring regularity of the bowels and the avoidance of stagnation, the factor in the production fermentation products. The diet should be based upon the history of particular excesses and upon a study of the bowel movements to determine what particular food stuffs are at fault.

Proper and thorough mastication.

The establishment of good hygiene.

Medical treatment is practically limited to the use (temporary only) of laxatives and intestinal antiseptics. Later, and only after a normal digestion is established, some easily assimilable preparation of iron may be administered to combat the anemia, and sedatives may be temporarily given early in the treatment to control the bladder.

Local irritations may of course be treated surgically.

A fair percentage of cures by this method has made me exceedingly enthusiastic.

Discussion.

DR. DEWITT H. SHERMAN, Buffalo: The principles elucidated by Dr. Vander Bogert's paper impressed me as striking at the root of the cause of nocturnal enuresis. A child with a comparatively stable nervous system may have adenoids, adherent prenuce, intestinal parasites, etc., and yet have good control of the sphincteres of its bladder.

Dr. Vander Bogert emphasizes the necessity of building up the general physical and nervous tone in order that general function may be improved that it in turn may withstand the deleterious effect of various reflex irritations, or food indiscretions. This effort as well as the removal of these various reflex influences should produce permanent improvement. But in some children there is a lack of mental stamina as well as physical and the mere attention to the physical does not produce the results desired.

While all possible reflex irritations are being removed and the general hygiene regulated and brought up to a high standard, some children still continue their bad habits.

To many of these I at first shyly resorted to the use of psychotherapy with startling results. After gaining the confidence of the child, the physician is the one to make the greatest mental impression. It may take time, may seem like hypnotism, but this suggestion often works wonders. But he may not need to be called upon if one of the parents has sufficient force of character to make the so-called "night suggestion" and do it well. It seems particularly adaptable to the high strung nervous, but obedient patient. I have been surprised at the number of my successes in this respect, and delighted at the permanence of the cure.

I agree with Dr. Vander Bogert that adenoids belong more to the class of catarrhs of the gastro-intestinal tracts and can't see how the administration of thyroid extract can be followed by any immediate startling effects. The improvement may come late but it is constitutional rather than due to any specific effect of the thyroid.

The doctor emphasizes from another viewpoint, another reason for the proper dietetic management of children.

DR. RUDOLPH DURYEA MOFFETT, New York City: It has been with much interest that I have listened to the paper of Dr. Vander Bogert. It seems to me that there are many cases of enuresis that have chronic intestinal indigestion, but this can only play its part as a causative factor in the causation of this symptom, such cases should be cared for and treated along their proper lines.

Some of the foreign investigators have called attention to the fact that many of these cases are of the high type of imbecile which only becomes well developed later in life.

There is also little doubt but that many of these children are of the neuropathic type, coming as they do from neuropathic fathers and mothers, and often suggestive treatment is of great service, so that many cases are cured in a short time. Hamburger has suggested, and has used in some cases of enuresis, the faradic current, one pole being placed over the sacrum and the other pole over the anterior part of the bladder, thus stimulating the nerve conduction tracts to the bladder. He seems to have had fair results with this treatment, and it seems well worth trying in the more difficult cases.

DR. CHARLES HERRMAN, New York City: Excepting a small percentage of cases associated with changes in the urine or changes in the genito-urinary tract, in the vast majority of the patients the enuresis represents a functional neurosis. This is borne out by the fact that many widely different methods of treatment have been successful in a certain number of patients; also by the fact which Dr. Sherman has cited that a rapid cure may sometimes be obtained by suggestion. As adenoid vegetations are present in about 20 per cent. of all children of the school age, it is not surprising that these should sometimes be associated with enuresis. As to the favorable results obtained by Williams with the thyroid treatment Dr. Herrman has not been so successful. The patients did not have a sub-normal temperature which Williams cites as an indication of thyroid insufficiency. A number of our cases of cretinism had enuresis. Under thyroid treatment the physical and mental condition showed marked improvement but the enuresis persisted. As most of the patients with enuresis show a neuropathic tendency it is not surprising that many should present digestive disturbances. The correction of these is certainly important as is the treatment of any abnormal condition in these patients. Anything which improves the general condition will have a favorable effect on the enuresis. In this way we may perhaps explain the improvement during the summer months. The child is free from the mental activities of school life, and lives the greater part of the time in the open air.

EXPERIENCES WITH DIRECT LARYNGOSCOPY, BRONCHOSCOPY AND OESOPHAGOSCOPY.*

By JOHN McCOY, M.D.,
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THE method of direct examination of the larynx, trachea, bronchi and œsophagus is of such comparatively recent date, and has been of such wonderful assistance in the diagnosis, treatment, alleviation and cure of many conditions of these parts, that the writer approaches this subject with enthusiasm, and hopes that this contribution may be the means of still further acquainting our

profession with a method that has added another brilliant chapter to Laryngology.

In a limited paper, such as this must be, there are many details which must necessarily be omitted. The writer will endeavor, therefore, as briefly as possible, to describe the method, and to detail some of the cases in which he has found this method useful.

Direct inspection of the larynx, trachea, bronchi and œsophagus is accomplished by means of straight metal tubes, varying in length from 5 to 21 inches, and in diameter from $\frac{1}{4}$ to $\frac{5}{8}$ inch. These hollow tubes are passed through the mouth directly to the part to be inspected, and the field is illuminated by a light thrown from the distal or proximal end of the tube. In the carrying out of this method the greatest aseptic and antiseptic precautions must be observed. If this precaution is not strictly adhered to, a severe bronchitis, gangrene of the lung or broncho-pneumonia may result. With the use of these instruments either a local or general anesthetic must be used. In very young children it may be practised, in some cases, without any anesthetic. Cocaine is particularly dangerous in very young children. In adults of a phlegmatic disposition, the entire operation may be accomplished with cocaine; in those of a sensitive or nervous disposition, a general anesthetic will be required.

The writer has employed this method mostly in treating conditions in the larynx, and would like to report the following interesting cases, in which the use of the direct method was indispensable. In the citation of cases to follow, pathological conditions alone are to be reported, as the citation of foreign bodies removed from these parts, has already been fully and frequently reported:

CASE I.—Laryngeal Papillomata. Thomas F., age 5 years, came to the clinic with the following history: Two years previously he began to talk hoarse; this continued to grow worse, and about six months before coming to the clinic, the child's respiration began to be embarrassed. On examination with the laryngeal mirror, a mass of papillomata could be seen extruding from the larynx. At this time, the child was suffering markedly from dyspnoea. The operation of removal by direct laryngoscopy, under chloroform anesthesia was advised, and was carried out the following day. The anesthetic was given with great difficulty on account of the almost complete obstruction of the larynx. However, the growths were removed. They seemed to involve mainly the whole right side of the larynx. After removal the child's respirations become practically normal. The child was watched and about four weeks later adenoids and tonsils were removed. About four weeks after this, the larynx was apparently nearly as much filled up with pa-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

pillomata as when first seen, and the child was dyspnoeic again. It was now decided to put the larynx at physiological rest by having the child wear a tracheal tube. Accordingly, a tracheotomy was done, and the papillomata removed from the child's larynx as thoroughly as possible. This has been followed by a relapse from the papillomatous growths, but the growths are now undergoing the fulguration treatment, by the direct method, once every two weeks. The child is still wearing the tracheal canula. The growths have shrunk markedly and I look for a complete disappearance of them in the near future. Without direct laryngoscopy, this child must certainly have undergone a thyrotomy, and, probably, several such, with, as we all know, the disheartening results attending the same.

CASE II.—Mr. B., age 20, came to my clinic with the history that for two months he had been talking with husky voice. He felt that his general condition was good, had no loss of weight, and looked healthy. On attempted inspection of his larynx, with the mirror, it was found impossible to see into the larynx because of the very short overhanging epiglottis. In this case, the direct method was resorted to in order to secure inspection of the larynx, and on examination by this method there was revealed an infiltration of the tissues around the right arytenoid and in the interarytenoid region. A section was removed from this infiltration, which was passed to the pathologist for examination. He reported that the infiltrate was a true tubercular infiltration. The lungs were then examined, but no focus of tuberculosis could be established. So here, we have a case of apparent primary involvement of the larynx, which would have been exceedingly difficult, if not well-nigh impossible, to cope with, but for the direct method of inspection.

CASE III.—A nun, age 35, was referred to me, with the history that for the past six months she had been having hemoptysis, sometimes raising quite a little blood. She had not lost weight, although was quite anemic. As the examination of her lungs proved negative, she was referred to me for direct inspection. On passing the tracheal tube, at a distance of about two to three inches below the vocal cords, there was seen a clump of enlarged veins in the tracheal mucous membrane, with a little clotted blood adherent to the membrane. This area was cauterized with 50 per cent. silver nitrate, and later, injections of oil into the trachea were given. The patient has never raised any blood since the first treatment.

CASE IV.—Mrs. M., age 40, was referred to me because for the past year she had been having breathing of an asthmatic type. The examination of her lungs, however, did not reveal true asthmatic breathing. Accordingly, she was examined by the direct method, and on reaching an area about one and a half inches below the vocal cords an infiltration of tissue in the posterior portion of the trachea was seen, with some

ulceration to the right side. It was deemed wise not to take a section of this infiltrate until the patient had had a Wasserman examination. The ulcer was treated with 4 per cent. silver nitrate, and the patient referred for the blood examination. The Wassermann was found to be negative. The patient's breathing, however, has improved so much since the first treatment, that she refuses to have another, saying that she is apparently getting better all the time, and prefers to wait until she sees some signs of going back. She is still under observation, and I think I may have the pleasure of reporting her in detail later on.

CASE V.—Mr. M. This case was seen in consultation at the New York Hospital. He gave the history of having had increasing difficulty in swallowing for two months, and also of an irritable cough, with expectoration of mucus. At the time that I saw him, it was impossible for him to swallow anything but a very small quantity of liquid, and occasionally, while swallowing this liquid, he would have a violent spell of coughing. The œsophagoscope was first passed, and about six inches from the larynx the tube met with obstruction, appeared to glide off to the right very easily, and would then be found in the bronchial tubes, as evidenced by the whistling noise of the inspired and expired air. A diagnosis of gumma was given, involving the lung and œsophagus, and a Wassermann test advised. The writer has been unable to secure further data on this case, as the patient was removed from the hospital several days later and I have been unable to trace him.

CASE VI.—Mr. O., age 45, was referred to me with the following history: Gradually increasing difficulty in swallowing, with loss of weight for the past three months. He was placed on the table for a direct inspection of his œsophagus. About seven inches down in the œsophagus an obstruction was met with, which seemed to be a firm, tender, non-ulcerating tumor. In this case also, it was decided not to remove a section from the tumor,* as there was no ulceration. It was thought best to refer the patient for a blood examination. The blood test was taken the next day, and proved negative Wassermann. The patient began to have pain in the supra- and infra-clavicular region, with tenderness, swelling and fever. There was no emphysema. This condition seemed to grow worse, and to develop into a purulent infiltrate of the mediastinal tissues, on both sides, and the patient passed away from exhaustion and sepsis about one week later.

An autopsy, in this case, was held and the entire region of the œsophagus and mediastinum very carefully examined. The œsophagus was found to have a large ulcerating carcinoma, about three inches long at its lower end. The upper end of this carcinoma closed off the

* The writer usually removes a section when there is ulceration, and in about ten cases has been enabled thereby to have an immediate diagnosis of carcinoma made.

oesophagus with cancer infiltration, which had not broken down. There was absolutely no sign of trauma in any part of the oesophagus, and the pathologist was absolutely at a loss to account for the mediastinal infection unless the carcinoma had spread to the lung from the oesophagus, and broken down into a bronchial tube, thus carrying infection with it.

CASE VII.—Mrs. M., age 42, was seen in consultation at the Harlem Hospital. She gave the following history: About three months ago she began to have difficulty in swallowing. This had increased until about two weeks previously, being unable to swallow even liquids. She was admitted to the Harlem Hospital, and a diagnosis of malignant growth of the oesophagus was made. A gastrostomy was performed. She was fed through the gastrostomy wound. The writer was asked to inspect the oesophagus, and accordingly, the oesophageal tube was passed. At a distance of about eight inches in the oesophagus a firm obstruction appeared to occlude the oesophagus, apparently pushing in the wall of the oesophagus from the right. There was no ulceration, and, therefore, a section was not taken. The patient, however, was immediately placed on iodide and mercury, with the result that within three weeks the oesophageal obstruction had entirely disappeared, so that the patient could readily eat solid food.

This case was undoubtedly a gumma of the mediastinum, and we were fortunate in diagnosing it before it had broken down and left its trail of scar tissue to forever occlude the oesophagus.

The writer has enjoyed very keenly the observation and treatment of these cases, and hopes that their recital may have interested you one-half as much as they have instructed him.

A PLEA FOR THE MORE FREQUENT USE OF LUMBAR PUNCTURE.*

By EDWARD J. WYNKOOP, M.D.,
SYRACUSE, N. Y.

IN asking your attention for a few moments on the subject of lumbar puncture, my reason for so doing, is to secure your co-operation in bringing this procedure into more common use.

It may seem to some of you that a paper of this character should not be presented at a section dealing more particularly with special work, but the diseases of infancy and childhood are so interwoven with all lines of medicine that the impetus gained here by a free discussion will stir us all in an effort to secure for this diagnostic and therapeutic agent, the support it needs.

It is my intention to refer in this paper, to other than true meningitis and to leave out the use of lumbar puncture in dealing with epi-

demic cerebro spinal meningitis and those inflammatory conditions caused by pneumococcus, influenza and tubercule bacillus.

There is as yet on the part of a large majority of the profession, a hesitancy about attempting to do a lumbar puncture and then frequently only as a last resort.

Evidently the thought of puncturing the spinal membranes seems a difficult feat and too often this important means of diagnosis and treatment is neglected.

It has been demonstrated by Quinke and others that puncturing the spinal canal in the lumbar region is not only comparatively safe, due to the separation of the ends of the cord and the condition of the vertebral arches and spinal membranes but fairly easy in the average case.

Care must be taken that the patient is in proper position with the spine well arched, to give as much space as possible between the vertebræ; then following the general rules laid down in the various works on this subject, the puncture is comparatively safe and easy.

No one now hesitates to thrust a needle through the chest wall to verify the presence of an inflammatory exudate and it seems to me every effort should be made to urge the adoption of lumbar puncture promptly and early when any meningeal irritation of any nature whatever is expected.

The procedure is as free from danger as a thoracic puncture and by many is regarded as safer.

During the past few years, it has been my good fortune to see some cases which presented symptoms of meningeal irritation sometimes occurring alone and sometimes accompanying some other disease, as for instance some of the various infectious diseases.

In these cases, while one or two symptoms of a true meningitis were lacking, yet there was sufficient evidence of enough irritation such as headache, muscular rigidity and often times vomiting, to make one feel that a diagnosis was better made after a lumbar puncture had been performed.

In every instance, lumbar puncture was advocated and in most of the cases, the request was granted.

In almost every case, the fluid withdrawn was clear, coming out usually under pressure, yet microscopically showed no pathological elements.

In almost every instance, the meningeal symptoms abated within a few hours and did not return.

While the majority of these cases developed some of the infectious diseases, as for instance, pneumonia, yet the meningeal symptoms cleared and stayed cleared after the puncture and the feeling of any uncertainty as to the possibility of a beginning true meningitis developing was at once relieved.

The amount of fluid withdrawn, depended somewhat on the amount of pressure present,

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

but always enough to secure a sufficient quantity for laboratory purposes.

It is in this class of cases that it seems to me that with the advent of any meningeal irritation a lumbar puncture should be done at once, not only for diagnostic measures but for therapeutic reasons as well.

Even if a general anæsthetic has to be given the result certainly warrants the slight risk entailed.

Many times, when called in these cases which show meningeal irritation occurring alone or with some intercurrent disease, you will feel confident that the meningeal symptoms may clear without any special treatment, but there is always an element of uncertainty and it is much better to know than to guess.

To those who have seen the atypical form of true meningitis develop insidiously and a realization of the true nature of the infection arrived at too late, know the regret that has followed the failure to do a lumbar puncture early and to know the true nature of the disease to be dealt with.

In many of the diseases of infancy and childhood, convulsions and nervous phenomena develop early, accompanied often times with enough meningeal irritation to make us wonder if a serious inflammation of the meninges is not developing.

It is in these cases and in the convulsive seizures of infancy without known cases that early lumbar puncture, it seems to me, should be advocated.

It is my firm conviction that meningeal irritation with or without convulsions, whether due to intestinal toxinemia, the advent of some infectious disease or from any cause whatever, should without doubt be treated by lumbar puncture.

Besides promptly relieving the brain pressure, it affords at once, an opportunity to see the clinical feature of the spinal fluid and to have it examined in the laboratory which is the only positive means of determining its true character.

It will probably always remain an enigma why some children show more meningeal irritation from trivial causes than others, but we know that certain types of children develop convulsions and show terrific nervous involvement at the least provocation.

It has always seemed to me that some of the cases of convulsive seizure, in early infancy, in which a cause was different or even impossible to determine, might be cleared up if lumbar puncture were attempted more often and the spinal fluid subjected to repeated examinations.

Practical experience shows that convulsions occurring late in an infectious disease, such as whooping cough, are frequently immediately relieved by lumbar puncture.

It is not my thought to discard drugs in treating this type of case but it has seemed

to me that the relief of brain pressure is easier, surer and safer in lumbar puncture than in any other measure.

To sum up. The points to be emphasized in particular are these:

1. Lumbar puncture is of great value from a diagnostic and therapeutic stand point in other than true meningitis cases.

2. It has not yet received the endorsement it should have and it is not used as often as it should be by the general practitioner.

3. It is the only prompt and sure way to secure a positive diagnosis in cases showing suspicious meningeal symptoms whether alone or accompanying some other disease.

4. Therapeutically by relieving the brain pressure, it is much more prompt and effective than drugs.

5. Many cases showing suspicious meningeal symptoms clear up almost at once after a lumbar puncture.

6. In the treatment of convulsions from any cause, it is a remedy that is of great value.

7. Its technic is simple and it should be promptly and easily done by the general practitioner.

Discussion.

DR. WALTER LESTER CARR, New York City: Lumbar puncture is now so firmly established that it is used, especially in hospital work, more often than paracentesis of the chest and abdomen. The conditions for which lumbar puncture is performed are: (1) When there are evidences of pressure symptoms occasioned by changes in the brain or spinal cord. (2) When it is deemed advisable to study the character of the fluid in the spinal canal so as to detect pathological changes, and (3) To inject any substance for therapeutic purposes.

In meningococcus meningitis drainage by lumbar puncture relieves pressure and symptoms, even if antitoxin has been administered.

Lumbar puncture should be done more than it is in children suffering from the effects of cerebral concussion and other brain injuries.

These uses of lumbar puncture should be extended in private practice for with ordinary surgical cleanliness there is no danger to the patient. Local or general anesthesia is not required in infancy, but in childhood a local anesthetic may be applied or ethyl chloride inhaled. The physical, chemical, cytological and bacteriological characters of the spinal fluid may be of supreme value, and symptoms designated as meningism (e.g. pneumonia) may be classified at their true value.

A more careful routine in lumbar puncture work will follow a knowledge of the pressure of the spinal fluid as shown by Wolfsohn's* or a similar apparatus. *(The Journal of the American Medical Association, Vol. LX, No. 16, Page 1204).

REPORT OF A CASE OF DACRYOCYSTITIS PRESENTING SEVERAL COMPLICATIONS, INCLUDING ORBITAL ABSCESS AND OPTIC NEURITIS.*

By ALBERT C. SNELL, M.D.,
ROCHESTER, N. Y.

THE case which I wish to bring to your attention is that of a man 65 years of age. He first consulted me in November, 1908, on account of a persistent and troublesome condition of the left tear sac.

The previous history of the sac trouble dates back several years. He states that on several occasions there has been a small tumor-like swelling which usually he had been able to empty by pressure, and on two occasions an abscess had formed which his family physician had opened and treated. Also several years previous to this first visit he had had a number of treatments by probing; but during the last two years he had entirely neglected the eye except for the application of simple home remedies.

At the time of the first consultation there was marked swelling over the sac which could be emptied through the unslit canaliculus by continued pressure and manipulation. The material discharged was apparently composed, for the most part, of mucous and tears, and was fairly clear in color. The amount discharged was large, showing a large sac. I found the sac absolutely impermeable to any probe and therefore advised that it be extirpated.

Patient desired to take the advice under consideration and in the interval I advised the use of antiseptics and instructed him to keep the sac empty by pressing it with his finger. I did not see him again for six weeks, at which time the patient returned and demonstrated a peculiar phenomenon. Whenever he pressed on the eyeball (pressing in and backward), a large quantity of muco-pus was discharged through a fistula which had opened over the lower end of the sac. After washing out the sac, pressure on the globe continued to cause large quantities of pus to be discharged. The fistula was enlarged, and by means of a probe it was demonstrated that there was an opening backward between the sac and the orbital cavity through the lachrymal septum. The probe readily passed through the outer wall of the sac and entered the orbit at least two and one-half inches from the skin surface. I used a large probe and was careful not to use any force.

At this time there was a moderate amount of swelling of the lids and some inflammatory infiltration of the skin around the fistulous opening, and of the skin below the lower lid. There was no limitation of motion; vision was perfectly normal; there were no fundus changes, and patient was practically free from pain. The pus was discharging very freely. I decided,

therefore, simply to wash out the cavity with antiseptics. This treatment was followed daily for six weeks with only a little abatement in the amount of discharge. At the end of this period I first noticed some oedema around the nerve head and that the central retinal veins were becoming enlarged and tortuous. I had also discovered some roughness of the nasal bone. For these reasons I again urged the necessity for an immediate operation.

A few weeks later this was consented to and I attempted an extirpation of the sac. In the meantime the optic neuritis, or the retinal phlebitis, which at first this seemed to be, had become much more marked, veins being at least twice their normal size. Extreme difficulty was encountered in dissecting down on the sac as landmarks were badly obliterated, the sac itself being extremely fragile and hemorrhages being difficult to control. A small area of necrotic bone was found at the nasal side of the entrance to the bony lachrymal canal. This was thoroughly curetted and a passage forced into the nose through the lachrymal canal. I could clearly see a window 10 to 15 mm. in diameter lying in the outer wall of the sac, opening into the orbital fat. The mucous membrane of the sac was carefully looked for and removed. And as an additional precaution, the upper end of the sac was cauterized with carbolic acid, and the operative field flushed with bichloride solution. The wound was closed with two stitches above, but the lower end of the incision was left open for drainage. For a few weeks a copious discharge continued, gradually abating. The discharge caused by the pressure on the eyeball also continued for a few weeks after the extirpation, but entirely ceased at the end of two months.

Active granulation caused some difficulty in keeping the fistula open and after another month it did close, but mucous and tears soon collected in the position of the sac. This was emptied through the canaliculus by gentle pressure over the sac.

Since the amount of discharge did not materially lessen after a few weeks more, and as I thought that all the sac had been removed, I was led to believe that possibly tears and mucus were entering the old sac cavity through the canaliculi. I then attempted to destroy the canaliculi by cauterizing them with carbolic acid. This succeeded with the upper one but had no effect on the lower. Two weeks later I repeated the process on the lower canaliculus with actual cautery and at the same time attempted to place a conjunctival flap over the opening. This utterly failed. Then I was convinced that some pieces of the mucous membrane of the sac must have been overlooked and that this was the cause of the secretion of mucus. Carefully dissecting down on a probe which was held in the pouch after passing it through the canaliculus, I opened a pocket just under the tendo-oculi which seemed to have a perfect mucous lining.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

This was then carefully dissected out. The wound promptly healed and the patient's sac-toubles were at last ended, eleven months after the beginning of my treatment. Vision in the left eye was now 20-200. The vision gradually improved and on September 18th, 1912, four years later, it was 20-100. The optic nerve was at this date somewhat pale, the edges lacked definition and some lymphatic streaks surround it. At no time did this patient have any rise in temperature and he was not at any time confined to the house.

This case illustrates several points of interest and one very unusual complication. It illustrates the difficulty of finding and completely removing all mucous membrane in order to prevent the continued secretion therefrom with its associated complications. The necrosis and the entire history of this case illustrates and points out the dangers of neglecting a bad dacryocystitis. I find that the orbital abscess which complicated this case by direct extension through the lachrymal septum is a very unusual one. I have been able to find in the literature of the subject only a few direct references of similar cases.

Fuchs (3d edition, page 708), says: "Orbital phlegmons may develop in dacryocystitis acuta, when, as exceptionally happens, perforation of the wall of the lachrymal sac takes place backward instead of forward."

E. C. Ellett (*Trans. Sec. on Ophth., A. M. A., 1904*), reports one case of septic thrombosis following operation of the lachrymal sac.

M. Rus (*Wiener, med. Wehnshe, 1908, No. 4*) reports a case of phlegmon of the orbit from dacryocystitis.

Morax (*Soc. d'opht. de Paris, p. 61, 1909*) states: "Injection into a sac with an impermeable duct was followed by a benign phlegmon of the orbit." In view of my experience with this case I believe that the constant pressing of the sac by means of the finger in order to empty its contents, a procedure commonly practiced by the laymen at least, is bad practice and bad advice. I feel that undoubtedly this procedure in my case was directly responsible for the rupture of the sac backwards, and the resulting orbital abscess. Previous to this experience when probing was unsuccessful and patient refused to have the sac extirpated, I have prescribed antiseptic lotions and have instructed them to empty the sac by pressure. But since I have more urgently advised extirpation and have warned patients of the possible danger from making too forcible pressure over the sac, when it is found to be impermeable.

The rarity of orbital complications, resulting from dacryocystitis demonstrates that the lachrymal septum is a very firm and resisting membrane. But one should bear in mind its possible rupture by operation or by manipulation and the consequent danger of phlegmon with loss of vision or even loss of life.

Discussion.

DR. ARTHUR J. BEDELL, Albany.—The case that Dr. Snell has reported is one of unusual interest. I am sure that all of us who are in the habit of directing the patient who suffers from distension of the lachrymal sac to press on the swelling before using drugs locally should for that reason carefully consider the danger to which we expose the patient.

Personally, I have never seen a case representing the same complications, but know that there are many reports of optic atrophy, optic neuritis and orbital abscess following chronic dacryocystitis, including:

Fuchs (*Centralblatt f. Augenheilk, t. VL, August, 1880*). Chronic dacryocystitis, abscess of the eye; neuritis through stasis; cure.

Truc (*Annales d'oculistique, 1900, p. 96*). Orbital abscess secondary to an old purulent dacryocystitis, acute optic atrophy, rapid and complete.

Pointot (*Clinique ophtalmologique, 10 fev., 1897*). Chronic dacryocystitis; acute edema of the orbit; optic atrophy.

Bistis (*Societe Imperale de Medicine de Constantinople, Annales d'oculistique, t. CIX, p. 120*). Chronic dacryocystitis, acute edema, abscess of the orbit, optic atrophy.

Grunberg (*Centralblatt, f. prakt., Augenheilk, 1892*). Purulent dacryocystitis following chronic dacryocystitis; abscess of the orbit; optic nerve atrophy.

De Graeffe (*Klinische Monasblatter, f. Augenheilk, analyse par de Wecker, Annales d'oculistique, 1863, t. XLIX, p. 247*). Chronic dacryocystitis; injection (of the sac); orbital abscess, optic neuritis and atrophy.

De Wecker (*Annales d'oculistique, 1863, t. XLIX, p. 247 en note*). Chronic dacryocystitis; injection (with penetration of fluid into the orbit); immediate evisceration; no orbital accident.

Cabbannes et Ulry (*Bulletin de la Societe d'anatomie et de Physiologie de Bordeaux, t. XVLLL, 1897, p. 140*). Abscess of the orbit; choked disc; neuro-paralytic keratitis; painful anæsthesia of the eye.

Valude (*Bull. Soc. d'opht. de Paris, 1895, t. VIII, p. 60*). Catheterization of the lachrymal sac, inflammation of the orbit a few days afterwards with edema of the pupil, neuritis followed by optic atrophy.

Professor Badal (inedite). Chronic dacryocystitis, incision of the inferior lachrymal canal, catheterization, abscess of the orbit, optic atrophy.

Truc (*Annales d'oculistique, 1900, p. 97*). Right sided purulent dacryocystitis; large incision, curettage, catheterization, boric acid injection of the lachrymal ducts; abscess of the orbit, optic neuritis and complete atrophy. Lagophthalmic ulcer cured by medium of blepharoplastic flap or band.

Aubaret (*Societe d'anatomie et Physiologie de Bordeaux—la clinique ophtalmologique de Bordeaux, Prof. Badal, June 1902, n. 12*). Abscess

of the sac, diplopia, paralysis of the superior oblique, optic atrophy through stasis.

Antonelli (*Societe d'ophtalmologie de Paris*. Seance du 6 fevrier, 1900). Ethmoidal frontal sinusitis following orbital cellulitis caused by dacryocystitis.

Leplat (*Bull. Soc. d'opht. de Paris*, Nov. 7, 1894, t. VII, p. 129, et VIII, No. 1, p. 6064). A fatal case of meningitis occurring after a probing followed by an injection of the lachrymal sac.

Mouzels (Bordeaux, 1903). A clinical study of the orbital complications of dacryocystitis.

The close association between the lachrymal apparatus and nasal disturbances is now thoroughly understood by all who lay claim to be competent to treat eye diseases, and so the treatment of chronic dacryocystitis must be directed toward both ocular manifestations and nasal abnormalities.

It has always been my practice to first do a Bowman operation, follow it by a Ziegler rapid dilatation and in some cases insert a grooved lead style, but in the condition described by Dr. Snell there is absolutely no question but that the radical removal of the sac was indicated at once. It is unfortunate, however, that many patients will not submit to such an operation, preferring the long continued discomfort as well as the attendant dangers.

I thank Dr. Snell for reporting his case at this time and am sure that all who read his paper will be more careful in the treatment of such cases.

DR. W. B. WEIDLER, New York City: I think we are very fortunate to have such a clear and full report of such an unusual condition. A short search of the literature has shown that there are very few of such cases on record. Dr. Snell and his patient are both to be congratulated on the outcome of a very dangerous affection of the orbital tissues. It seems to me, however, that this case was more truly one of orbital cellulitis than orbital abscess. Apropos of this case I wish to report an accident which occurred in my own practise which did not have as happy an ending as that of the Dr. Snell's.

ORBITAL CELLULITIS.

Case Report.—Mr. J. B., age 46, white, American farmer, had lachrymal obstruction for past year or more with a rather profuse discharge, and this condition did not improve under treatment. He had been treated in the usual way by means of the lachrymal probes and antiseptic eye washes, and when I saw him I advised the use of a lead style and this was inserted. The style had been in the canal about a week and during my absence from the city the eye began to give trouble, and another doctor had been called in who diagnosed the condition as panophthalmitis. When I saw the case there was no doubt but that an orbital cellulitis had been set up with all of the typical symptoms present.

There was swelling and redness of the lids, slight proptosis, motility of the ball much reduced, pain and ophthalmoscopic examination of the fundus revealed little or no neuritis, but rather a marked pallor of the optic nerve with no other changes observed. No light perception present. The usual treatment was followed and the external symptoms all subsided after two or three weeks, but the vision never returned.

On questioning the patient as to the possibility of his having infected the eye, he told me that he had been fingering the style and had tried to remove it. The only way in which I could explain the occurrence of the cellulitis was a direct infection from his fingers and this may have traveled back into the orbital cellular tissues along the line of a false passage that may have existed from a previous probing of the lachrymal canal.

I have had the lachrymal probe pass into the orbital tissues more than once in my attempting to dilate the lachrymal canal, and have marveled that no inflammatory reaction followed the accident, as orbital cellulitis so often follows penetrating wounds in this locality. I have not been able to find any other case reported that is similar to this one of mine, and I think we must all agree with Dr. Snell that orbital cellulitis following dacryocystitis is an extremely rare condition. Most authorities in speaking of the causes of orbital cellulitis always give this as the rarest factor.

THE TECHNIQUE OF THE LABYRINTH OPERATION.*

By EDWARD BRADFORD DENCH, M.D.,
NEW YORK CITY.

THE various methods of opening the labyrinth are so well known that it is hardly necessary for me to make very extensive remarks on this subject. It has occurred to me, however, that certain methods may be applicable to certain forms of labyrinthine disease, and for this reason, I wish to call your attention for a few moments to the various methods which may be employed for opening the labyrinth for the relief of various labyrinthine conditions.

We have to deal with: 1st, limited suppuration of the labyrinth; 2d, diffuse suppuration of the labyrinth, with extension to the meninges, producing a meningitis, and, 3d, with certain non-suppurative conditions which may demand labyrinthine operation. I refer to those labyrinthine lesions the prominent symptom of which is vertigo. Manifestly, the technique which might be required for the relief of a labyrinthine suppuration, the extension of which would terminate in meningitis, would be quite different from that required either in a case of circumscribed labyrinthitis or in a case where the labyrinthine lesion had never been suppura-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

tive, but had been a non-suppurative condition from the onset.

I shall describe, therefore, various methods of entering the labyrinth for the relief of certain pathological conditions:

First, a method for entering the labyrinth in cases of suppurative labyrinthitis, with probable extension to the meninges.

Second, methods of dealing with circumscribed areas of labyrinthine caries, in which no general symptoms have been present.

Third, a method of dealing with a diffuse labyrinthitis, with no symptoms of extension to the meninges.

Fourth, methods of opening the labyrinth in cases of chronic non-suppurative inflammation of the labyrinth, where the operation is performed simply for the relief of vertigo, or possibly for the combined symptoms of vertigo and tinnitus.

For the first condition—that is, suppurative labyrinthitis, with symptoms of beginning meningitis—the best operation available at the present time is the one devised by Neumann. In this procedure, the complete radical operation is first performed, and the facial ridge lowered to its extreme limit. The dura in the middle cranial fossa is then exposed over the tympanic and tympanoaural roof, and the lateral sinus is exposed from a point just above the knee to as near the jugular bulb as possible. This leaves us a triangle, commonly known as Trautman's triangle, bounded behind by the lateral sinus, above by the dura of the middle cranial fossa, and anteriorly by the ridge of the facial nerve. The dura is next carefully separated from the overlying bone in front of the sinus by means of a director, and a protector, preferably the blade of a medium-sized curette, inserted between the dura and the bone. The bone overlying the curette is next carefully removed by means of the gouge and mallet, the strokes of the mallet being directed downward against the protector so as to prevent injury of the underlying dura. This procedure is carried regularly forward toward the facial ridge until, first, the two limbs of the posterior semicircular canal are opened; next, three openings appear representing the two limbs of the posterior semicircular and a transverse section of the horizontal semicircular canal. The removal of bone is gradually continued forward towards the facial ridge until one of the openings of the posterior semicircular canal becomes an elongated slit. This shows the section of the *ductus communis* between the superior crus of the posterior semicircular and the corresponding crus of the superior semicircular canal. A fine probe is next inserted into the cross section of the canal and carried into the vestibule. The openings of the cross section of the canal are then enlarged in the direction of the vestibule until free vestibular drainage is obtained,—that is, until the ordinary probe will enter the vestibule. This drains the static por-

tion of the labyrinth. The auditory portion of the labyrinth is easily drained by removing the thin layer of bone between the oval and round windows by means of a small gouge. This operation is of use when a suppurative meningitis, resulting from a suppurative labyrinthitis, seems imminent. The removal of bone should be continued below the facial ridge until the auditory nerve at the internal auditory meatus is reached. The incision of the dura in the immediate neighborhood of the internal auditory meatus will drain the primary focus of infection, and if the operation is performed early enough, may avert a fatal meningitis.

Unfortunately, while theoretically correct, the number of cures reported as the result of this operation are very few. In my own experience the operation has been devoid of value, as far as averting meningitis is concerned. As a method of draining a rapidly advancing purulent labyrinthitis, the method is of great value.

In cases of circumscribed labyrinthitis, which are occasionally found at the time of the radical operation—that is, where a small carious area has been found in one of the semicircular canals, usually the horizontal, and in which no labyrinthine symptoms have been present, or in which the only symptom has been the fistula symptom—it has been my practice to simply curette the diseased area in the horizontal semicircular canal, so as to remove all diseased bone, but not to open the canal so widely as to destroy completely the natural barrier which nature has erected for the preservation of the life of the patient. Such a localized curettement of a semicircular canal has been followed, in my experience, by absolutely no symptoms, and these cases have invariably terminated favorably. It has been my practice to carry a separate strip of iodoform gauze down upon the curetted area, in order to block this off as much as possible from the general radical cavity, so as to prevent subsequent infection of the labyrinth from a radical cavity. In one case of this character the curettement was extended so that the probe entered the vestibule through the external semicircular canal. In this instance, the entire tympanic cavity was covered by an epithelial graft as well as the posterior mastoid cavity, and the gauze packing was brought out between these two grafts. This case made a perfect recovery, with no labyrinthine symptoms.

The method which I have practised, in draining cases of diffuse labyrinthitis, with no symptoms of extension to the meninges, is perhaps the simplest procedure. This consists in, first, the performance of the ordinary radical operation, with lowering of the facial ridge to its extreme limit. Next, the horizontal semicircular canal is opened at its most prominent portion, and a probe inserted into its lumen. By chiseling downward and slightly backward, so as to avoid the facial

nerve, the vestibule may be entered. Drainage of the cochlea is performed in exactly the same manner as described in the previous operation, namely, by the removal of the thin lip of bone separating the oval and round windows. This, of course, opens the first and second turns of the cochlea.

Two other methods of entering the labyrinth have been attempted in work upon the cadaver, for the purpose of finding out whether, in cases where the static labyrinth might require operation for the relief of vertigo in non-suppurative cases,—a simpler operation is not available. In these cases we are operating in a practically sterile field, and unless the same is infected at the time of operation, or unless, as might happen, the area of operation is infected through the Eustachian tube, the conduct of the procedure should be possible as a thoroughly aseptic operation. It is perfectly possible to open the vestibule thoroughly below and behind the prominence of the horizontal semicircular canal, without performing the radical operation. The procedure is rather difficult and the field of operation contracted. I have never performed the operation upon the living subject, but from work done upon the cadaver, I believe that the vestibule can be opened and thoroughly curetted in this way. This procedure should be of value in cases of aural vertigo which resist all other methods of treatment.

Another means of entering the labyrinth, which has appealed to me in experimental work, is that of entering the vestibule through its superior surface. In this operation, the horizontal semicircular canal is exposed as the result of a complete mastoid operation. The mastoid operation should be continued so as to thoroughly expose the zygomatic cells, in this way giving a broad exposure to the tympano-antral roof. Such an exposure is necessary for the perfect conduct of the operation. The dura is next exposed in the middle cranial fossa by the removal of the tympano-antral roof. The bone covering the dura is next removed directly inward until the prominence of the superior semicircular canal appears. This eminence is easily demonstrable if the dura is carefully raised from the surface of the petrous pyramid by means of a thin retractor. If, now, the gouge is applied over the prominence of the horizontal semicircular canal and the superior surface of the petrous pyramid removed,—that is, if the superior wall of the horizontal semicircular canal be removed, and this removal is continued along the superior surface of the petrous pyramid, the superior semicircular canal will be opened. Removal of the fragment of bone which comprises the roof of the superior semicircular canal will open the roof of the vestibule. The use of the curette in this region will then enable the operator to

thoroughly destroy the canals, and the terminal filaments of the auditory nerve lying in the superior and horizontal canals, as well as in the vestibule. Similarly, the posterior canal may be thoroughly extirpated along the lines already laid down in the Neumann operation, without the performance of the radical operation, that is, leaving the tympanic contents intact.

This operation appeals to me as possibly the ideal one in dealing with cases of aural vertigo, due to non-suppurative labyrinthine lesion. I have not performed the operation upon the living subject, but its performance upon the cadaver is so simple as to recommend it in cases where we are operating in an aseptic field. Such an operation thoroughly destroys the contents of the horizontal canal, the superior canal and the vestibule, and should be the ideal operation in cases of this character. Moreover, this operation can be performed without a preliminary radical operation. In other words, this can be accomplished through the ordinary mastoid operative field if the operation is made to include the zygomatic cells, without taking down the posterior wall of the external auditory canal, that is, without the performance of the ordinary radical operation.

These last two procedures, naturally, do not permit of any interference with the auditory portion of the labyrinth.

If the cochlea is to be opened, it is imperative, in most cases, that the complete radical operation be done in order that the operator may obtain a perfect view of the promontory and to enable him to remove the bony wall of the first, and a portion of the second turn of the cochlea by taking down the bridge of bone which separates the oval and round windows. Such an interference with the cochlea would not be necessary in cases suffering simply from vertiginous symptoms.

I believe we are about to arrive at a point where labyrinthine exploration will be a procedure of election in certain cases of impairment of hearing, progressive in type and involving the labyrinth. This remark is more in the nature of prophecy than along the lines of clinical experience, but I sincerely hope that at some future meeting I may have something to say regarding procedures of this character, having for their object improvement of impaired hearing in cases which have otherwise resisted all efforts on the part of the surgeon to improve the condition.

Discussion.

DR. ARTHUR B. DUEL, New York City, said that practically speaking there is little difficulty in making a diagnosis of either acute or latent labyrinthitis with our present enlightenment on the subject.

The use of a noise apparatus to exclude the opposite ear in testing the auditory function, and

the employment of caloric tests in the investigation of the vestibular function, have made it possible to accurately measure the extent, and locate the position of labyrinthine lesions.

The question of when to operate on a case of suppurative labyrinthitis, and what method to employ, is still, however, a mooted one, and has given rise to widely different opinions.

Laying aside for the moment the question of chronic (latent) cases, let us consider when an acute case should be operated, and what kind of an operation should be done.

When a labyrinth is invaded by an inflammatory process, a tremendous shock occurs owing to the upset of the function of equilibrium and hearing.

The first effort of nature, and in the majority of cases, a successful one, is to shut the communication of the labyrinth with the cranium through the aqueducts from the cochlea and vestibule. These barriers once erected, if not interfered with, protect the patient from meningitis.

In my opinion to do anything which would in the least degree tend to interfere with the establishment of these barriers is gross mismanagement.

The rational plan is to promote perfect rest in bed, and to lessen the chance of rupture of these barriers from the violent vomiting, by large doses of bromide per rectum.

You may ask then, when would you operate on an acute case of labyrinthitis? And I would answer, "Never!" Whenever I operate upon a case suffering from acute labyrinthitis, I operate not for labyrinthitis, but for a *localized meningitis*, which has occurred because nature has not succeeded, with all the aid I can supply, in preventing an extension to the meninges.

But what symptom would lead one to suspect this unfortunate occurrence had taken place? Well, certainly neither temperature nor headaches nor rapid pulse, which are the symptoms on which the Vienna school would have us operate. I have seen several cases with all these symptoms which recovered completely without any operation on the labyrinth.

With these symptoms, however, plus an examination of the spinal fluid showing a beginning meningitis, one is forced to operate.

This leads us to the question of what kind of an operation. As I said before we are operating not for labyrinthitis but for a localized meningitis, and consequently any operation which falls short of uncovering this area of dura and incising it for localized drainage will fail. The dura must be uncovered from the sigmoid sinus to the internal auditory meatus, and incised. Now as to the method of doing this. The operation to be most efficacious (in my opinion) must be accomplished from start to finish without concussion. The hammer or mallet should play no part in the process, and the dense bone should be removed as carefully as one would dig a hole

through an egg shell, trying to avoid a rupture of the delicate membrane within. The hammer and chisel may be useful in the morgue where rapid work enables one to accomplish more anatomical study in a short time; but to conserve the interest of one's patient on the operating table, avoiding concussion by the use of rongeurs, hand gouges, drills, and curettes, is the wisest plan. This applies to operations on chronic (latent) cases as well. I have not time to take up the question of operative indications in chronic cases; but granting that it is indicated in a certain case I believe that one should be as careful to avoid exposure of dura here, as he would be to expose it in the acute case. The object of the operation here, is to afford adequate drainage without breaking down the barriers which nature has long before erected for the protection of the meninges.

DR. DENCH, (in closing the Discussion): I feel deeply grateful to the gentlemen who have taken part in the discussion.

Regarding the remarks of Doctor Richards, as to the danger of wounding the dura in the cerebellar fossa, I am inclined to think that perhaps Doctor Richards has laid a little too much stress upon this accident. I have never had an accidental wound of the dura in the cerebellar fossa during the labyrinth operation, and believe, if the dura is carefully separated, step by step from the posterior surface of the petrous pyramid, that such a wound is not likely to occur. It must be remembered, moreover, that the operation which exposes the dura in the cerebellar fossa, is recommended only in those cases in which the symptoms of beginning meningitis are imminent; consequently, free drainage in this region is advisable. Doctor Richards is a careful and experienced operator, and if this accident has happened to him, it may undoubtedly happen to me at no late day. I am inclined to think, however, that he has slightly exaggerated the danger which may follow a traumatism of this kind.

ECONOMIC AND SOCIAL ASPECT OF DEAFNESS.*

By HAROLD HAYS, A.M., M.D.,
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THE social and economic importance of total or partial loss of hearing has not received the attention it justly deserves. It is one of the inconsistencies of mankind that although such an affliction as deafness has been prevalent as long as the world itself, very little has been done to alleviate or cure and less has been done to adjust the economic ratio which has occurred as a result of the loss of this special sense. Institutes for the totally deaf are almost as common as institutes for the totally blind, and I am glad to say that some progress is being made in teaching children thus afflicted to lead useful

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

lives. But what is being done for the partially deaf, that vast multitude who are otherwise physically perfect, who are willing to work, whose hearing is gradually getting worse and worse and who have lost lucrative positions because their diminution in hearing is an inconvenience to others? The faculties of the people are as keen as ever, their muscles are as strong as ever, their intellects are perhaps keener than they were before and yet they are dropped from the working force, not because they are not as capable as before, but because their affliction makes it inconvenient for their employer. Is not their distress great enough without our adding to their burden by refusing them a living?

Our scientific and medical knowledge has increased to the stage where the blind can see and the lame can walk. It has not increased to the stage where the deaf can hear. In the first two instances the diseased condition can be arrested; in the latter the disease is progressive. The hard of sight can wear glasses and yet see, cataracts and visual opacities can be removed and the unfortunate can still live and work without being considered a curiosity. The lame man can be made to walk by the use of various appliances and he can cover his infirmity enough to become a useful citizen. But what has been done and what can be done for the man who is gradually losing his hearing? Mechanical appliances are not yet perfected to a stage where a working man can wear one without being pointed out as a curiosity by those who see him; and other measures for the relief of deafness are far from perfect, particularly so in our large cities where patients are so little under our control and where the sanitary conditions are such that no proper opportunity is afforded for the alleviation of the causative factor of deafness.

In pursuing a subject of this kind, some division must be made between those who are totally deaf and who have been so since birth or early childhood, and those who are partially deaf and have become so since adolescence. Many things have been done for the former class; and as little has been done for the latter class. In the City of New York we have at least two large institutions for the care of deaf mutes. The institutions are filled to capacity and are doing a great work. Besides these we have a number of private institutions such as the Wright and Reno-Margulies Schools. Children who are taken into these places learn lip-reading at an early age and are thus taught to speak, the result being that they become very useful citizens and have an earning capacity which compares favorably with their more fortunate brethren. Yet in an inspection of the public schools, we find that there are many backward children whose mentality would be as great as others if they could only hear. The condition often goes unrecognized for a great length of time. Helen MacMurty, of Toronto, Canada, writing on the subject of the

deaf child in the Medical Review of Reviews, says: "The greatest mistake ever made about children that cannot hear was to say and think that, therefore, they could not speak. The deaf baby gurgles and coos and makes sounds just like a hearing baby. But the moment the family and the friends know that the baby does not hear, they take it for granted that the baby will not speak either. What they should say is, 'This baby must be taught to speak by lip-reading, and we must begin right away. We shall need an expert teacher, or a nursery school, or both, to help us.' Then it will not be as it now is that the congenitally deaf child enters school at seven or eight years of age, no further on than a child of eighteen months or two years, because he has not been taught to speak."

DEAFNESS FROM DISEASE.

It is thought that about half the cases of deafness are congenital, and the other half are caused by meningitis, scarlet fever, measles, otitis media chronica, and adenoids. Every one of these causes is exceedingly important, especially the last, because it can and should be removed entirely. Discharging ears, with the advent of medical inspection will some day, it is hoped, be much less frequently found than now. Meantime, careful daily treatment for discharging ears must somehow be assured.

Like the congenitally deaf, children deaf from disease may also be classified as

First, slightly deaf (front-seat scholars).

Second, semi-deaf (smaller classes with specially trained teachers and lip-reading, if possible).

Third, very deaf (special classes, lip-reading absolutely necessary).

REMOVAL FROM HOME.

No deaf child should be removed from home because of deafness. The mentally defective child, whether deaf or not, must be placed under permanent care, for his own sake and the sake of the community, but deaf children who are not mentally defective should reside in their own homes and associate with hearing people as much as possible.

Lip-reading is the salvation of the deaf. There are a few persons who cannot learn lip-reading, and they must use a sign language, which is a very inferior means of communication.

In regulating the economic problem of total deafness, we must first examine into those basic causes which are at work in infancy and early childhood. The cases fall into two large classes—those who are born deaf and those who become deaf as a result of infection or associated pathological conditions.

THOSE WHO ARE BORN DEAF.

Many children of otherwise healthy parents are born deaf. Such a calamity cannot be foreseen and we have no preventive such as we have for ophthalmia neonatorum, an infective process,

yet the majority of deaf mutes are the children of a parent or parents who are deaf. As J. Hudson Makuen says: *"Congenital deafness, and to a great extent also acquired deafness, may best be prevented by a more careful selection of parents for our children; or, in other words, by a stricter application of the principles of eugenics to this condition. In view of the fact that about 50 per cent. of congenital deafness is the direct product of consanguineous and deaf mute marriages, is it not time that something in the way of legislation should be done about it?"

THOSE WHO ACQUIRE DEAFNESS IN EARLY CHILDHOOD.

This class of cases acquire their deafness as a result of infection or faulty ventilation of the tympanic cavities. The majority of these cases can be arrested and cured if they are properly treated at the onset of their troubles. Where an infection occurs enough notice is taken, as a rule, to warrant investigation, and I am glad to say that the recognition of the seriousness of an ear discharge idiopathically or after an infectious or contagious disease has become so common that the parents insist upon some form of treatment. However, these form only about half the cases; and the other half are the ones that more frequently result in a permanent impairment of hearing.

Ever since Wilhelm Meyer in 1867 discovered the presence of pathological tissue in the nasopharynx, afterward called adenoids, which interfered with proper nasal breathing, it has been pretty definitely ascertained that any impediment to normal ventilation of the middle ear, in other words, anything which has a tendency to interfere with the proper opening and closing of the Eustachian tube, will cause alterations in the middle ear which eventually will result in deafness. Such pathological conditions "are the predisposing causes of ear disease and deafness, and their *timely* removal is an important measure for the prevention of the serious ear complications accompanying the infectious diseases of childhood." (*Makuen*).

The instruction of the very deaf or deaf mute child is an exceedingly important matter. I shall again quote the words of Dr. Makuen.*

"The very deaf child differs from the normal child only in respect to his deafness and consequent incapacity for the acquirement of speech without especial assistance. In the untaught deaf mute child, we have a striking illustration of the fact that speech is man's most distinguishing characteristic. The deaf child more than any of the human species resembles the young of the lower animals. Possessing as he does by inheritance every potentiality for mental and physical development, he is nevertheless to all outward appearances just a little animal.

Taking these things into consideration, you will readily understand that the most important period of the deaf child's life is that from two to seven years, the period during which hearing children naturally and physiologically acquire some command of oral language. As Kerr Love has pointed out, the deaf child usually begins school at seven years in the intellectual condition of the child of two, and this is physically expressed by his relatively smaller head.

HOME INSTRUCTION OF THE VERY DEAF OR DEAF MUTE CHILD.

The very deaf or deaf mute child has the same capacity for receiving instruction that other children have except for the fact that the hearing center of the brain is inoperative.

The home instruction of the deaf mute child should consist chiefly in an effort to make the visual and tactile centers of the brain take the place of the inoperative hearing center in the reception of oral language. The deaf child, therefore, should be talked to and talked at as much as possible and on every possible occasion. He should have more attention of this kind, and not less as is usual, on account of his deafness,

The instruction of the deaf child should begin at the earliest possible moment, and it may best be given by the intelligent mother or governess under the direction of the physician or specially-trained teacher. The oral method should be employed and the natural sign language should be used only as an adjunct, or as some one has said as a "crutch," to be laid aside as soon as possible. This method of instruction carefully and vigorously practised will bring the deaf child to the school age with a fairly good practical knowledge of lip-reading and with a fairly good working vocabulary of words.

The school instruction of otherwise normal deaf mute children may well be conducted in special day school classes, thus avoiding the necessity of removing them from their home environment and from their association with hearing people. At this period of their instruction, a suitable classification is desirable, so that the methods employed may best meet individual needs.

At least three classifications of very deaf children should be made. In the first class should be placed the mentally gifted ones, by whom the oral language may be easily acquired; in the second class, the less gifted ones to whom a combination of the oral and sign language may be best suited; and in the third class the defective ones, including the blind and the mentally deficient who may not be able to acquire speech at all. The first and second classes should be especially provided for in the public day schools, and the third class should have institutional treatment, followed perhaps by more or less permanent supervision."

(*) Read before the Academy of Ophthalmology and Otolaryngology, August, 1912.

SOCIAL AND ECONOMIC IMPORTANCE OF DEAFNESS ACQUIRED AFTER CHILDHOOD.

"The problems of deafness are deeper and more complex, if not more important than those of blindness. Deafness is a much worse misfortune, for it means the loss of the most vital stimulus—the sound of the voice, that brings language, sets thoughts astir and keeps us in the intellectual company of man," wrote Miss Helen Keller to Dr. James Kerr Love. This pathetic statement is amply verified by all those who have the misfortune to be totally deaf and may be emphasized by all those who are partially deaf. There is this difference between those who are partially blind and those who are partially deaf. The former in many instances can be made to see; the latter cannot be made to hear, at least not enough for all practical purposes.*

Von Troetsch declares that every third person between twenty and fifty years of age is more or less deaf in one ear. And this statement may be verified by attendance on such cases in any of our large hospitals.

The deafness arising after childhood is due, as a rule, to one of two causes; 1st, otosclerosis which often is hereditary, and catarrhal processes of the nose and throat, resulting in what we call O. M. C. C. (chronic catarrhal otitis media). Aside from these two classes we have deafness arising from acute infections with long standing suppurations, but these form a small minority of cases. From the social and economic standpoint, O. M. C. C. must be seriously considered, for the diminution in hearing often affects both ears at the same time and the process is insidiously progressive unless means are taken to arrest and improve the condition.

There are school teachers who are fearful of losing their positions on account of defective hearing. There are artisans whose work is not dependent on their hearing, who know that should they become deaf, their positions would go; there are conductors, trainmen, chauffeurs, housemaids, stenographers, and so on whose positions are absolutely dependent on their having at least fairly good hearing. Patients of this class, when their eyesight is impaired, go to a physician or a dispensary and are given proper glasses and they become as desirable workers as ever. When their hearing is defective, they go to just as good doctors and dispensaries but their condition is not relieved in nine instances out of ten. Mechanical appliances are of no avail, at least up to the present time. Moreover, the public is not wont to employ people with a telephone stuck on the side of their heads; it makes the employee look foolish, although the time will come when the wearing of a mechanical appliance

on the ear will be no more noticed than a mechanical appliance over the eyes.

In speaking of hereditary influences in otosclerosis, Sir Albert Gray at our last meeting (Sept. 25th, 1911) remarked: "It is, of course, indisputable that hereditary tendency does bear a very definite relationship to the disease. Unfortunately, however, there is but little agreement as to the nature, meaning and extent of this relationship. Such divergence of opinion is, after all, not surprising, when we reflect how much difficulty there is in ascertaining the relationship of hereditary influence to simple and normal anatomical conditions. Since such is the case, it would be surprising if the relationship of hereditary tendencies toward pathological conditions were not even more mysterious and obscure. At present it is more desirable to gather facts from all possible sources which have a bearing on the question before definitely formulating an opinion."

In this paper (Laryngoscope, January, 1912) he presents a number of "family trees" showing the direct bearing of heredity. In the first case, examination of three generations showed the following: Present generation, nine members, six deaf. Paternal side, one member deaf (not father), grandfather hard of hearing. Maternal side, out of thirteen, two deaf (not mother). Grandmother deaf. Explanation — tendency toward otosclerosis, which by union of the two families, accentuated the condition.

In a second case, six members of present generation, three were deaf. Paternal side, two deaf out of eight (father is one). Maternal, out of eight, only mother.

Hammerschlag mentions a case where an uncle married a niece, both having otosclerosis. Seven children were born and every one of them became deaf.

The other cases mentioned by Gray tend to prove the contention that there are some forms of deafness which pass on from generation to generation. He concludes as follows:

"1. In the first place, it is clear that the relationship of hereditary influence to otosclerosis is much more complex than has been supposed, but at the same time, such relationship is very close.

"2. It is quite futile to attempt to divide cases into those due to hereditary influence and those not due to this cause. And, consequently, it is not only useless but actually misleading, to refer to a certain percentage of the cases as being inherited. Each aurist will hold a different opinion as to what constitutes evidence of inheritance, and such estimates, therefore, become merely statements of opinion.

"3. In all cases, however clear the evidence of hereditary tendency may be, local and constitutional conditions may play an important part in determining the onset and course of the disease.

"4. The attempt to attribute all cases of otosclerosis to inheritance from some more or

* In a recent conversation where a blind man and a deaf man were present, the question was asked why a deaf man always took his affliction more to heart and was usually melancholy while the blind man took life cheerfully. The deaf man answered, "The reason is this: When you speak to a blind man you make him forget his troubles. When you speak to a deaf man you constantly remind him of them."

less remote ancestor, who may have suffered from the disease, is, at present, at least, unjustified. A great deal more must be learned in respect to the general laws of inheritance before conclusions can be drawn concerning the relationship which exists between inherited tendencies and pathological conditions such as otosclerosis.

At present it is our duty to collect as much evidence as possible concerning this subject. When this has been done, we shall not only be in a much better position to give an opinion in regard to treatment and prevention, but shall also be able to offer a large amount of material for the study of heredity in general, a study which I am convinced is destined to play an increasingly important part in medical science.

The great prevalence of O. M. C. C. and allied conditions can be ascertained by reviewing the statistics of some of our large hospitals, and for that purpose I have taken the following figures from the annual reports of the N. Y. Eye and Ear Infirmary, the Manhattan Eye, Ear and Throat Hospital and the Illinois Eye and Ear Infirmary.

In the year 1911, there were admitted to the ear service of the New York Eye and Ear Infirmary, 14,606 cases (which included 3,752 nose and throat cases, making 10,854 ear cases). The number of cases suffering from middle ear disease was 6,561. There were 1,217 cases suffering from wax in the canal, causing deafness, which was much relieved after cleaning out the canal. These comprised, however, 20 per cent. of the ear cases and about 10 per cent. of the total number of cases. There were 1,656 cases of O. M. C. C. (chronic catarrhal otitis media), forming 27 per cent. of the middle ear cases and 15 per cent. of the total number of cases.

In the year 1910, there were 7,913 ear cases at the Manhattan Eye, Ear and Throat Hospital, of which 5,381 were cases of middle ear disease, about 70 per cent. Of these, there were 1,254 cases of cerumen, 23 per cent. of the middle ear cases and 16 per cent. of the total number of cases. There were 2,204 O. M. C. C. cases, 40 per cent. of the middle ear cases and 30 per cent. of the total number of cases. In 1911, at this same hospital there were 10,534 ear cases, of which 7,213 had trouble with the middle ear, about 68 per cent. Of the total number of cases, 1,581 suffered from cerumen, about 20 per cent. of the middle ear cases and 15 per cent. of the ear cases. I include the cases of cerumen as the majority of these patients complain of deafness. There were 2,824 O. M. C. C. cases, 27 per cent. of the total cases and 39 per cent. of the middle ear cases.

At the Illinois Charitable Eye and Ear Infirmary during the year 1909, there were 2,733 ear cases, of which 1,952 suffered from middle ear disease, about 70 per cent. Of these 500 had cerumen in the canal, 19 per cent. of the total

number and 25 per cent. of the middle ear cases. There were 454 O. M. C. C. cases, 18 per cent. of the total number and 23 per cent. of the middle ear cases. In 1910 there were 2,064 ear cases, of which 1,366 suffered from middle ear disease, 60 per cent. Of these, 442 cases had cerumen in the canal, 21 per cent. of the whole number and 32 per cent. of the middle ear cases. four hundred and fifty-six cases had O. M. C. C., or 21 per cent. of the total number of cases and 21 per cent. of the middle ear cases.

We see by the above statistics that O. M. C. C. cases form about 20 per cent. of the middle ear cases and about 20 per cent. of the total number of ear cases treated and that the cases of cerumen or wax in the canal amounted to about 10 per cent. to 15 per cent. of the total number of cases and 20 per cent. to 25 per cent. of the cases suffering with middle ear disease. When we take into consideration that the majority of cases of cerumen of long standing have some alteration in the drum and middle ear which is not classified as O. M. C. C., we see that the greater percentage of those suffering from catarrhal deafness is far greater. The majority of patients with wax are content to have their ears cleaned out when, of course, their hearing is at once magnified. Yet it is seldom that this hearing is anywhere near the standard of what we consider normal hearing. At some time or another these patients will return to be treated for a stuffiness in their ears, thinking that, as formerly, it is due to wax. But this time the deafness is due to a middle ear disease and the case is far more serious.

The causes of catarrhal conditions of the nose, throat and ear are many. Some of these cases, many of them show their tendencies in early life, but many of them also develop their condition as result of improper living or a from of occupation which causes an extra strain upon the ear. The noise of our large cities is accountable for a great deal of the trouble and the noise associated with certain lines of work exhibits harmful effects.

There are many trades where the character of the work is responsible for the deafness. "Slight deafness is widespread among jute workers, but other textile operatives may be afflicted in a similar degree," says Thomas Oliver in "Dangerous Trades." This is due to the excessive noise of the looms. "It may be taken as a fact based upon experience that artisans who are exposed to such loud noises as are made in hammering rivets suffer from deafness. Boilermakers and riveters become deaf at an early age. Workers in sheet-iron factories are sometimes similarly affected with deafness," he says in the same volume. These workers often appear to hear far better while at their work, but it has lately been observed that they do not hear, but closely watch the lips of their fellow employes until they become very proficient in lip-reading.

In a very thorough article, entitled "Occupational Diseases of the Ear, Nose and Throat," William Sohler Bryant says:

"How widespread this subject is will be plain to you when you consider the occupations which are accompanied by dust, the escape of poisonous gases into the air, the escape of poisonous particles with the dust, continuous loud sounds, explosions and detonations, rapid changes of temperature, rapid changes of humidity, rapid changes of barometric pressure, wetting of the surface of the body, entrance of water into the nose or external auditory canals, concussion of air in the external meatus, entrance of foreign bodies in the external auditory canal, blows about the head, entrance of pathogenic organisms, hydraulic pressure in external auditory canal or upper air tract, and abnormal high barometric pressure in upper air tract."

He outlines the effects of sixty different occupations which will cause pathological conditions of these parts, chief among which are machinists, blacksmiths, barrel-makers, millers, engineers, stone workers, gun-powder workers, firemen, pugilists, caisson workers, etc. etc. He concludes his paper with the following apt remarks:

"However, the great destructive force of the occupational diseases of the ear, nose and throat is appreciated when the number of those affected is considered. The preventive measures are to be sought by arousing public opinion to these evils and to their extended and vital importance. The danger in the case of every occupation should be recognized by law and should be minimized by law. When the public is sufficiently educated to appreciate the loss through these remediable hardships, it will not be slow in demanding salutary legislation, and in punishing by legal penalty and public opprobrium. The special means of protection in every instance are very obvious."

After this extensive review of the great prevalence of partial and total deafness, the question arises as to what influence this has socially and economically on the community at large. What effect has deafness upon the happiness and earning power of the individual? What has been done by the various benevolent organizations? What has been done by employers whose workers have impairment as a result of their work? What has been done for the unfortunate who is willing to work, who is physically and mentally capable, but can find no work as a result of his hearing defect? What classes of work are open to these people?

THE SOCIAL ASPECT.

The investigation of the problem of eugenics in this direction brings out the interesting fact that heredity plays an important rôle in the fostering of deafness. This is particularly so in cases of otosclerosis. Persons afflicted with this condition should be warned against intermarry-

ing. Deaf mutes also are more liable to propagate deaf mutes. Aside from this, there is the vast social problem, of the handicap of the hard of hearing in those pursuits and enjoyments of life which make life worth the living. The sound of the human voice, the conjuring of ideas, from spoken words or sounds, the ability to appreciate many of the beauties of nature through the interpretation of sound, the independence of the individual as a concrete spirit are all lost with the result that the deaf individual "sinks into his skin" and drops out of social reckoning. The possibility of improving his thought is minimized. Lectures, the opera, the theatre, the church, all of which form an important part of our social life, are no longer enjoyed with spontaneity. Interpretation of the sounds emanating from the stage or platform interferes with the correlation of ideas. The man no longer enjoys his club life; the woman neglects her social teas—what is the result of such misfortune? The individual resides within himself, becomes too introspective, too self-absorbed, he loses his perspective and his horizon is limited to the confines of his narrowing intellect. Of course, this is not so in every instance, but we all know of numerous cases, some of which have led to the asylum or death.

The blind man does not suffer in this respect as much as the deaf man. The blind man readily paints pictures. He can mentally visualize. Very few men can paint word pictures for our training has never been such that our imagination has been stimulated to the extent of allowing us to impress on our minds the passing word thoughts. Memories by words are always indistinct and inaccurate, memories by sight leave a definite impression which can always form a definite concept.

However, the economic aspect of this subject is far more important. Eliminating that large class of individuals who are totally deaf, let us turn our attention to those who have been earning a living wage and whose hearing has become progressively worse. In one year (1911) at two of our dispensaries there were approximately 5,000 cases of catarrhal deafness treated. Conservatively we may estimate that this is one-half the number of the cases being treated in the city. About one-half of the cases are female, but 75 per cent., belong to the wage-earning class. Let us say that the average earning capacity is ten dollars per week. As the hearing becomes progressively worse, these patients are thrown out of work or obtain some less lucrative occupation. Let us say their earning capacity is reduced one-half and reckon it on a money basis. Five thousand people lose twenty-five thousand dollars a week, a hundred thousand dollars a month, or over a million dollars a year. Many of these appeal to the public charities, many have to live off the wages of others.

Now what is being done to help these people? In attempting to get an answer to this ques-

tion, I wrote letters to the N. Y. C. R. R., the International Brotherhood of Teamsters, the Metropolitan Street Railways and the Bureau of Commerce and Labor at Washington. The railroads answered that they did nothing; the Labor Union did not answer at all; the Bureau of Commerce and Labor knew nothing about the subject. As we have seen, many trades are responsible for the deafness of their employees; and I believe the employer should be held sufficiently responsible by a special clause in the Employers' Liability Act. The labor unions should take up this question and insist that some proper provision be made.

There are various employments open to the deaf man if society would only take a more lenient attitude toward these individuals. The classes of work they can do are numerous, such as book-cataloguing, bookkeeping, clerical work, such as addressing letters, for the more educated; and for the less educated, all sorts of manual labor could be done as well by the deaf man, provided the prejudice of the employer could be overcome.

The formation of employment bureaus for the deaf in our large cities would solve this problem to a great extent. Such a bureau has been established in New York City by the United Hebrew Charities in connection with a society for the welfare of the Jewish deaf. They are doing an excellent work; but such work should not be sectarian; it should appeal to all classes, to all religions. The money saved by keeping these persons from appealing to public charity would in the end well repay the effort.

As physicians we should be as much interested in the social and economic welfare of our patients as we are in the treatment of their diseases. At heart we are humanitarians and are placed on this earth to aid and protect the individual as well as society as a whole. It is important to attempt to cure deafness, but it is just as important for us in the meantime to aid the deaf individual to attain a certain degree of happiness and usefulness. His appeal is to us and through us to the legislative and civic bodies who can carry our advice into definite acts.

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Discussion.

DR. EDWARD B. DENCH, New York City.—In the main, I heartily agree with the author of the paper. The mechanical means for the relief of impaired hearing are so imperfect that, naturally, everyone who avails himself of such a means is regarded as an object of curiosity. If these mechanical devices ever become perfected, their use

will be as general as those of the artificial means for the improvement of sight. No one stares at a man now who wears glasses, simply because their use for the improvement of varying defects in vision is universal. The same would apply to artificial devices for the impairment of hearing. As soon as the various forms of apparatus which are used by those suffering from impaired hearing are sufficiently perfected to afford actual relief, persons employing them will no longer be considered objects of curiosity.

Regarding the educational methods mentioned by Doctor Hays, I thoroughly approve of these means. As soon as a child is found to be deaf, the sooner that such a child is put under proper instructors the better. I have had several examples in my private practise of children, born with very defective hearing, and, in a number of instances, have seen remarkable improvement, even in the early years, as the result of proper educational methods. The early recognition that the hearing of a child is impaired, and, consequently, that there is grave danger of his becoming mute as well as deaf, should be recognized in the early years of life. Such a recognition belongs to the family physician as well as to the specialist. If such a defect is recognized early in life, proper educational methods will serve to make such a child a useful member of the community, and delay in adopting such methods may render such a child a public charge.

Regarding the eugenic aspect of this subject, I believe that certain laws might be passed, which would render the intermarriage of those afflicted with impairment of hearing impossible. This, I think, would be a step in the right direction. Probably here, educational methods would do more than legislation. Many people, suffering from impairment of hearing, if they understood absolutely the condition which might exist in their offspring, would probably hesitate to marry. I believe that instruction along these lines will be of great value in the prevention of deafness.

For those who have practised medicine for a quarter of a century, it is gratifying to see how much more attention is paid to slight attacks of acute otitis than was given in preceding years. Now an earache is looked upon as a somewhat serious condition, not only because of the possibly fatal results which may immediately follow, but on account of the possible impairment of function which may follow repeated attacks of this character. Here, the education of the medical profession has done much. There is no general practitioner at the present day who does not recognize the gravity of an attack of acute otitis, not only on account of the immediate results to follow, but also on account of those which may occur later, producing a permanent impairment of the function of the organ of hearing. By this gradual education of the medical profession, we are therefore reducing the number of cases which suffer from impairment

of hearing in later life. The same may be said of the recognition of obstructive lesions of the upper air tract. At the present time, in New York City, all school children are examined, and those who are suffering from adenoid vegetations in the naso-pharynx and from enlarged tonsils, are recommended to various hospitals for operation. When we realize the number of cases of chronic non-suppurative otitis media which follow enlargement of the pharyngeal and faucial tonsils, we cannot but be impressed with the great value of the early recognition of these conditions as a prophylactic measure against auditory defects in the later years of life.

Regarding the conditions of so-called chronic catarrhal otitis media and otosclerosis, I am one of those who believe that an otosclerosis is not infrequently a sequel of a chronic non-suppurative inflammation within the tympanic cavity. While I know that many differ with me in this opinion, I believe that I have sufficient clinical evidence to prove that my own view is worthy of serious consideration. The diagnosis of an otosclerosis cannot, I believe, be made absolutely at the present day. I have seen a number of cases where I have been inclined to make this diagnosis, and to state to the patient that local treatment would be absolutely useless, the disease would progress, and no benefit could possibly be obtained by any treatment. In some of these cases, where treatment has been instituted in spite of this opinion, I have found that my first opinion was absolutely wrong, and these cases have been greatly improved by local treatment. I believe, therefore, that the early diagnosis of otosclerosis and an early unfavorable prognosis in doubtful cases, is unwise. If there is a reasonable doubt as to the advisability of treatment, with the slightest promise of any benefit, let us give these patients the benefit of the doubt, and in quite a large proportion of these cases we will find that our efforts will be rewarded by satisfactory improvement.

Undoubtedly, a certain number of individuals are the victims of conditions which must lead to gradually increasing impairment of hearing. Change of occupation, in these cases, will solve the economic question. Because, on account of progressive impairment of hearing, a certain individual cannot follow his ordinary occupation, it does not stand to reason that he must become a useless member of the community. Here, I believe, that the suggestion of Doctor Hays as to the institution of a bureau for securing employment for the deaf is of great value. Such a bureau would certainly enable a large number of individuals, whose impairment in hearing has unfitted them for their chosen vocation, to earn a livelihood in some other field. I have in mind the case of a man, well educated and well qualified to act as a librarian, whose impairment in hearing renders him totally unfit for his occupation as a clergyman. This man is broadly educated, and could serve in the capacity which

I have named. With the institution of a bureau, such as Doctor Hays suggests, it would not be difficult to give a man in this condition an occupation which would not only be lucrative but congenial as well.

Regarding the suggestion that employers should be responsible for the cases of "occupational deafness," I think that this is carrying the subject a little too far. A man enters an occupation by his own volition. I do believe that scientific bodies should bring before employers the advisability of doing all in their power to prevent the so-called "occupational deafness," but, to make them responsible to a legislative body for the occurrence of deafness in their employees, would be a gross wrong. All unnecessary noises, which may lead to deafness, should naturally be suppressed in all manufacturing plants. There are certain occupations, however, in which the employed must be subjected to loud noises, and to render employers legally liable for impairment in hearing would be, in such cases, an injustice.

I consider Dr. Hays' paper an extremely valuable one which has brought out many points which deserve our deep attention.

Dr. WENDELL C. PHILLIPS, New York City: "It is encouraging to note the fact that special public schools for the education of deaf children are being introduced throughout America. One entire school building in the City of New York is devoted to children with defective hearing. Unfortunately, very young children still need to be instructed before reaching the school age, and herein lies a problem which needs the aid of the aurist who has the opportunity to impress upon the parents the necessity of making every sacrifice, both of time and money, in order to commence the training as soon as the patient would otherwise commence to talk."

Discussion.

Dr. IRVING W. VOORHEES, New York City, said: The most striking sentence in this essay is, to my mind, "We can help the blind to see, the lame to walk, but we cannot help the deaf to hear." Those totally deaf must be cared for by institutions. Therefore, we must concern ourselves chiefly with the partially deaf. At the New York Institution for the Deaf and Dumb the children are taught useful trades, such as cabinet making and printing. It is surprising to see what excellent work these youngsters turn out. Yet after learning their trade and being graduated from the school, they find it hard to secure a position because of this awful stigma of deafness.

We need to teach both the general profession and the public to know the importance of beginning ear trouble, in order that the patients may come early for treatment. Almost every acute ear disease begins in the nose or naso-pharynx. The pharyngoscope has fairly revolutionized the treatment of the naso-pharynx and eustachian tubes. We must teach people that we are prepared to cure early cases of catarrhal deafness due to some local disturbance, but for this we

must carry on an active campaign of education among physicians themselves and convince them of the very great importance of early diagnosis and prompt treatment.

DR. SARGENT F. SNOW, Syracuse, said: I feel that Dr. Hays is to be complimented and thanked for bringing up this subject and emphasizing the need of more attention being given to the social and economic problems they present. It has long been my impression that otologists in general did not exert themselves along these lines as they should. Personally, I can contribute nothing in the way of appliances to aid in hearing, but my experience has proved, as Dr. Dench has mentioned, that many cases that seem upon our first examination to be doomed to extension of the disease make marked improvement upon persistent and comprehensive treatment. I never feel balked or disappointed if the deafness does not clear up after removal of adenoids or correction of the nasal deformities and other morbid states. Experience has taught me that an extreme deafness does not occur from a local cause alone. It seems necessary that there should be some coexisting systemic factor. Probably the most frequent constitutional symptom these people give us is constipation, and we can go into the case more deeply and find that the real poison responsible for the membrane susceptibility arises from auto-intoxication, this auto-intoxication persistently present culminates in the chronic catarrhal otitis-media.

DR. GEORGE EDWARD FELL, Buffalo, said: I wish to emphasize the great importance of instituting special schools for teaching lip-reading or "seeing sounds," as one writer puts it. At the Charity Eye, Ear, Nose and Throat Hospital in Buffalo, inquiries, following the presence of a case of deafness from traumatic cause in a little boy, resulted in ascertaining that there was no special school in lip-reading in our vicinity—that there were but three or four in the State. The writer's attention had been called to the school in Washington, D. C., conducted by Miss Rheinhardt, where most remarkable and valuable results had been attained. The teacher was specially and naturally qualified, an absolute necessity in this class of cases.

IMPORTANCE OF TESTING THE ACCOMMODATION AS A ROUTINE MEASURE IN REFRACTION WORK.*

By ALEXANDER DUANE, M.D.,
NEW YORK CITY.

AT the meeting of the American Medical Association last June, I presented the final results of a long series of investigations** for determining the normal value of the accommodation at any given age. In one sense of the word this work was a labora-

tory study, since it was based on measurements made systematically and with precision on a series of properly selected cases in order to secure a definite scientific object. But it was not a laboratory study if by that term is implied work done under conditions and with apparatus not readily applicable to routine office practice. For from the very outset the experiments were conducted with the idea of making them clinically useful. They were accordingly carried on in the office and as part of the routine examination of my ordinary office patients, care only being taken to exclude in the final summary cases that from one cause or another proved unsuitable. The apparatus used was of the simplest and could be applied quickly and with patients of all grades of intelligence. The longer I used the tests, the more I become convinced of their importance, not only as establishing physiological truths, but also as a help in solving the problems cropping up all the time in office work. In fact, I have become convinced that such tests should be made an integral part of our routine refraction work and that we should determine the accommodation in every case just as regularly as we determine the vision.

It is obvious that if we do thus test the accommodation and intend that the results obtained by the same or different observers at different times shall be comparable, we must follow a uniform plan and observe certain precautions.

PLAN FOLLOWED.

The full correction of the refraction being applied, and the eye not under observation being screened, a fine test-object is carried up toward the eye along a Prince's rule. The point on the latter where the test-object just begins to blur is the near point, and the corresponding amount of accommodation in D may be read off directly from the rule.

PRECAUTIONS TO BE OBSERVED.

1. *Test object.*—A sufficiently fine test-object must be used. The accommodation disc described by me in the *Ophthalmic Record* of August, 1909, while not free from faults, seems the best object yet devised for rapid clinical work, and if properly used gives accurate results. A disc should not be used after the line on it is blurred or the white space is soiled.

2. *Adjustment of the Rule.*—The patient's glasses should be set 13 mm. in front of the cornea, and the proximal end of the Prince's rule placed against them. If it is placed against the cheek, the results obtained will not be comparable with those given in the table.

3. *Illumination.*—The light should be good, but not dazzling, and should come from behind the patient—over his right shoulder if

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

** *Journal. Am. Med. Assn.*, Sept. 12, 1912.

the right eye is tested, and over the left shoulder if the left eye is tested.

4. *Precision in Determination of Near Point.*—In order to determine the near point precisely we must (a) urge the patient to try as hard as he can to see the test-object so that we shall get his actual maximum of accommodation; (b) we must carry the object up until it blurs, then withdraw it till it clears, and thus carry it forward and back several times until we fix the precise point at which it just begins to blur. It is important to call the patient's attention to the character of the test-object and explain just what we expect of him; otherwise errors may occur.

5. *Repetition of Tests.*—It is important to repeat the test several times. Some, particularly those who are not familiar with the test, may not exert their full accommodation at the first trial. Other things being equal, the highest, not the average of several successive readings gives us the value of the accommodation for the time being.

6. *Auxiliary Lens.*—If the near point is closer than 10 cm. (corresponding to an accommodation of over 10 D) a slight error in determining its position will involve an error of one or more D in the value found for the range of accommodation. In such cases the test should be made both with the full correction alone and also with this correction combined with a -3.00 or -4.00 D sphere so as to carry the far point out beyond 10 cm. The value then found for the range must be increased by the amount of the added lens.

If, as in presbyopia or in homatropine cycloplegia, the near point is beyond 40 cm., it must be brought within measurable distance by adding a convex glass to the patient's full correction. From the value of the range thus found the strength of this convex addition must, of course, be subtracted.

DETERMINATION OF THE FAR POINT.

All the precautions just detailed apply to the determination of the far point. We add to the assumed full correction a convex lens, say one of 3.00 D, and then, applying the Prince's rule as in determining the near point, carry the test-object away from the eye until the line just begins to blur. The point where this occurs should be at 3.00 on the rule. If it is not, then either the patient has not completely relaxed his accommodation, or if he does relax it, which happens as a rule only in advanced presbyopia or under complete cycloplegia, our assumed full correction is faulty. A consideration of the circumstances of the case often enables us to tell which condition obtains.

In any event, to determine the patient's relative far point, or his residual refractive

error, real or factitious, under these conditions, we subtract from the reading on the scale the value (3.00) of glass added. If, for instance the reading is 2.75 the patient has, with his distance correction a residual hyperopia of 0.25; if it is at 3.50, he has a residual myopia of 0.50.

To get the range of accommodation under these conditions we of course, find the number of D corresponding to his far point and near point respectively, as secured with the auxiliary lens, and subtract one from the other. Thus, if with 3.00 added his far point is at 2.75 and his near point is at 6.50, his range is 3.75 D.

USES OF THE ACCOMMODATION TESTS.

Examination of the accommodation as a routine procedure has seemed to me useful in the following ways:

1. In demonstrating anomalies of accommodation.
2. In determining the completeness of homatropine or atropine cycloplegia.
3. In helping to determine glasses in presbyopia.

ANOMALIES OF ACCOMMODATION SHOWN BY TESTS.

Our tests often bring to light anomalies of accommodation which in themselves quite frequently cause asthenopia and discomfort.

For example, we may find the accommodation subnormal—its insufficiency ranging all the way from slight weakness to complete paralysis. We regard an accommodation as subnormal if it persistently falls below the lower limit given in the table annexed.*

Again the accommodation may be normal enough, but may readily give out, as shown by the fact that the value found for it diminishes if several tests are made in rapid succession, or, that it varies on different days.

Subnormal and ill-maintained accommodation may occur:—

(a) As a temporary condition after debilitating illness (influenza, the exanthemata, etc.), or, in conjunction with anæmia and such like states, or as a symptom of neurasthenia.

(b) As a more lasting condition in association with nasal obstruction and probably other organic states that cause mal-nutrition or systemic depression.

(c) As a result of disorders of development, especially diseases of the ductless glands. One of the most marked cases I have seen was apparently due to infantilism.

(d) As a permanent condition due apparently to disorder of the central nervous system or to quite unknown causes.

* Taken from article in *Jour. Am. Med. Assn.*, Sept. 12, 1912.

NORMAL VALUES OF THE ACCOMMODATIVE
POWER AT ALL AGES FROM 8 TO 68.

Accommodation is given in D and tenths, near point being measured from the anterior focus of the eye, i. e., from a point 13 mm. in front of the cornea.

Age	Lower Limit in Normal Cases	Mean Value	Usual Upper Limit	Extreme Upper Limit
8	11.7	13.8	15.4	16.4
9	11.6	13.6	15.2	16.2
10	11.4	13.4	15.0	16.0
11	11.2	13.3	14.9	15.8
12	11.1	13.1	14.7	15.6
13	10.9	12.9	14.5	15.4
14	10.8	12.7	14.3	15.3
15	10.7	12.6	14.1	15.2
16	10.5	12.4	13.9	14.9
17	10.3	12.2	13.7	14.6
18	10.1	11.9	13.5	14.4
19	9.9	11.7	13.2	14.2
20	9.7	11.5	13.0	14.0
21	9.4	11.2	12.8	13.7
22	9.2	10.9	12.6	13.5
23	8.9	10.6	12.3	13.2
24	8.7	10.4	12.1	13.0
25	8.4	10.2	11.8	12.7
26	8.2	9.9	11.6	12.4
27	7.9	9.6	11.3	12.1
28	7.6	9.4	11.1	11.8
29	7.3	9.2	10.7	11.5
30	7.1	8.9	10.4	11.2
31	6.7	8.6	10.2	10.8
32	6.4	8.3	9.9	10.5
33	6.1	8.0	9.6	10.2
34	5.9	7.7	9.2	9.9
35	5.6	7.3	8.9	9.6
36	5.3	7.1	8.6	9.4
37	4.9	6.8	8.2	8.9
38	4.6	6.5	7.9	8.6
39	4.3	6.2	7.6	8.2
40	4.0	5.9	7.2	7.8
41	3.6	5.4	6.8	7.5
42	3.2	5.0	6.4	7.0
43	2.8	4.6	5.9	6.5
44	2.5	4.2	5.5	6.1
45	2.2	3.7	5.2	5.6
46	1.9	3.3	4.8	5.1
47	1.7	2.8	4.3	4.5
48	1.5	2.5	3.9	4.0
49	1.3	2.2	3.4	3.4
50	1.2	2.0	3.0	3.0
51	1.1	1.8	2.6	2.6
52	1.0	1.6	2.3	2.3
53	0.9	1.5	2.1	2.1
54	0.9	1.4	2.0	2.0
55	0.8	1.3	1.9	1.9
56	0.8	1.2	1.8	1.8
57	0.8	1.2	1.7	1.7
58	0.7	1.2	1.7	1.7
59	0.7	1.1	1.6	1.6
60 to 68	0.7	1.1	1.5	1.5

However caused, accommodative weakness may be associated with convergence insufficiency, sometimes of high grade. The association of an absolute paralysis of accommodation with an equally marked paralysis of convergence produces a peculiar clinical picture which I have seen in two cases recently, both presenting very marked subjective symptoms.

In other cases of accommodative weakness no special impairment of convergence is

found, and there may even be a convergence excess.

The symptoms of accommodative weakness comprise asthenopia, headache, and, if the weakness is extreme, also blurred, uncertain and varying vision. The symptoms may be severe, even incapacitating, although it is often hard to separate them from those due to the accompanying convergence insufficiency.

Treatment is largely causal; but the accommodation may be stimulated directly by practicing two or three times a day with the accommodation disc and with converging prisms. In using the accommodation disc for this purpose, one eye is covered and the other fixedly regards the little line bisecting the disc, which latter is held at arm's length and is then brought steadily up to the eye until the line blurs. This manoeuvre is repeated several times with each eye, the attempt always being made to bring the disc up as close as possible each time and to force the eye all the time to accommodate on the line so that it shall not blur. This practice may be usefully combined with Dyer's reading exercises.

In practicing with converging prisms a small dot is used as a test-object. This is placed ten or twelve inches from the eyes, and prisms, base out, are applied in the usual way, the attempt being made to run the prism convergence for near points up to 40° or 50° at least. This exercise is a conjoined stimulus to the convergence and the accommodation, and is hence particularly indicated when the insufficiency of accommodation is associated with an insufficiency of convergence. It is, of course, contra-indicated if there is a convergence excess.

TESTS SHOWING COMPLETENESS OF HOMATROPINE
CYCLOPLEGIA.

The second way in which I have found the routine measurement of the accommodation useful is in determining whether homatropine or atropine cycloplegia is sufficiently complete. We all know that the time taken by homatropine to exert its full cycloplegic action varies greatly in different cases, and that the completeness of the maximum cycloplegia produced likewise varies. It is important in any given case to know when the homatropine is exerting its fullest effect and how full that effect is, for in general our most satisfactory results are achieved if we examine when the cycloplegia effect is greatest. To determine this we place before the patient's eye the glass which represents what we believe to be his full correction, and add to it some convex glass, say one if 3.00 D. which will bring his far and near points within measurable limits. These points are then determined on the Prince's rule, and the corresponding values in D are taken off. The difference in D between the two gives the range of accommodation at the time. If this range is found to be too great, we continue the

homatropine or at least wait longer and test again, and so keep on until the range is properly reduced (to below one D at any rate.)

Thus suppose the patient has a manifest correction of $+1.00+0.75$ cyl. 90° . The following might be the measurements.

Time after first instillation.	Glass used.	far point R' in D.	near point P' in D.
(a) 30 min.	$+4.00+0.75$ cyl. 90°	3.50	6.00
(b) 45 min.	$+4.00+0.75$ cyl. 90°	3.00	4.50
(c) 65 min.	$+4.50+0.75$ cyl. 90°	3.00	3.75

At (a) it is evident that not only is the range too great but that the patient is not relaxing well since his far point with 3.00 added to his manifest correction should be 3.00 at most instead of 3.50.

At (b) he is evidently relaxing better, but his range is still too great (1.50 D).

At (c) not only is his range reduced to an amount (0.75 D), indicating that his accommodation is sufficiently relaxed, but furthermore the value for his far point indicates that his correction is not less than $+1.50+0.75$ cyl. 90° . For if it takes $+4.50+0.75$ cyl. 90° to give him a far point corresponding to 3.00 (i. e., to make him myopic 3.00 D) it will take a $+1.50+0.75$ cyl. 90° to make him emmetropic.

The above example shows how, in some cases, when the cycloplegia is complete the careful measurement of the relative far point that we obtain with a given correction enables us to form a close approximation to the glass to be prescribed. This is sometimes useful when we are a little uncertain whether the patient's true correction for distance is, say, $+1.50$ or $+1.75$. If adding a $+4.50$ to each eye we find that in the right the far point is at 3.00, but in the left is at 2.75, we infer that the true correction for the right eye is $+1.50$ and for the left is $+1.75$.

It may happen that the range is never reduced to 1.00 D but runs along at 1.50, or above. In such cases we should feel that our cycloplegia is incomplete and should resort to atropine. But these cases are not very common, and it is rather to be remarked that a number who are thus refractory to homatropine seem also to be refractory to atropine.

I have used this method continuously now for six years in over 2,000 cases, and the results have been so satisfactory that I should never think of returning to the less laborious but far less certain, hit-or-miss method of using homatropine in which one examines at some arbitrary time after instillation without regard to whether the cycloplegia is complete or not.

TEST TO DETERMINE GLASSES IN PRESBYOPIA.

Finally.—I have found it especially useful to make careful tests of the accommodation when prescribing glasses for presbyopia. Of course, this has been done in one way or another for many years. But the accommodation disc by en-

abling us to determine the near point accurately in each eye often gives more correctly than any other test an idea of the glass that will help that eye most in near work.

In presbyopia the decision as to the glass to be prescribed will necessarily depend on many factors. But of one thing we must always be particularly careful, especially in the earlier stages of presbyopia, and that is not to prescribe a glass which shall bring the far point of distinct vision too close. For this reason, as we know, and for others too, the near point also should not be brought too close, and in general the older the patient the further off the near point should be. I have worked out the following as an empirical rule for the most satisfactory position of the near point—it being premised that the near point is determined with the accommodation disc, not with fine print. In patients of from 45 to 48 inclusive, if any addition to the distance correction is required for reading, the most satisfactory reading glass is one that brings the near point to between 3.5 and 4.0 D on the scale; in patients of from 49 to 52 inclusive, one that brings the near point to between 3.3 and 3.7, and in patients of 53 to 58 one that brings the near point to between 3.1 and 3.4. Patients of 59 or over often prefer a relatively stronger glass, which brings their near point closer than 4.0.

Any such general statement will obviously have to be modified by a consideration of the patient's refractive state, his visual acuity, his muscular relations, especially as regards convergence, his habits of reading, the kind of work he does, and the conditions under which he does it. Yet it seems to answer for most cases. In particular, I am always suspicious of a patient's acceptance of a glass which brings his near point nearer than 4.0 or, if he is over 52, nearer than 3.5 D, for such a glass is likely to cause fatigue or a sense of strain in prolonged reading. As the patient says "the glass is too strong."

In testing presbyopia in this way we not infrequently find that the range of accommodation in one eye is greater than in the other, so that when we add, for example, a $+2.00$ to the distance correction in each, the near point in the right eye is found to be 3.50, in the left but 3.00. In such a case I always try to see whether a better result can be secured for reading by adding, say, a $+2.25$ to the left distance glass instead of a $+2.00$. Quite often it turns out that the patient does better with such an unequal addition to the distance correction, and as this fact would not have been discovered without making the accommodation tests in the manner noted, the utility of the latter is obvious.

It must not be supposed that I would rely on the accommodation tests as the sole or even the main guide in determining the presbyopic correction. A thorough-going use of the reading tests at the patient's working distance coupled with a careful consideration of the various factors mentioned above as being likely to modify

our conclusions, must be our main reliance in prescribing. But very material assistance and often a decision in doubtful cases are afforded by the accommodation tests.

ACUTE PHLEGMONOUS CHOLECYSTITIS: REPORT OF A CASE WITH GANGRENOUS ENTERITIS.*

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THE extreme rarity of the conditions mentioned in the title, either alone, and more especially combined, prompts the recital of the facts of the case as we know them and the detailed findings at necropsy. We are inclined to regard the case as unique, especially in view of the fact that after a most careful perusal of the literature on these subjects we find only those references mentioned herein, and in these we fail to find any absolutely similar cases. The case history reads as follows:

CASE 4373.—Howard Hospital, J. M., male, *et.* 48, of Irish birth, admitted December 27, 1910, with diagnosis of myocarditis complicated with purpura hæmorrhagica and gastritis. Temperature on admission 100.4° F., pulse 88, respiration 24. Five hours later the temperature dropped to 98° with a corresponding drop in pulse and respiratory rate. Two hours later it rose to 98.6°; three hours later it dropped to 98.2°, then rose for the next 9 hours to 99.6° when the patient involuntarily voided 8 ounces of urine and had 3 involuntary stools. He died within the succeeding two hours.

The nurse's notes record the fact that upon admission the patient's hands and feet, hips and back were covered with red and purple blotches. A bed sore was present on the back. The left side of the face was swollen and there were reddish spots on the inside of the mouth and also on the tip of the nose and ears. The patient was very emaciated and extremely restless and talkative. Fractional doses of calomel were administered followed by Epsom salts with the result that the patient had four stools. The first two stools were large and brown in color and liquid in character. The subsequent stools were small, yellowish, liquid, and composed of apparently undigested particles. The patient was seen by me only two hours before his death and in addition to the above symptoms general abdominal rigidity was noticed. No previous history was obtainable. There was nothing to indicate the real nature of the process within the bowels. Other medicine such as caffeine citrate, salol, strychnine, convallaria, and potassium citrate were given at intervals, but the patient was unable to retain any medicine after about four hours. The one specimen of urine obtained showed upon analysis, dark amber color, alkaline reaction, specific gravity 1016,

no sugar, no albumin, thin blood casts, triple phosphates, oxalates, mucus, and epithelium.

The notes of the autopsy as performed by Dr. Norman Gwyn, pathologist to the hospital, read as follows: Body of emaciated man about 5 feet 10 inches in height. Blood oozing from the mouth and nose, eyes edematous. Purpuric splotches over the hands, knees, outside of thighs and feet, some fresh and some old. Over the great toes (2.5 cm. x 5 cm.) and over the knees the spots are more discreet, some small spots on head of penis. Distinct ulcerations on lobes of ears and tip of nose, destruction of tissue on the feet. Large purple spot size of a hand on outside of left thigh; probably due to hypodermic injection. Red patch in epigastrium due to some application. Rigor mortis and livido mortis distinct. Left eye shows evidence of edema and distinct ecchymosis, no jaundice. Ecchymosis scattered through omentum. On lifting the latter the small intestine falls into view, is greenish gray in color, partly distended and partly collapsed. Transverse colon is collapsed and of same color. Two small knuckles of bowel, not discolored, project from either iliac region. These dark coils extended deep into the pelvis and flanks, giving the appearance of bowel filled with blood. The darkened area ends at the iliocecal valve, above it extends to the duodenum. The stomach is markedly distended and of the same green color but lighter. In the large bowel discoloration begins again above the caput coli and extends across the transverse colon, is empty and contracted. Rectum and sigmoid flexure empty and free from discoloration. No marked adhesion at splenic flexure or gall-bladder flexure. No hemorrhage in appendix, no fluid in abdomen. On exploring the small intestine immediately below the duodenum it seems to be covered with fine lymph, but its glistening appearance suggests condition of acute gangrenous inflammation. Nodes slightly enlarged. On exposing gall-bladder, which lies free at right angles, it is seen to be a shriveled structure 2 inches long, red and covered with a grey necrotic membrane with little crypt-like ulcerated areas. A distention at its neck and just beyond is evidently due to a contained gall-stone the size of a bean. Beyond this duct is clear. Spleen moderately enlarged and not suggestive of an infection process outside. On section, save for slight enlargement in malphigian bodies, it seems normal. Blood of mesenteric arteries and veins flows freely, particularly in lower part. As one ascends bowel no blood oozes out. On separating bowel, blood does not exude and bowel wall is greatly thickened; the general blackened condition must be ascribed to acute inflammation and gangrene. Left pleura clear, right pleura has adhesion at posterior apex, with a firm small nodule of evident healed tuberculosis; base also adherent. Both lungs crepitate, considerable congestion. Section of right lung shows moderate size cav-

* Read at the annual meeting of the Sixth District Branch, at Binghamton, October 15, 1912.

ity containing caseous material but no nodules and no consolidation. Pulmonary artery clear on both sides. Much edema and congestion at base of right lung; left lung clear. Left kidney larger than right, strips with slight difficulty. Cortex slightly swollen and suggests early stage of cloudy swelling. Right kidney also large, swollen and pale, and capsule strips with difficulty; cuts with some difficulty and on section is pale, dull, and suggestive of cloudy swelling. Both adrenals normal on section—no hemorrhages. Pancreas—section from tail is firm and pale. No hemorrhagic area or suggestion of fat necrosis. Head of pancreas shows no lesion, ducts clear, fluid flows freely. Small enlarged glands about middle of bile duct. Liver larger than normal, pale, evident seat of fatty deposit; covered with numerous stellate scars, probably the remains of old lesion. One section pale, morbidly fatty. Some slight distention of the bile ducts. Considerable ulceration in the stomach, mucous membrane red-grey in color. Firm plaques of atheroma in aorta. Small ecchymosis behind heart in pericardium. Heart not enlarged, 2 c.c. fluid in pericardium. Small chicken fat clots in auricle, auricular appendix free. Right heart free, pulmonary artery clear, valves free in right heart. Mitral valve free, aortic valve clear. Sclerosis around coronary openings. Heart muscle a little pale, not glistening. Bacteriological report of bowel secretions showed streptococci and colon bacilli.

In the case of plegmonous enteritis reported by Ungerma (Virchow's Archiv, 1908, CXCIII, No. 3) the notes read as follows: February, 1907. The patient was an outpatient, 60 years of age, Russian by nativity. He was suddenly taken ill with severe abdominal pain and prostration attended with slight icterus. He became rapidly worse and passed into a state of coma, dying on the third day. The patient had repeated high rises of temperature. On account of the scarcity of clinical data, there was no suggestion as to the locality or the character of the illness. There seemed to be a certain connection between the illness and the ingestion of two salt herring, but no information could be elicited concerning the quality or condition of the fish. The symptoms and physical signs seemed to point to a heavy diffuse exudative peritonitis, following perforation. Autopsy showed no evidence of intestinal injury or surface change of any other abdominal organs. There was a somewhat heavy swelling in the region of the pancreas, suggesting a pancreatic tumor. A close examination of the gland showed that it was not primarily infected. The head of the pancreas showed a mass of edematous infiltration, the remainder was even more strongly defective. The retroperitoneal edema which encircled the pancreas was the cause of the tumor-like resisting mass present in this vicinity. The chief part of the mass had most likely been the duodenum itself, the weight and stiffness of which

was quite apparent upon opening the abdomen. The other organs were considerably injected and enmeshed in fibrous tissue, but had retained their normal size and consistence, and normal thickness of their coats. The duodenum, however, could not be encircled by the hand with compression, its wall was thickly covered with a doughy consistency of a cloudy greyish red color. Upon pressure there exuded a large amount of edematous fluid. This edematous condition also affected the anterior portion of the liver, reaching on one side along the side of the aorta near the highly inflamed and thickly covered gland, high up on the other side to the mesentery. No thrombus was found either in the aorta or the mesenteric arteries. The wall of the stomach was not apparently changed. The gall-bladder was somewhat enlarged; the liver reached over the edge of the ribs in the mammillary line two fingers. It was somewhat cracked, and pale yellow with anemic surface markings. The spleen was normal in size and soft in character, the pulp being somewhat liquid. The genitourinary organs were normal. On opening the intestines the large intestine showed a smooth, pale, shining mucosa. The ileum and a large part of the jejunum had only a slight injection of the mucosa; the other coats were unchanged. A few centimeters under the duodeno-jejunal flexure there was seen a sudden thickening of the walls of the intestines. Upon completely opening the intestinal wall the mucous membrane presented a conspicuous appearance. In the region of the pyloric end of the stomach the mucous membrane was changed into a transparent greyish-yellow or greyish-red coloration, the folds of which were closely compressed, so that between them there was a deep compression about 1½ cm. from the incision. The mucous membrane was separated from the muscular coat. The pyloric end of the stomach could only be recognized by the stronger muscular fibers. The surface of the almost gall-like mucous membrane appeared dull, and nowhere was there to be seen any swelling. An elevation rising out of the highly swollen parts was the papillæ of Vater, indicated by an intense red surrounded with a mucous membrane with dark yellowish bile pigment, but otherwise normal. In the region of the descending part of the duodenum the swelling was decided; above and below it was less intense, diminishing as the jejunum was approached. The swelling of the mucous membrane ceased at the pyloric end of the stomach. The remaining mucous membrane of the intestinal tract was slightly reddened but otherwise normal. Upon separation of the ducts of Wirsung and Choledochus, a blind pouch as large as a finger was directly under the papilla of Vater, the same running along almost parallel to the ductus choledochus. Running in the direction of the hepatico-duodenal ligament there was a heavily swollen mucous membrane containing at the bottom two pointed bone splinters on either

side; the smaller of the two was almost 1 cm. long and lay transverse on the lower border of the cul-de-sac. The other one, 1½ cm. long, was perpendicular to its long axis. Neither of the two splinters had penetrated into the wall of the diverticulum; the mucous membrane did not show any great injury, and there was no laceration or bleeding. About 15 cm. underneath the first diverticulum there was seen another one, somewhat smaller, built similarly, laying in the same direction, also completely covered with mucous membrane; no foreign bodies were found in it. By the examination of the horizontal incision through the wall of the duodenum, one could see that the brunt of the lesion was borne by the submucous coat. It was about 1½ cm., and while of a dull grey in parts it also showed a prominent, pus-like, yellow network, upon pressing which very purulent and dropsical fluid exuded. From the submucosa there branched off more or less broad, dull yellowish grey stripes through the muscular coat to the subserosa, which was thicker than normal, and here and there small purulent yellow dots were to be seen. The chest organs showed only old points of fibrous induration; otherwise there was no apparent change. The examination of the peritoneal exudate showed microorganisms mostly arranged in short chains and seen exclusively in the cuts through the altered intestines (doubtless streptococci). The histological picture showed inflamed mucous membrane everywhere. Also in the most altered regions were seen strands where there was a sparsely nuclear strain which points to an evident secondary necrosis, but no macroscopic ulcerous defect could be found. Directly under the epithelium in the strongly constructed tunica propria of the mucous membrane and Brunner's gland there was seen the greatest part of the larger lymph stream, with multinuclear leucocytes, pushed out in a condensed manner, and outside of the lymph channel lay scattered round and pus cells between bands of connective tissue. The submucosa consisted of a braided and dilated band of connective tissue between which there stretched out large and free lumina, and an enormous quantity of gathered dropsical fluid. In moderately regular places the membrane was covered to almost 1 cm. in breadth with pus cells towards the lymph channels. More dense and more diffuse gatherings of pus cells also covered the muscularis. The lymph channel of the subserosa was covered with pus organisms. The subserosa with its many changes reminded one of the changes in the submucosa; it was very loosely affected with many empty channels, pushed through it; the lymph-vessels here were prominent and covered with pus cells and showed on the cut surface the appearance of small abscesses. There was a diffuse collection of pus bodies. The serosa in its strong accumulation of pussy exudate showed an acute purulent inflammation. The above described changes were similarly seen in

the upper cut of the duodenum. In the region of the pylorus the clear, edematous swelling of the submucosa stood out, in its place was seen a large exudate which was equally distributed in all the crevices of the wall and which did not adhere so much to the lymph channels. Further on there were not seen any more of the cell-like infiltration of the stomach-wall, so that in the region of the circular linear inflammation there might have been room in the tunica propria for round cells and normal mucous membrane. In the same way the same affection was pulled over toward normal conditions on the other side towards the jejunum. The large diverticula, previously referred to, which showed themselves at the beginning of the incision, were more towards the base, consisting of a small band of muscular fibers showing, in passing over in the normal stomach wound the similar edematous, pussy inflammation. Incisions into the edematous head of the pancreas showed an ordinary pressure of lymph channels. There was in the liver many accumulations of round pus cells in the mesh work of Glisson's capsule and in the shape of small handfuls between the cells on the edge of the liver. There was not seen any microscopic thrombus masses in any part of the portal vein. The retroperitoneal lymph vessel showed the signs of an acute hyperplasia, pronounced distention of lymph sinus with proliferated endothelial cells and leucocytes.

The incision was examined bacteriologically with Loeffler's methylene blue and Gram-Weigert stain. In all portions of the affected bowel regions, in edematous retroperitoneal meshing, in the inflamed lymph channels, in parenchyma of liver, and also in the peritoneal exudate were found the following microorganisms: A gram positive coccus arranged in short chains of 4 to 8 bodies, plainly showed cutting through the wall of the duodenum. In the further broadening in the intestines was the same overflowing of pus cells in the lymph channels through the muscularis into the subserosa. The streptococci were very plentiful in the papillæ of Vater, diminishing from here on both sides. In the stomach wound is very little pus. Nowhere was there seen any other organisms. Only on the surface of the mucosa between the folds were seen Gram negative short rods. In some depths were seen only the streptococci previously described.*

J. T. Eskridge's field of observation in gangrenous conditions of the intestinal tract includes another interesting case (Tr. Path. Soc., Phila., 1880, IX, 18 to 21). In this instance the patient was a woman, 40 years of age, and was ill for a period of 40 days before she succumbed. On autopsy, the liver, kidneys, and

* Phlegmonous enteritis is a very rare disease of the intestinal tract, according to Ungerman. There are only 7 cases in the available German records up to the time of Ungerman's observations. These are contained in the following: P. Deutelmöser: "Enteritis Phlegmonosa Idiopathica," Greifswald, 1905. Belfrage und Hedennis: "Enteritis Phlegmonosa," in Virchow-Hirsch Jahrbuch, 1876, Vol. II. Goldschmidt: *Archiv für klinische Medizin*, Vol. 40, 1887. Askanasy: *Zentralblatt f. Allg. Path.*, Vol. VI, 1896.

pancreas were found to be healthy. The spleen was small and covered with vesicles; its interior was intensely reddened and granular. Microscopic examination showed chronic inflammation. The gastric mucous membrane was congested. The mucous membrane of the duodenum was almost black, ending abruptly about 12 inches from the pyloric end of the stomach in almost healthy mucous membrane; its walls were very dark and easily torn, and surrounded by a localized peritonitis. The gall-bladder contained a large gall-stone. The uterus was inflamed and enlarged and its appendages normal. In this case, if we assume that the presence of the gall-stone produced cholecystitis we have a case resembling that of this paper.

A case of acute disease of the colon resembling commencing gangrene, with gall-stones, is recorded by Minot (*Boston M. and S. Jr.*, 1781, VII, 96), which has very many features of interest in this connection. The patient was a man 81 years of age, and was suddenly attacked with severe pain in the left flank, vomiting, tenderness over the crest of the ilium, and died within 36 hours. On autopsy, the colon showed evidences of obstruction to the intestines. The gall-bladder was everywhere adherent to the liver and contained several hundred calculi, of which five were as large as filberts, and the rest varied from the size of a pea or that of a small shot. The other organs were normal.

Ulceration being a molecular form of gangrene it may not be inappropriate to mention in passing the case of extensive ulceration of the large intestine associated with gall-stones, observed by R. H. Salter (*Boston M. and S. Jr.*, 1856, LIV, 57-61). The patient was a woman 68 years of age, and while generally healthy, she had been subject to attacks of indigestion and palpitation of the heart. Her last illness extended over a period of fifteen days. Autopsy showed athermatous process distributed throughout the course of the aorta and upon the aortic and mitral valves. The liver was large and fawn-colored with vascular points. The gall-bladder was distended, with yellowish-green viscid bile and contained two round, yellowish-brown gall-stones. The kidneys and spleen were normal. The mucous membrane of the lower part of the small intestine showed evidences of inflammation, but in the large intestine there were several areas of frank ulceration, one of which had perforated. Two fibrous tumors of the uterus were also found.

In the course of typhoid fever, perforation of the gall-bladder has been observed. In Ashhurst's case (*American Jr. Med. Sciences*, April, 1908), the patient eventually recovered, but in the case referred to by C. H. Lanviner (*Jr. A. M. A.*, June 6, 1912), the condition developed in the third week of the typhoid, and the patient died shortly after. This is mentioned merely to call attention to the simultaneous occurrence of necrotic conditions in these structures, although

here the typhoid bacillus in the blood was probably the cause of the gall-bladder complication.

While it is difficult to find records of cases exactly similar to the case herein reported, we are able to find cases allied in one or more particulars. Thus, for instance, we may refer to the three cases of acute cholecystitis complicating typhoid fever reported by E. M. Price (*Jr. A. M. A.*, May 15, 1909). In one of these at operation a small necrotic area was found in the fundus of the gall-bladder through which the greatly altered bile was discharging into the peritoneum. There were no duodenal complications.

W. Osler (*Tr. Assoc. American Physicians*, Vol. XII, p. 390, 1897), gives an account of a case of phlegmonous cholecystitis occurring in the course of typhoid fever. The patient was a married woman 37 years of age, who had an attack of typhoid fever and was now going through a protracted convalescence. She was taken with sudden pain in the region of the gall-bladder, jaundice, and chills. On opening the abdomen at operation the liver was seen to be enlarged, the gall-bladder projected below the right margin, and on its anterior wall a rupture was seen through which bile and purulent matter were oozing. The adjacent wall of the gall-bladder was quite necrotic. The patient died about twelve days later.

Sloughing of the intestine has occurred in the course of obstruction of the mesenteric artery, as is shown in the case observed by Allen (*Australasian Medical Journal*, 1882, n. s., V, 118). The patient was an old woman who was the subject of leg ulcers, diarrhea, and severe intestinal hemorrhages. Allen traces the causation of the sloughing of the intestine to the varicose veins of the legs, the latter incidentally producing obstruction of the mesenteric artery, thus precipitating the intestinal trouble and the fatal termination.

Mesenteric thrombophlebitis with hemorrhagic infarction is a very unusual type of localized intestinal gangrene and has been made the subject of especial study by P. Manclaire and F. Jacoulet (*Archives générales de Chirurgie*, Paris, March, 1908). These observers reviewed the literature on the subject and found fifty cases, including one in their personal experience, in which there was hemorrhagic infarction of the intestine from obliteration of either the artery or vein.

R. W. Wakefield (*Jr. A. M. A.*, Oct. 14, 1911) observed a case of gangrene of the ileum due to thrombosis of the mesentery. The onset was very sudden with intense abdominal pain and colic. Operation was performed and the patient recovered.

In Allbutt and Rolleston's "System of Medicine" (1908, Vol. IV, p. 239, "Diseases of the Gall-Bladder" by A. W. Mayo Robson) there is the statement that acute phlegmonous inflammation of the gall-bladder was observed and described by Courvoisier in 1890 under the name of

acute progressive empyema of the gall-bladder, and seven cases of the condition are recorded in his writings at that time. Another reference is made to Potain (*Journ. de méd. et chir.*, Nov., 1882) who described a variety of empyema of the gall-bladder which rapidly assumed a malignant character with peritonitis and death, but in which there was no perforation.

Perhaps the most interesting of Allbutt's quotations are those having to do with the case reported by L. W. Hotchkiss (*Annals of Surgery*, 1894, XIX, p. 197). The patient was a boy 19 years of age who was admitted to the hospital with acute peritonitis thought to be secondary to appendicitis. There was no history of gall-stones. An exploratory operation was performed at which the gall-bladder was found to be gangrenous. The patient died within 34 hours after the onset of the attack.

L. G. Courvoisier (*Casuistisch-Statistische Beiträge zur Pathologie und Chirurgie der Gallenwege*, Leipzig, 1890, p. 76) in a very elaborate contribution on the pathology and surgery of the biliary passages gives an account of ten fatal cases of acute cholecystitis which were typhoidal in origin, two with gall-stones and phlegmonous infiltration of the gall-bladder walls, and seven with seropurulent exudate with occasional ulcers and necrotic areas. (These cases are also quoted by A. L. Mason from Courvoisier's work, in *Tr. Assoc. American Physicians*, 1897, Vol. XII, p. 28.)

Osler in his more recent works ("Modern Medicine, 1908, Vol. X, p. 819) expresses his view that the types of acute cholecystitis should be considered as catarrhal, suppurative, phlegmonous, gangrenous, and membranous. He believes that the varying lesions are due not so much to different microorganisms as to variations in the virulence of the same organisms and other attendant conditions. He further states that a more advanced and rare stage of phlegmonous cholecystitis is spoken of as gangrenous cholecystitis. The small foci of necrosis that occur in suppurative cholecystitis are sometimes spoken of as localized gangrene, but he thinks "ulcerative cholecystitis" the better term. When a large section of the gall-bladder becomes necrotic the term "gangrenous cholecystitis" should be applied. This results from very virulent infection or interference with the blood-supply due to gall-stone impacted in the neck of the gall-bladder or in the cystic duct, or to infectious thrombosis of the nutrient artery. The lesions resemble those of advanced suppurative or phlegmonous cholecystitis, with the addition of complete necrosis or gangrene of a variable portion of the gall-bladder. Usually this process begins at or near the fundus and spreads toward the neck; in some cases it begins about a gall-stone more or less firmly embedded in the wall of the gall-bladder.

The case of gangrene of the gall-bladder recorded by Richardson (*American Journal of*

Medical Sciences, 1898, I, p. 630 and p. 644) are especially interesting. The first case occurred in the person of a married woman, 62 years of age, and began with severe abdominal pain. There was a history of occasional attacks of alleged gall-stone colic over a period of seven years. Operation was deemed necessary and when performed the gall-bladder was found acutely inflamed, distended, black, and gangrenous, adherent to the contiguous viscera, and surrounded by a thin, offensive exudate. The right upper quadrant of the abdomen was the seat of a spreading peritonitis. The gall-bladder contained hundreds of minute gall-stones suspended in a dark, offensive fluid. The patient died eight hours after operation from the original peritonitis and the superadded operative shock.

In Richardson's second case the patient was a man, 28 years of age, and a glazier by occupation. The condition began with a sudden gripping pain in both groins followed by vomiting on the succeeding day. Acute appendicitis was diagnosed and an operation performed at once. The appendix was found to be normal but the gall-bladder was tensely distended and everywhere adherent. It was dark in color and had the appearance of acute gangrene. Death followed on the fourth day. Autopsy showed a general septic peritonitis and a gangrenous gall-bladder. There were no gall-stones. The hepatic flexures of the colon were covered with fibrin and the lumen nearly occluded by adhesions.

W. C. McCarty, Rochester, Minn. (*Annals of Surgery*, May, 1910), in an article on the pathology of the gall-bladder refers to a clinical and pathological study of 365 out of 657 cholecystectomies performed by the Mayos, and concludes that the lesions in the gall-bladder are not definite entities but degrees in a process of reaction to irritation. There were 33 cases of cholecystitis purulenta necrotica in this study. He states that during any stage of inflammation of the gall-bladder, obstruction to the cystic duct may be so great, or the pyogenetic infection so virulent that disturbance of the circulation or multiple abscesses in the gall-bladder may occur. The specimens are usually distended, dark blue or black, the contents pus or blood and usually not bile stained. Periocholecystitis acuta and chronica must be considered a sequel of any of the above mentioned degrees of inflammation. Even in the earliest degree of cholecystitis catarrhalis acuta, the process may extend to the serosa through the lymphatics, and it is not infrequent to see adhesions, usually to the omentum and transverse colon in this stage. He further states that he considers the gall-bladder, liver, duodenum, pancreas, and stomach are embryologically, anatomically, physiologically, and pathologically closely related and should be regarded as a gastroduodeno-hepatico-pancreatic system.

H. A. Hare (Practice of Medicine, 1907, p. 675) describes acute cholecystitis and states that it may occur in a phlegmonous form.

A. A. Stevens (Manual of Practice of Medicine, 1911, p. 94) admits the possibility of gangrene of the gall-bladder in impacted stone but gives no account of primary gangrene of that structure.

J. M. French (Practice of Medicine, 1905, p. 486) in referring to phlegmonous enteritis states that it is very rare as a primary affection, usually being observed as a termination of strangulation, intussusception, pyemia, or malignant disease. This view is concurred in by most of the prominent clinicians. He further attributes the primary cases to the colon bacillus and states that the condition sometimes accompanies phlegmonous gastritis. In discussing acute infectious cholecystitis he mentions a phlegmonous variety but shows no relationship between it and phlegmonous enteritis.

R. C. Kemp (Diseases of the Stomach, Intestines, and Pancreas, 1912, p. 599) states that phlegmonous enteritis is rare as a primary process. It is probably due to streptococci infection, the jejunum being most frequently involved and the condition cannot be diagnosed until after operation. It may be secondary to intestinal ulceration, to intussusception or strangulated hernia.

Osler (Practice of Medicine, 1912, p. 566) in his remarks on acute infectious cholecystitis acknowledges that there is a phlegmonous variety of the condition and quotes Richardson (whose cases are also referred to in his contribution) for the symptomatology of the affection.

Else (*Surgery, Gynecology, and Obstetrics*, Chicago, Dec., 1909, Nov., 1910) in discussing the pathology of the bile ducts, and gall-bladder states that microorganisms reach the gall-bladder from the intestines by ascending the common and cystic ducts, and very rarely reach the gall-bladder from the intestines by way of the portal vein. When they do the liver is first affected.

E. Williams, Patterson, Louisiana (*Medical Record*, Nov. 20, 1909) records a case of acute gangrenous cholecystitis with gall-stones in the cystic duct and perforation of the gall-bladder.

M. A. Tate, Cincinnati, Ohio (*Journal of Obstetrics and Diseases of Children*, Feb., 1911) also reports a case of gangrene of the gall-bladder.

Tyson (Practice of Medicine, 1898) mentions the occurrence of phlegmonous cholecystitis but only as a complication or termination of impacted gall-stones.

The case reported by J. T. Eskridge (Tr. Path. Soc. Phila., 1881-83-84, XI, pp. 36-45) bears a slight resemblance to the case which makes the subject of this article, but in this case there was abscess of the liver, not a cholecystitis, and the intestinal trouble consisted of gangrenous inflammation of the cecum and appendix. The patient in this case was a factory girl, 27

years of age, and was the subject of inflammatory rheumatism. Her final illness lasted about one month and had reference to heart trouble. The autopsy showed remote and recent pleurisy, multiple abscesses of the lungs and spleen, small area of pericarditis over the left ventricle, dilatation and hypertrophy of the left auricle and ventricle, diseased mitral valves, thickened aortic valves, abscess of the liver, gangrenous cecum with sloughing of the appendix, and numerous small abscesses of the liver, in addition to the single large abscess just noted. This was a distinctly surgical case, although the early symptoms had reference to the heart.

Anders (Practice of Medicine, 1911) acknowledges five varieties of cholecystitis, namely catarrhal, suppurative, phlegmonous, gangrenous and membranous. He states that gangrenous cholecystitis is rare and fatal. Regarding phlegmonous enteritis he states that it is a suppurative inflammation of the submucous layer of the intestine. It may be diffuse or take the form of a circumscribed abscess. Rarely it occurs as a complicating condition in septicopyemia and in malignant types of the exanthemata, resulting in the formation of abscesses that usually have their seat in the duodenum. Phlegmonous enteritis may be secondary to strangulated hernia or intussusception.

Musser ("Medical Diagnosis," 1896, p. 654) refers to acute phlegmonous inflammation of the gall-bladder and gives its symptomatology, but does not supply any information of value in differential diagnosis or etiology.

J. C. Wilson ("Medical Diagnosis," 1909, p. 953) under the head of phlegmonous enteritis says there are no distinguishing features of the disease and recovery does not occur.

Wood and Fitz ("Practice of Medicine," 1897) state that when the mucous membrane of the intestine is filtrated with pus the condition is known as phlegmonous enteritis. It is a rare occurrence and may be the result of a primary infection of the wall as in malignant pustule. More often it occurs in consequence of ulcer, intestinal obstruction, strangulated hernia, or fecal impaction. Gangrenous enteritis occurs when putrefaction of the necrotic mucous membrane takes place. It is more often present in dysentery and is indicated by the discharge of discolored sloughs of extremely offensive odor with considerable blood.

Pepper (An "American Text Book of the Theory and Practice of Medicine," Vol. II, 817) states that phlegmonous enteritis is a rare affection which cannot be differentiated during life. It is usually secondary to strangulated hernia, intussusception, typhoid fever, tuberculosis, dysentery, and carcinoma.

Frederick Taylor ("The Practice of Medicine," 1911, p. 796) in discussing cholecystitis admits the possibility of a gangrenous termination of an inflammation of the gall-bladder, especially

if it contains gall-stones and one or more become impacted in the cystic duct.

Reynold Webb Wilcox in a recent work ("The Treatment of Disease," 1908, p. 471) refers to the possibility of gangrene of the gall-bladder with perforation, occurring in the course of acute cholecystitis due to infection with some one or more of the pathogenic bacteria. As a termination, he mentions that the process may be shut off by adhesions and thus form a localized abscess-cavity or it may result in generalized peritonitis.

H. Crouse (*New Mexico Med. Jr.*, Las Cruces, May, 1911) reports three cases of gangrene of the gall-bladder.

H. Riese (*Deutsche medizinische Wochenschrift*, Berlin, Oct. 19, XXXVII, 42, pp. 1911-1921) gives an account of a case of gangrene of the gall-bladder incident to perforation of a gastric ulcer.

A. R. Edwards ("Principles and Practice of Medicine," 1907, p. 655) admits the great rarity of phlegmonous enteritis and considers it solely of anatomic interest. He refers to Maragliano, who described a form probably due to the colon bacillus in which multiple purulent foci are found in the intestinal wall, frequently resulting in perforation.

L. Cheinisse (*Semaine Médicale*, Paris, March 10, 1909, XXIX, No. 10, p. 109) in a paper on phlegmonous enteritis refers to the writings of a Russian clinician who reported five cases of this rare affection since 1899. Cheinisse's paper is very exhaustive and reviews the history of these cases and those mentioned in the other literature of the condition. From this digest of the cases it would appear that disease shows a predilection for the duodenum and first part of the jejunum and he implies that he believes traumatism is a prominent etiologic factor. Streptococci were isolated in all cases and in one staphylococci were found in addition. A preceding acute catarrhal enteritis was observed in some cases, and in Moisey's four cases, there was concomitant sore throat or gastritis. In none was there phlegmonous cholecystitis. In all cases the peritoneal reaction was so great that it masked the symptoms of the underlying condition.

C. P. Childe (*Practitioner*, March, 1909) in an article relating to resection of large lengths of the small intestine give an account of a case with gangrene of that structure.

E. H. Pinney (*Australasian Med. Gazette*, Jan., 1908) reported a case of gangrene of the ileum.

Acute diffuse phlegmonous gastritis due to streptococcal infection with fatal termination has been observed by Richard W. Westbrook (*Jr. A. M. A.*, Feb. 26, 1910). This is merely noted in passing to call attention to the possibility of the occurrence of phlegmonous inflammation in any part of the gastrointestinal tract as an independent condition.

In passing it might be well to refer to the cases of epidemic croupous enteritis reported by G. Boermann and O. Eckersdorff (*Münchener medizinische Wochenschrift*, June 8, 1909, LVI, No. 23, pp. 1162-1216) since from the course of this affection it is likely to be confused with phlegmonous enteritis. These cases were observed in Sumatra, and the condition consisted of an acute intestinal affection with tempestuous onset with fever, leucocytosis, rapid pulse, violent colic, blood-stained stools, tenesmus, and speedy fatal termination. Ten cases are reported with autopsy findings. Pseudomembranes were found in the large and small intestine. Streptococci were found in large numbers.

It is well worth noting a certain relationship between pressure in the common duct and the abdominal circulation, which has been demonstrated, especially in connection with this case, in which we are endeavoring to show a relationship between the two gangrenous structures. Thus Ranschoff (*Annals of Surgery*, Oct., 1908) showed by experimentation a marked fall of blood-pressure when the common duct is explored by introducing the finger in the foramen of Winslow. He concluded this was due to pressure on the portal vein. If his conclusions be correct, the backing up of the portal circulation might be responsible for the precipitation of necrosis in the intestinal tract. From an academic standpoint this seems reasonable, although we have no means of confirming this supposition.

In a previous paper* upon gangrene we referred to the influence of heart disease, especially endocarditis, in the production of the affection. While it may be drawing some upon the imagination to attempt to connect gangrenous conditions of the abdominal viscera with heart conditions, yet we find that Robert Babcock (*Jr. A. M. A.*, June 12, 1909, p. 1904) has collected a series of cases and quoted all the available literature up to that date showing a relationship between chronic cholecystitis and myocardial incompetence. The point of this is that should there be a true relationship between the pathology of the two structures it is active in all affections of either, and in that event it would be possible to find in phlegmonous cholecystitis some etiological factor in the heart.

Conclusions.—In analysing the case we have here recorded we find a sudden onset with symptoms of myocarditis, purpura hemorrhagica, and gastritis with a very rapid course terminating within a few hours in death. In the other cases we have quoted, there were also sudden onset, rapid course, and fatal termination, except in a very few instances. No other case showed evidence of any myocarditis, although in Eskridge's first case pericarditis and endocarditis were present and in Salter's case endocarditis and symp-

* Spontaneous Gangrene. With the report of a case illustrating the ordinary senile type, resulting in spontaneous amputation, and a case of spontaneous gangrene affecting the several extremities successively in the course of acute primary infectious endocarditis. By Albert E. Roussel, M.D. *International Clinics*, Vol. III, twenty-second series.

toms of heart trouble were observed. Babcock showed a relationship between chronic cholecystitis and myocardial disease, mentioning a definite case in his own experience, but his case was not of a phlegmonous or gangrenous character. The purpuric spots mentioned in the case in this paper were not observed in any of the other cases.

The autopsy findings were, briefly, emaciation, edema, purpuric spots, ulceration of the lobes of the ears and tip of the nose, extensive gangrene of small intestine, extensive discoloration of the stomach and colon, cholecystitis with ulcerated areas, gray necrotic membrane, and one gall-stone, few areas of fat necrosis in the pancreas, cloudy swelling of the kidneys, pericardial effusion, healed nodule of tuberculosis in the right pleura, congestion of both lungs, active tuberculosis of the right lung, and ulceration of the stomach.

The emaciation may be explained by the tuberculosis although emaciation is not mentioned in the other cases, probably because of the very acute onset of the affection. It can therefore be dismissed as being merely incidental to the abdominal condition.

The edema may be attributed to the heart and kidney conditions and probably existed prior to the gall-bladder and intestinal condition.

The purpuric spots are difficult of explanation, as are also the ulcerations on the lobes of the ears and tip of the nose.

The pericardial effusion, the cloudy swelling of the kidney, and pulmonary and pleural tuberculosis, may possibly bear a relation one to the other, but certainly do not bear any definite relation to the intestinal and gall-bladder disease.

Nearly all the other cases have shown a relationship between gall-stones and the gangrenous cholecystitis but here we have one small stone which does not appear to be more than incidental.

In view of the extensive inflammation of the entire gastrointestinal tract beginning with gastritis and gastric ulcer, passing into gangrene in the small intestine, and terminating in inflammation and discoloration in the colon, it is reasonable to presume that it was due to streptococcal infection that extended into the gall-bladder producing similar changes in that structure. We are encouraged in this view by the records of Ungerman, Cheinisee, Westbrook, Baerman and Eckersdorff, which observers found streptococci in their cases. It will be recalled that the bacterial examination in the case recorded in this paper also demonstrates the presence of streptococci. The cases of gangrenous cholecystitis in the course of typhoid fever further corroborate the view that the affection began in the gastrointestinal tract first and extended by way of the common and cystic duct, otherwise an abscess of the liver would have been observed, especially if the infection had reached the liver through the portal system.

Gangrenous cholecystitis usually results from gall-stones, as he has already been stated, and gangrenous enteritis most often follows obstruction, strangulation, or intussusception, but the intestinal condition may follow in the course of general pyemia. If we are inclined to concur in this it requires but a small effort on our speculative powers to presume a mixed infection in the tubercular right lung of our patient, which aided by the crippled heart permitted a generalized streptococcal infection of the gastrointestinal tract.

We must therefore conclude that gangrenous cholecystitis may occur independent of impacted gall-stones or typhoid fever and may be secondary to a similar process in the intestinal tract. Also, it must be admitted that gangrenous enteritis independent of obstruction, intussusception, or malignant disease may occur as the result of some virulent infection, probably streptococcal, and may extend into the gall-bladder by continuity of structure. Further, such infection may gain access to the gastrointestinal tract directly or indirectly from localized foci. That the several organs of the chest and abdomen must be below par for the culmination of this process must be acknowledged, since all of the cases enumerated showed more pronounced changes in the gall-bladder and intestines, the more disturbed were the other viscera. In the face of these facts the condition must be regarded as a fatal disease.

SOME OBSERVATIONS ON INFANT FEEDING.*

By HARRY RULISON, M.D.,
ALBANY, N. Y.

THE last five years have witnessed a remarkable change in the trend of our ideas concerning the substitute feeding of infants. Research in chemistry and metabolism has taught us that a cow's milk cannot be converted into human milk and that there can be no single method of substitute feeding adapted to all cases. The teachings of the advocates of percentage of feeding have done much to advance the science of infant feeding, but their methods have not met with the success that might have been expected of them from a purely theoretical standpoint. They have met with their greatest success in hospital work and where laboratory feeding is possible. Aside from being based, as many of us believe, on an incorrect principle, the many mathematical calculations involved in their use, have caused most physicians to resort to the routine use of one or another of the proprietary foods. The feeding of the average infant is by no means such a complicated process as much of the text-book teach-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

ing would have us believe. Finkelstein has commented on the surprising tolerance of the healthy infant for widely different foods. Minute fractional changes in the percentages of the various food elements from day to day is an unnecessary refinement.

The chief requisite for successful substitute feeding is a thorough knowledge of the underlying principles; the nutritional value of the food as a whole and of each individual element entering into its composition; the nutritional requirement of the child to be fed and the correct interpretation of the various signs of nutritional disturbances together with the ability to refer them to the particular food element causing that disturbance. The failure to make such interpretations correctly is the chief cause of unsuccessful feeding.

While it leaves much for future research to clarify, Finkelstein's simple classification has been of the greatest practical value to most of us who have made its principles the basis of our feeding methods.

Although it is neither possible nor desirable to lay down hard and fast rules, it is essential to have a broad general plan on which to ground our feeding. In devising such a plan we must first consider what constitutes a proper food mixture for the infant in health. Experience would seem to indicate that such a mixture should meet the following requirements.

As a whole, it should be of such a caloric value as to meet the demands of the individual child. Its component elements, moreover, must be present in such proportions as to constitute a well-balanced ration within certain limits, which will depend largely on the metabolic status of the infant for whom it is intended. Its composition need not approximate breast milk, nor necessarily resemble it closely. It should be flexible and capable of easy modification to meet changes in the infant's condition. Its preparation in the home should be possible.

A food which to my mind fulfills these conditions, consists of dilutions of whole or skim milk, milk with water to which are added from one to three carbohydrates, including at least one form of sugar. I do not mean to imply that all infants will thrive on such mixtures, but only that I believe it to be the best and simplest method of substitute feeding for the average infant.

In order to feed intelligently, one must necessarily have some standard by which the feeding is controlled. Both the percentage and the caloric methods have their advocates. I do not believe that we can afford to ignore either, both of them furnish us with valuable information. On the other hand, we should not allow either calories or percentages to hamper us in our feeding if the welfare of

the child seems to demand more or less of a given food or any one of its component parts, than would seem to be indicated by our standards.

The energy quotient of 100 calories per kilo of body-weight diminishing to about 70 or 80 at the end of the first year has worked out well in my experience, although more children seem to require a food in excess of this than a weaker one; it would seem to depend largely on the class of cases one sees. The energy quotient for premature, under-nourished and atrophic children is much higher and it is often a problem whether to feed "for age" or "for weight."

Probably the widely prevalent belief that the average bottle-fed infant is over-fed would be found to be fallacious were food values carefully calculated in every case. It is not at all infrequent that a diagnosis of dyspepsia from over-feeding is made by the physician in the case of the child passing small frequent starvation stools and crying from hunger.

So much for the food as a whole. Its various constituents will be considered later.

The quantity of food to be given at a feeding and the length of the interval between feedings would depend on the age and development of the child. In general, I am in favor of larger quantities and longer intervals.

After the first two or three weeks of life, the infant will usually take from one to two ounces more than the capacity of the stomach without any disturbances, provided that the interval between feedings is of sufficient length. The excellent work of Cowie and Lyon on the effect of gastric and duodenal reactions on pyloric opening and closure, shows conclusively that different degrees of either acidity or alkalinity may hasten or delay the emptying of the stomach. Alkaline mixtures and mixtures containing high fats may be said in a general way to delay the passage of the food into the duodenum.

Cows' milk mixtures seldom leave the stomach of the normal infant in less than 2½ to 3 hours, and I have found milk present in the stomachs of healthy babies five hours after a feeding during hot weather. Allowing for a rest then, it would seem that Grulee's contention that it is never necessary to feed a normal infant oftener than once in four hours ought to be about correct.

Long intervals with plenty of water between feedings, where it has been desired, have given me much better results than the shorter periods. As to night feedings, I believe that their early elimination is desirable but not always possible.

FOOD ELEMENTS.

Of the various elements entering into the composition of the food, proteid will be first considered. The casein of cows' milk was

long considered the source of most of the gastro-intestinal ills of infancy. The teachings of Biedert, which based the indigestibility of cows' milk casein on the presence of curds in the stool, was the basis of high fat—low proteid modifications. Hamburger advanced the foreign proteid theory to explain its supposed toxicity. There is abundant evidence, however, to substantiate the more recent teaching that under ordinary circumstances proteid gives rise to little trouble in infant feeding. Rubner, Orgler and others have shown that the N. retention is quite as high in the case of the infant fed on cows' milk casein as it is in the child fed on homologous proteid. Howland states that proteid should furnish not less than 8 per cent. nor more than 10 per cent. of the total energy of the food, for he holds that quantities much in excess of these limits increase heat production unduly and throw an increased amount of work on the organism. Recent researches of Holt, Courtney and Wollstein prove, however, that the infant will not be injured by high percentages of proteid, provided that a certain amount of whey salts be present, but that a rise of temperature ensues upon their withdrawal.

It has been my custom for the past two years to begin feeding with mixtures containing from 1.33 to 2.00 per cent. proteid, increasing to three or four per cent. at the end of the first year, with uniformly better results than formerly when lower percentages were used. During that time I have not seen a casein curd and I believe that they occur much more frequently when the fat exceeds the proteid than when it is equal or less. Moreover, colic has been a very infrequent symptom and my experience has been that much of the so-called colic is hunger and the symptoms have disappeared promptly on increasing the strength of the formula.

I wish to state my belief that such measures as changing the casein-lactalbunin ratio, why feeding and milk peptonization are seldom if ever necessary, and in this connection I wish to take issue with Cowie and Lyon in a statement made by them that little or no proteid can be split in the stomach on account of the normal absence of free H.Cl. In a series of experiments, yet unpublished, I have found that the proteid in withdrawn stomach contents is completely dissolved on incubation when no free H.Cl. is present; as to whether it is split into its ultimate amino compounds I am as yet unprepared to say.

FATS.

In almost every text-book we see a chapter devoted to difficult feeding cases. Most of these infants have refused to thrive on a mixture closely resembling human milk in composition. Now that we know more of fat

metabolism in infancy and of the various disturbances dependent on the inability of the infant to digest and utilize fat properly, many of the hitherto difficult cases have become simple.

From a digestive standpoint, the infant is abundantly able to take care of fat. Ibrahim, Sedgewick and others have demonstrated the presence of a gastric lipase and more fat is probably split in the stomach than was formerly believed. Hess has shown the pancreatic lipase to be present in normal amounts in acute intoxication and only slightly diminished in atrophy. Reasoning from the analogy of human milk, relatively high fat would seem to be indicated. In practice it is another story. Czerney has shown the relation of high fats to the exudative diathesis and Finkelstein their influence on the elimination of calcium and magnesium in the so-called balance disturbance and secondarily in atrophy. There can be no doubt that many infants cannot metabolize properly even moderate percentages of fat. Experience in feeding whole milk dilutions, has taught me that the fat in a mixture will more often need reduction than increase after it exceeded 2 per cent. Many infants make phenomenal gains on buttermilk and skimmed milk without developing symptoms of rachitis or any apparent lessening of the immunity. Growth depends upon proteid and it cannot be eliminated from the diet without injury; if carbohydrates be withdrawn, acidosis results after a time, but to a large extent, fat can be replaced on compensated for by isomeric quantities of carbohydrate.

The well-known tendency of the child to acidosis and its relation to recurrent vomiting should be borne in mind when high percentages of fat are fed, the subject of habitual vomiting is one that has been of much interest to me and examination of the gastric contents in a series of cases apparently shows that in addition to hyperchlorhydria as a factor in these cases organic acids (lactic and butyric) are often present. Whether this is due to an hyperactivity of gastric lypolysis or to retention is an open question. In all cases of habitual vomiting including pylorospasm, low fats are indicated.

CARBOHYDRATES.

The carbohydrates most commonly used in infant feeding are the disaccharids lactose, maltose and saccharose, together with starch and dextrin. Of these, maltose is most assimilable and least liable to undergo fermentation, while lactose is much more easily fermentable. Just at present maltose is becoming widely used. Personally, in the feeding of normal infants, it has not given me results superior to those obtained in feeding cane sugar, although I believe it to be safer than sugar

to feed during convalescence from dyspepsia, acute intoxication and atrophy. The objections to its use are the laxative effect which it seems to have in certain cases together with the fact that many infants seem to tire of it rather quickly and lose appetite. Cane sugar has invariably given me better results than lactose, and I believe that in the past the use of the latter has been based on theoretical conditions rather than any real superiority in the results obtained. By means of the duodenal tube, Hess has demonstrated the presence of amylase during the early weeks of life, so we are no longer justified in believing that starch digestion is especially difficult in early infancy. Brady has called attention to the feeding of polycarbohydrates and I have seen this method used very successfully in some of the German clinics. It should be borne in mind that the infant often develops an intolerance to one or another of the sugars, in which case another form of sugar should be substituted. During the course of a diarrœa sugar should be withdrawn, and it seems to me that even barley water might better be omitted during this period. Its supposed soothing action on the bowel is probably a fallacy, as most of the starch has been converted before it reaches the site of the disease and it simply supplies fermentable material. Weak tea or saccharine water is preferable.

SALTS.

It is only recently that we have come to appreciate the many important rôles that the various inorganic salts play in the infant's metabolism. Time will not permit an adequate discussion of this subject. It must suffice to say that the whey-salt content of the food should be carefully watched. Probably many of the edemas occurring during infancy without renal or cardiac lesions depend on defective metabolism of sodium chlorid. I have seen intense edemas with total suppression of urine disappear over night on placing the infant on a salt-free diet, and conversely an infant under treatment for marasmus gained 4 pounds in 14 days without signs of edema when a change from eiweiss milk to skim milk was made, a gain due principally to the increased water retention occasioned by supplying more whey salts. Whey feeding in such conditions as dyspepsia, acute intoxication, atrophy and spasmophilia is to be condemned. It yields only about 230 calories per liter and its high salt content contraindicates its use. The routine use of lime water in food mixtures is of course a bad practice. It should never be used without definite indications.

In closing, I wish to say just a word concerning the proprietary infant foods. Much

of the condemnation which this class of products has suffered in the past has been undeserved. Many of them, especially the malt preparations are exceedingly valuable. They should not, however, be used in a hit or miss fashion. The physician should inform himself as to the composition of the food to be used, the caloric value of a given amount and the indications for its use precisely as would be done if a new drug were to be administered. The directions on the package are best ignored, as it is impossible to make them apply to more than a small percentage of children.

If one has a thorough knowledge of what is now known concerning the underlying principles of infant feeding, rules and methods need no longer be laid down, for each case will suggest the method or the rule by which it should be governed.

CORRESPONDENCE.

November 22, 1913.

Editor NEW YORK STATE JOURNAL OF MEDICINE:

MY DEAR DOCTOR:

The article on "The Present Obligations of Physicians Regarding Syphilis and Salvarsan, by Dr. Ruggles, of Rochester, published in your issue of November, contains many valuable suggestions which it would be well for physicians to bear in mind; but it may be questioned whether his optimistic views upon the value of salvarsan, considering the short time this has been in use, are shared by all those whose experience in the use of that drug entitles them to be heard upon that important subject.

It is common knowledge that the value of new remedies is always overestimated, because their shortcomings are their last properties to be discovered. For this and other reasons, I should be the last man to approve the passing of laws to make the treatment of syphilis by salvarsan, or by any other method, obligatory, as suggested by Dr. Ruggles. It must not be lost sight of that many suggestions, recommendations and advices proffered by enthusiastic experimenters, during their investigations of certain new remedies, are mostly tentative, pointing out the direction of further investigation, with a view to corroborate or contradict what has already been observed and, therefore, should not be regarded as infallible rules.

Dr. Ruggles is of opinion that the contagiousness of syphilis is on the average obliterated by the use of two or three injections of salvarsan and that mouth and moist genital lesions following its use are very infrequent.

Against the experience of Dr. Ruggles, that of Prof. Gaucher, who asserts that relapses almost invariably occur after treatment by salvarsan, can be adduced. He reports a great number of relapses from the records of his clinic at the St. Louis Hospital, Paris, of which the following are a few examples:

A woman, aged 28, had mucous patches on the vulva in October, 1911. She had been given three injections of 0.4, 0.4 and 0.6 gramme. On February 2d, 1912, there was well-marked relapsing roseola.

A woman, aged 24, had a chancre of the vulva in August, 1911, and had been given three injections of 0.3, 0.4 and 0.5 gramme. The chancre rapidly disappeared; but on November 15th, mucous patches appeared, and, in December, these had the cauliflower appearance observed in women who had never been treated.

A man in the tertiary stage of syphilis had a relapse of mucous patches of the lips. He was given three injections of 0.3 gramme. Two months later the patches had ulcerated at the commissures of the mouth and the tongue was invaded.

Many other authorities could be cited who have had similar experience.

Moreover, Prof. Gaucher has seen several cases of young wives infected by husbands, who thought themselves cured, showing the consequences of the false sense of security created by too great a reliance upon the power of salvarsan to obliterate contagiousness.

One important point that must be noted is that all cases of syphilis exhibit widely different degrees in severity. Even among untreated cases, some are of a very mild type and may be fully recognized only when tabes or paresis appear. Investigators are often too prone to give credit to the remedy for the mildness of those attacks, and to reckon them among the cures. Moreover, how can we say that salvarsan has any effect in preventing those late consequences of syphilis, when tabes, for instance, very rarely makes its appearance before six or seven years after the onset of the disease, and in some cases even as much as twenty years. No conjecture upon this ground can, therefore, be based upon actual facts, since salvarsan has only been in use some three or four years.

Dr. Ruggles regards the fact of numerous cases of early reinfection after salvarsan treatment as the most positive proofs of the superiority of salvarsan over mercury in the treatment of syphilis; but I, who am not so enthusiastic over the new treatment, am inclined to consider the possibility of this easy reinfection being due to the destruction by salvarsan of the anti-bodies already produced by the patient's reaction upon the invasion of the spirochetæ for his own immunization.

We must not forget the toxic action of arsenic (salvarsan) upon the tissues as well as upon the spirochetæ. Ringer classified this drug as a profound protoplasmic poison.

When salvarsan was brought to the notice of the profession three or four years ago, it was said to cure syphilis with one injection. Soon, however, it was found necessary to resort to repeated injections, which did not, even then, give complete satisfaction; and at the late International Medical Congress, held in London, no less an authority than Prof. Ehrlich himself agreed that it was necessary to combine mercury with salvarsan to effect a complete cure. Will the next pronouncement be that mercury will do without the salvarsan? I do not say that myself. If salvarsan can help in the cure of that dreadful disease, which I think it can, by all means let us employ it, but cautiously. It would appear to me, as our knowledge of salvarsan would show at present, that the effect of salvarsan upon syphilis is very similar to that of iodide of potassium, with this difference that salvarsan has its greatest influence upon the early manifestations of the disease; whereas, iodide of potassium works best in the later stages; but neither salvarsan nor iodide of potassium has the specific curative effect of mercury upon syphilis.

One other point requires notice. Mercury and iodide of potassium are remedies of comparative safety in the hands of physicians, but the same cannot be said of salvarsan, even in the hands of the most experienced, numerous accidents having followed its administration, such as optic neuritis, paralysis, arsenical poisoning and a great number of deaths even after small doses in vigorous, healthy individuals apart from their being infected with syphilis. Up to the present, as many at 200 deaths from salvarsan administration have been reported in medical literature and this is probably only a small portion of what actually occurred, considering how disinclined some medical men would feel to report such cases in private practice. I remember, however, two cases being reported in the lay press of New York City, only a few months ago.

PAUL Z. HEBERT, M.D., C.M.

November 12, 1913.

Dr. John C. MacEvitt,
Editor, NEW YORK STATE JOURNAL OF MEDICINE,
New York, N. Y.

MY DEAR DOCTOR: The October issue of the "JOURNAL" contains a letter from Dr. Irving S. Haynes, which demands from me, as Chairman of the Committee on Scientific Work, a brief reply.

Dr. Haynes finds fault with the length of the program in the several Section Meetings. I desire to say that this matter has received the careful attention of the Committee on Scientific Work. Last year, particularly, a strenuous effort was made to reduce the number of papers, and to limit their length. As compared with the year preceding, the program was shorter by nearly fifty per cent.

The Committee recognizes the importance of full discussion, and has allowed in the arrangement of the program what seemed to them sufficient time for this. In many of the Sections the results last year were satisfactory. In certain instances, however, the readers failed to limit themselves to the time allotted, and in that way the carefully arranged time schedule fell to pieces.

This year, as has been previously announced, a considerable portion of the meeting will be a clinical one. For the strictly literary sessions, it has already been decided to further limit the number of papers. In order to do this, however, it will be necessary for the Committee to say "no," to many insistent demands for room on the program, which are wont to present themselves, even at the eleventh hour.

I trust that this explanation will show that the evil complained of by Dr. Haynes is receiving the careful attention of those in charge.

Very sincerely yours,
THOMAS J. HARRIS,
Chairman, Committee on Scientific Work.

November 20, 1913.

Editor NEW YORK STATE JOURNAL OF MEDICINE:

Permit me to call the attention of Drs. Alexander Lambert and Louis Faugères Bishop, the authors of the two named papers on heart disease, in the November issue of your esteemed journal, to their omission of mentioning the muscles when speaking of anomalies of circulation.

The distribution of water in our body is the most important question of life. The heart sets the blood in motion, the vessels distribute it, but it is not the heart alone which moves the water—there are fluctuations of fluids in the body upon which the heart exercises no influence. Studying this distribution, we find that the heart and its action are of minor importance for the iatros (the Greek word for physician, for the one who heals), for when its functions are out of order, when its power is inadequate for the task, whenever the equilibrium between the task and the power of the heart is disturbed, we have to reduce the resistance in the circulation, thus facilitating the cardiac function. The attempt to raise the functional power of the heart is not attended with permanent success.

When we have examined a valvular anomaly in its minutest detail, by means of the complicated ingenious instruments of latest invention, we have not gained one step for treatment if we neglect the study of the circulation, which is controlled by the muscles, and this applies even more so in case of myocarditis.

Not only the heart, but also each muscle, is a pressure and a suction pump, the muscles exerting an effect upon the distribution of the blood, especially in the capillaries, and the distribution of fluids in the tissues. The most important organ for the distribution of water, where the fluid variations assume the largest dimensions, is the abdomen, and the size and weight of the belly, in case of myocarditis, are of much greater

importance in regard to therapy than the fine auscultatory symptoms.

From the two papers, written by well-known specialists on heart diseases, we see how little attention is paid to enteroptosis when co-existing with myocarditis.

A. ROSE.

Medical Society of the State of New York

COMMITTEE ON PRIZE ESSAYS.

The Committee on Prize Essays makes the following announcement: The Merrit H. Cash prize will be awarded every two years, beginning with the annual meeting of 1914. It consists of the interest on the fund for the previous year. The awarding of the prize is limited to members of the Medical Society of the State of New York.

The following subjects are suggested:

1. Social Pediatrics.
2. Discuss the subject of Cerebral Hemiplegia, its relation to Arteriosclerosis and the attending complications of diseases of the heart and kidneys.
3. The Significance and Practicability of the Phenolphthalein Test in General Surgery.
4. The Investigation and Care of Industrial Diseases.
5. Give a full description of Poliomyelitis (or cerebrospinal meningitis) with the present theories of the Etiology, Pathology and Treatment, including the percentage of recoveries in this country and abroad.
6. Discuss the Etiology and Treatment of Pulmonary Thrombosis.

The Committee, however, is of the opinion that in designating these titles it will not prevent essayists from selecting subjects of their own choice.

The essay shall be typewritten, or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope having on the outside the same motto or device, and containing the name and address of the writer. The successful essay shall remain the property of the Society, to be published as they may direct.

The Lucien Howe prize is to be continued each year. It will consist of the interest on the fund for the previous year and will amount to about \$100. The essay must be on some subject connected with ophthalmology. The same rules apply to this as in the Merrit H. Cash prize.

The essays must be in the hands of the Chairman of the Committee, Dr. Albert Van der Veer, 28 Eagle St., Albany, N. Y., not later than March 1, 1914.

DR. ALBERT VAN DER VEER,
28 Eagle St., Albany, N. Y.

DR. J. F. W. WHITEBECK,
781 Park Ave., Rochester, N. Y.

DR. EDWARD D. FISHER,
46 East 52d St., New York.
Committee.

SIXTH DISTRICT BRANCH.

ANNUAL MEETING AT ITHACA, TUESDAY, OCTOBER 21, 1913.

The meeting was called to order at 10.45 A. M. by the President, Dr. Luzerne Coville. Owing to the stormy weather the members who came by automobile were somewhat slow in arriving. The delegation from Chenango County only arrived about noon, being detained by the bad condition of the roads.

Dr. Wisner R. Townsend, Secretary of the State Society, was present and made one of his happy addresses and called upon the members to work hard for an increased membership.

Dr. Coville welcomed the presence of the delegation from Steuben County, who had just become affiliated with the Sixth District Branch and who showed their interest on this occasion.

Dr. H. T. Dana, of Cortland, presented a paper discussing a recent epidemic of septic sore throat occurring in Cortland and the vicinity. By investigation of the health authorities the epidemic was traced in 72 per cent. of the cases to the milk supplied by one dairy. The infecting agent was shown to be due to a peculiar strain of streptococci which were also demonstrated in the diseased udders of two cows of the suspected dairy. The epidemic was studied bacteriologically by Dr. Charles E. North, of New York City, with two assistants, who came to Cortland to investigate the epidemic in the interests of the milk supply of New York City. The disease in many of its features seems to be a new one. It is characterized by extreme redness of the oral, post nasal and tonsillar tissues, accompanied generally by swelling of the glands of the neck. There is frequently an exudate on the tonsils and mucous surfaces resembling at times a diphtheritic exudate, but giving a negative culture of the Klebs-Loeffler bacillus. There is considerable irregular fever and great prostration. There is often considerable dyspnoea and dysphagia from the swelling of the tissues of the neck. Complications are frequent from extension of the streptococcus infection to other structures. Many of the cases were followed by severe cases of acute articular rheumatism. Erysipelas, pericarditis, pleurisy, peritonitis, endocarditis, meningitis and general septicæmia had been some of the complications. There were several fatalities, but in nearly every case these were in elderly people or in people who had a low power of resistance.

The paper was discussed first by Dr. H. J. Ball, health officer of the city of Cortland, who gave the course of the investigation of the epidemic in Cortland and discussed the general course of the disease, giving illustrative cases and methods of treatment. The paper was also discussed by Dr. D. H. Udall, Dr. F. S. Jennings, and Dr. W. R. Townsend.

Dr. Coville read the regret of Dr. Andrew D. White at his inability to address the society on Vesalius. In his absence Dr. F. R. Wright of Ithaca gave a short sketch of Vesalius and exhibited the original edition of Vesalius, together with the original painting of Vesalius by Edouard Jean Haman, which is preserved and exhibited in the Cornell Library.

In the absence of Dr. H. L. Elyner, who is now abroad, his paper on "Pain Anomalously Distributed in Cardio Vascular Disease" was read by Dr. P. B. Brooks, of Norwich. This paper called the attention of the profession to many symptoms supposed to be functional which were really dependent upon organic cardiac disturbance. The paper was discussed by Dr. Anna M. Stuart, Dr. Arthur Booth and Dr. Arthur S. Chittenden.

Dr. William C. Thro of New York City presented a carefully prepared paper on "Vaccine Therapy, Its Theory and Application." He summarized present-day practical use of this means of treatment. The paper was discussed by Dr. Anna M. Stuart and Dr. B. F. Lockwood.

Dr. Carl E. Muench of Syracuse gave a demonstration of the injection of Salvarsan and Neosalvarsan upon two patients. He discussed points of technique and methods of treatment.

The meeting then adjourned for dinner, which was served in the Physiological Library.

The House of Delegates met at 2 P. M.

The scientific session resumed at 2.55 P. M. by Dr. Muench finishing his paper. The paper was discussed by Dr. George H. Fox, Dr. Arthur S. Chittenden, Dr. R. M. Elliot and Dr. A. J. Capron.

Professor Simon H. Gage of Cornell University gave a beautiful lantern slide demonstration of "Optical Defects and Their Correction."

The remainder of the afternoon was spent in visiting the various laboratories of the medical college and physics building, where special demonstrations had been prepared. An interesting exhibit was the ultra microscope demonstrated by Dr. E. M. Chamot. The department of anatomy under the direction of Dr. A. T. Kerr and the department of physiology under Dr. B. F.

Kingsbury had some beautiful demonstrations. Professor John S. Shearer presented an exhibition of X-ray plates and methods. A reception to the ladies was given at 4 P. M., at which the physicians' wives of Ithaca were pleasant hostesses. An organ recital was held in the University Chapel at 3 o'clock. Visits to the university buildings were made under the escort of guides at all times during the day. Owing to the stormy weather, automobile trips had to be abandoned. One hundred and twenty-six members, many of them accompanied by their wives, were present. Before leaving the members by a rising vote testified their appreciation of the hospitality of the Tompkins County Medical Society and the Cornell University officers.

The House of Delegates met at 2 P. M. and elected the following officers for the ensuing year:

President—Dr. Thomas F. Manley, of Norwich.

Vice-President—Dr. Arthur W. Booth, of Elmira.

Secretary and Treasurer—Dr. R. Paul Higgins, of Cortland.

The motion was made and carried that the next meeting place be at Norwich and the time of the meeting be changed to the first Tuesday in October.

The following amendment to the by-laws was presented and adopted by the house of delegates and spread on the minutes to be presented at the next annual meeting of the Sixth District Branch:

Amend the By-Laws relating to election of officers, Chapter II, Section 2, by striking out the words "By the duly elected delegates from the County Societies" at the end of the Section.

The Section will then read—

Section 2. The officers shall be elected by ballot at the annual meeting of the District Branch.

No further business being presented, on motion the meeting was declared adjourned.

MEDICAL SOCIETY OF THE COUNTY OF CLINTON.

ANNUAL MEETING AT PLATTSBURG, NOVEMBER 18, 1913.

The following officers were elected for the year 1914: President, Herbert S. McCasland, Saranac; Vice-President, Robert S. Macdonald, Plattsburg; Secretary, T. Avery Rogers, Plattsburg; Treasurer, Jefferson G. McKinney, Plattsburg; Censors, J. J. Robinson, Plattsburg; A. W. Fairbank, Chazy; A. Charbonneau, Keeseville; Delegate to State Society, J. B. Ransom; Alternate, W. S. Buck; Delegate District Branch, W. E. Clough.

SCIENTIFIC PROGRAM.

"The Etiology of Beriberi and the Character of the Rice which Causes Polynouritis in Man and Fowls," Major Weston P. Chamberlin, Medical Corps, U. S. A.

"Graduated Labor in the Treatment of Tuberculosis," J. B. Ransom, M.D., Dannemora.

"Hematuria—Pathological and Diagnostic Points," L. P. Schiff, M.D., Plattsburgh.

Address by S. J. Banker, M.D., President of the Fourth District Branch, "The Importance of Growth of the Medical Society."

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.

REGULAR MEETING, AT TROY, NOVEMBER 11, 1913.

SCIENTIFIC PROGRAM.

"Static Labyrinth," John J. Rainey, M.D., Troy.

"Tuberculosis of the Kidney with Report of Two Cases," R. H. Irish, M.D., Troy.

"Report of Two Cases of Spinal Anesthesia," Walter T. Diver, M.D., Troy.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

ANNUAL MEETING, NEW YORK CITY, NOVEMBER 24, 1913.

The One Hundred and Eighth Annual Meeting was held at the New York Academy of Medicine, on Monday evening, November 24, 1913. Dr. Brooks H. Wells, President, in the chair.

The Annual Report of the Treasurer, Dr. Charles H. Richardson, was as follows:

SUMMARY OF ACCOUNTS FOR THE YEAR ENDING NOVEMBER 19, 1913.

INCOME AND EXPENDITURE ACCOUNT.

Receipts.

Balance on hand November 20, 1912.....	\$3,085.95
Dues from Members	\$14,460.00
Initiation Fees	1,112.00
Fines for Illegal Practice.....	2,200.00
Milk Commission	6,980.95
Miscellaneous:	
Unexpended Balance, Committee of Fifteen	10.00
Refund of Costs <i>in re</i> Kunitzer..	49.48
Refund of Costs <i>in re</i> Schmidt..	48.95
Refund from Counsel's Office...	18.00
	<hr/>
	24,879.38
	<hr/>
	\$27,965.33

Disbursements.

State Assessment, 1907.....	\$3.00
State Assessment, 1910.....	3.00
State Assessment, 1911.....	9.00
State Assessment, 1912.....	702.00
State Assessment, 1913.....	6,825.00
Services and Disbursements of Counsel	6,690.82
Services and Disbursements of Milk Commission	6,164.64
Services and Disbursements of Secretary	443.73
Services and Disbursements of Treasurer	252.65
Printing and Engrossing	1,442.50
Clerical Services and Supplies....	1,463.35
Rent of Academy.....	482.50
Collations	600.00
Rent of Secretary's Office.....	240.00
Disbursements of Public Health Education Committee	425.00
Disbursements of Committee on Dispensary Abuse	235.00
Legislative Information	75.00
Expenses of Delegates	600.00
Initiation Fees Refunded.....	40.00
Treasurer's Bond	15.00
Funeral Notices	56.20
Rent of Lantern	10.00
Miscellaneous	39.00
	<hr/>
	\$26,817.39

Balance on hand November 19, 1913.... 1,147.94

\$27,965.33

CHARLES H. RICHARDSON, TREASURER IN ACCOUNT WITH THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

BALANCE SHEET FOR THE YEAR 1912-1913.

Liabilities.

Balance Income and Expenditure Account...	\$1,147.94
On Deposit in Irving Savings Bank, November, 1912	2,035.00
On Deposit in German Savings Bank, November, 1912	2,802.61
On Deposit in Union Dime Savings Bank, November, 1912	2,722.17
On Deposit in Union Square Savings Bank, November, 1912	2,219.34
Interest	355.55
Irving Savings Bank.....	\$82.20
German Savings Bank	98.92
Union Dime Savings Bank.....	96.09
Union Square Savings Bank....	78.34
	<hr/>
	\$11,282.61

Assets.

Cash in Lincoln National Bank.....	\$1,147.94
Cash in Irving Savings Bank	2,117.20
Cash in German Savings Bank	2,901.53
Cash in Union Dime Savings Bank	2,818.26
Cash in Union Square Savings Bank.....	2,297.68
	<hr/>
	\$11,282.61

New York, November 19, 1913.

The foregoing accounts, together with the vouchers, have been examined and found correct.

FLOYD M. CRANDALL,
WARD B. HOAG,
DANIEL A. SINCLAIR,
Committee on Audit.

The Annual Report of the Board of Censors was read by the Secretary, Dr. H. Seymour Houghton.

The Annual Report of the Counsel, Mr. Almuth C. Vandiver, was one of the most interesting ever given to the Society, showing a marked increase in prison sentences and a decrease in the fines received, thereby increasing the expense of this department to the Society. It also showed the benefit of the work of the years past by a lessening of the nefarious work of the charlatans in some of their well-beaten tracks.

The Annual Report of the Committee on Membership was read by Dr. Alexander Lyle, Chairman, showing that the Committee had investigated 137 new members, two applications having been rejected after careful and impartial examination.

The Annual Report of the Committee on Public Health, Dr. Charles E. Nammack, Chairman, reported progress.

The Annual Report of the Committee on Audit, Dr. Floyd M. Crandall, Chairman, reported that it had investigated the books and vouchers of the Treasurer, finding them correct.

The Annual Report of the Committee on Legislation, Dr. Arthur F. Chace, Chairman, reported an active year, having investigated 118 bills and had opposed and aided in defeating 5 anti-vivisection bills and an anti-vaccination bill. Much good work had been done by the Committee for the benefit of the profession. The Committee acknowledge the co-operation in all its work of the State Society.

The Annual Report of the Milk Commission was read by Dr. Rowland G. Freeman, Secretary. The Commission had certified to 11,842 quarts of milk produced on 22 farms during the year. In addition to this 2,580 quarts of inspected milk were produced on 6 farms. The Inspector made 229 visits and had spent 118 days working in the laboratory. 2,078 cows had been tested; of these, 1,428 were retests; of these, only 2.73% reacted. Of the new cows 4.66% reacted. This excellent work of the Commission has been without expense to the Society.

The Annual Report of the Special Committee on New Members, Dr. P. Clinton Pumyea, Chairman, showed that the Committee had been active during the year. The importance of this committee is hard to over-estimate, as it has to do with the type and character of the candidates who will later form the backbone of the Society.

The Annual Report of the Public Health Education Committee was read by the Chairman, Dr. Phoebe M. Van Voast. Dr. Van Voast expressed her appreciation of the work of Dr. Rosalie S. Morton and Dr. Mary Sutton Macy, who had so long served the Committee. Further, the report outlined the course of lectures of 1912-1913, and the arrangement of the program for the coming season.

The Annual Report of the Comitia Minora was read by the Secretary, Dr. John Van Doren Young. The Comitia Minora held 8 Stated and 6 Special Meetings. At each there had been a quorum for the transaction of business. The Society held 1 Annual, 2 Special, 1 Adjourned and 7 Stated Meetings, the total attendance of which had been 3,446, an average attendance of 314. The Society lost by death during the year 22 members, resignations 26, resignations and transfers 5, dropped

for non-payment of dues, 22, total loss 75. Active membership 2,531, a net increase of 62 members during the year. During the year 172 members had been actively engaged in the work of the Society in its various branches. The following Officers, Censors and Delegates were elected for the ensuing year:

President, T. Passmore Berens; First Vice-President, Howard Lilienthal; Second Vice-President, Frederic E. Sondern; Secretary, John Van Doren Young; Assistant Secretary, J. Milton Mabbott; Treasurer, Charles H. Richardson; Censors, Edward S. Peck, Brooks H. Wells, J. Bentley Squier; Delegates to the State Society, Brooks H. Wells, John Van Doren Young, Thomas S. Southworth, J. Bentley Squier, J. Milton Mabbott, Nathan E. Brill, William Shannon, Eugene H. Pool, Alfred C. Prentice, Ward B. Hoag, Ralph Waldo, Harold Barclay, Matthew L. Carr, John A. Bodine.

The following amendments to the By-Laws were passed:

Amend Chapter VI., Article 8, by inserting "and voting" after the word "present," making the last sentence of this article read: "A three-fourths vote of the members present and voting shall be necessary for expulsion."

Amend Chapter VI., Article 11, by omitting the entire article, as it is identical with Article 2 of the same Chapter.

The Scientific Session consisted of a paper by Dr. Clarence McWilliams entitled, "The Function of the Periosteum in Bone Transplants, Based on Human Transplantation and Animal Experiments."

SUFFOLK COUNTY MEDICAL SOCIETY.

Annual Meeting at Riverhead, October 30, 1913.

The Society was called to order by its President, Dr. G. H. Turrell, with 27 members and 5 visitors present.

The minutes of the last meeting were read and approved.

The following officers were elected for the year 1914:

President, S. R. Corwith, Bridgehampton; Vice-President, B. F. Many, Port Jefferson; Secretary, Frank Overton, Patchogue; Treasurer, B. D. Skinner, Greenport; Censors, J. A. Squire, W. S. Bennett, N. S. Wadhams; Delegates to the State Society for 1914 and 1915, M. B. Heyman; Alternate, Guy H. Turrell.

Drs. W. Franklin Wood, of Bay Shore, and Cornelius A. O'Leary, of Patchogue, were elected to membership.

The Committee on a county tuberculosis hospital reported that the site at Holtsville had been purchased, and a Committee of Supervisors appointed to secure data and formulate plans for future action. The Legislative Committee reported its activity relating to the passage of the Public Health law and its opposition to some laws which were defeated.

On motion it was unanimously carried that this Society considers it unethical conduct for any member to make examinations of school children for school authorities under the new education law at prices which are lower than those charged to private individuals for similar services.

On motion Drs. Halsey, Moore and Loper were appointed a committee on fees for school examinations.

On motion, Drs. Halsey and Baker were appointed a committee on a county milk commission.

Drs. Lewis and Allen were appointed a committee to draft suitable memorials on the deaths of Drs. J. D. Brundage and Samuel Blume. The Society reaffirmed its action of October 31, 1912, in asking that the directory of the State Medical Society be published only once in five years instead of every year as at present.

On motion it was voted to hold the next meeting at the Hotel Astor, New York City, on the afternoon preceding the meeting of the House of Delegates of the State Medical Society, April 27, 1914.

SCIENTIFIC PROGRAM.

President's Address, Guy Hanford Turrell, M.D., Smithtown Branch.

"Syphilis at the Beginning of the Twentieth Century," James McFarlane Winfield, M.D., President of the Medical Society of the County of Kings.

Address by William Francis Campbell, M.D., President of the Medical Society of the State of New York. Greetings from Victor A. Robertson, M.D., President of the Second District Branch.

On motion, the Secretary was instructed to have an abstract of the minutes printed and mailed to each member.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ARTIFICIAL PARTHENOGENESIS AND FERTILIZATION. By JACQUES LOEB, Member of the Rockefeller Institute for Medical Research. Originally translated from the German by W. O. REDMAN KING, B.A., Assistant Lecturer in Zoology at the University of Leeds, England. Supplemented and revised by the author. The University of Chicago Press, Chicago. Price, \$2.50 net; \$2.68 postpaid.

APPLIED PATHOLOGY, being a guide to the application of Modern Pathological Methods to Diagnosis and Treatment. By JULIUS M. BERNSTEIN, M.D. (Lond.); D.P.H. (Camb.); M.R.C.P. Assistant Physician (late pathologist) to the West London Hospital; Lecturer in Clinical Pathology to the Post-Graduate College; Physician to the Putney Hospital and to the Royal Ear Hospital; Lecturer in Bacteriology to the Westminster Hospital Medical School, etc. Illustrated with 5 colored plates and 46 drawings. London: University of London Press. Published for The University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde, Oxford University Press, 35 W. 32d St., N. Y. Price, \$3.75.

CANCER OF THE BREAST. An experience of a series of operations and their results. By CHARLES BARRETT LOCKWOOD, F.R.C.S. (Eng.), Consulting Surgeon to St. Bartholomew's Hospital, etc., etc. London. Henry Frowde, Oxford University Press, 35 W. 32d St., New York City. Hodder & Stoughton, Warwick, E. C., 1913. Price, \$3.00.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS. For Students and Physicians. By JOHN H. MUSSER, M.D., LL.D., late Professor of Clinical Medicine in the University of Pennsylvania; formerly President of the American Medical Association, etc. New (sixth) edition, revised by JOHN H. MUSSER, Jr., B.S., M.D., Instructor in Medicine in the University of Pennsylvania; Assistant Physician to the Philadelphia Hospital; Physician to the Medical Dispensary of the Presbyterian Hospital; Physician to the Medical Dispensary of the Hospital of the University of Pennsylvania. Octavo, 793 pages, with 196 engravings and 27 colored plates. Cloth, \$5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

MODERN MEDICINE. ITS THEORY AND PRACTICE. In Original Contributions by American and Foreign Authors. Edited by Sir WILLIAM OSLER, Bart., M.D., F.R.S., Regius Professor of Medicine in Oxford University, England; Honorary Professor of Medicine in Johns Hopkins University, Baltimore; formerly Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal; and THOMAS McCRAE, M.D., Professor of Medicine in the Jefferson Medical College, Philadelphia; Fellow of the Royal College of Physicians, London; formerly Associate Professor of Medicine in Johns Hopkins University, Baltimore. In five octavo volumes of about 1,000 pages each, illustrated. Volume I, Bacterial Diseases, Diseases of Doubtful or Unknown Etiology, Non-Bacterial Fungus Infections, the Mycoses. Just Ready. Price per volume, cloth, \$5.00, net; half morocco, \$7.00, net. Lea & Febiger, Publishers, Philadelphia and New York.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume II, Number V. (October, 1913.) Octavo of 174 pages, 52 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Published Bi-Monthly. Price per year: Paper, \$8.00; Cloth, \$12.00. W. B. Saunders Company, Philadelphia and London.

SURGICAL EXPERIENCES IN SOUTH AFRICA, 1899-1900. Being mainly a Clinical Study of the Nature and Effects of Injuries Produced by Bullets of Small Calibre. By GEORGE HENRY MAKINS, C.B., F.R.C.S. Senior Surgeon to St. Thomas's Hospital, London; Vice-President of the Royal College of Surgeons of England; Late Joint Lecturer on Surgery in the Medical School of St. Thomas's Hospital; Member of the Court of Examiners of the Royal College of Surgeons of England, and one of the consulting surgeons to the South African Field Force. Second edition. London: Henry Frowde, Hodder & Stoughton, Warwick Square, E. C.; Oxford University Press, 35 W. 32d Street, New York City. Price, \$3.75.

DYSENTERIES. Their Differentiation and Treatment. By LEONARD ROGERS, M.D., F.R.C.P., B.S., F.R.C.S., C.I.E., I.M.S. Physician to the Isolation Ward (Cholera and Dysentery), Medical College Hospital, and Professor of Pathology, Medical College, Calcutta. London: Henry Frowde, Hodder & Stoughton, 20 Warwick Square, London, E. C. Oxford University Press, 35 W. 32d Street, New York City, 1913. Price, \$3.75.

THE PRINCIPLES AND PRACTICE OF MEDICAL HYDROLOGY. Being the Science of Treatment by waters and baths. By R. FORTESCUE FOX, M.D. (London); F.R. Met. Soc.; Late Hyde Lecturer on Hydrology, Royal Society of Medicine. London: University of London Press. Published for the University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde. Oxford University Press, 35 W. 32d Street, New York City. Price, \$2.00.

PATHOLOGY, General and Special. A Manual for students and practitioners. By JOHN STENHOUSE, M.A., B.Sc. (Edin.), M.B. (Tor.), formerly Demonstrator of Pathology, University of Toronto, Toronto, Canada. Second edition, revised and enlarged. Including a selected list of State Board examination questions. Illustrated with 29 engravings and a colored plate. Lea & Febiger, Philadelphia and New York.

STAMMERING AND COGNATE DEFECTS OF SPEECH. By C. S. BLUEMEL. Volume I, the Psychology of Stammering. Volume II, Contemporaneous Systems of Treating Stammering; Their Possibilities and Limitations. New York: G. E. Stechert & Company. London—Leipzig—Paris, 1913.

THE PRACTITIONER'S VISITING LIST for 1914. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, postpaid, to any address, \$12.5. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

DISEASES AND ITS CAUSES. By W. T. Councilman, A.M., M.D., LL.D., Professor of Pathology, Harvard University. New York, Henry Holt & Company. London, Williams & Norgate.

YEAR-BOOK OF THE PILCHER HOSPITAL. For the period from April 1, 1912, to March 31, 1913. Being the third year of the operation of the Hospital. 145 Gates Avenue, corner of Grand Avenue, Brooklyn, New York, 1913.

BOOK REVIEWS.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By ANTHONY BASSLER, M.D., Prof. Clinical Medicine and Vis. Phys. N. Y. Polyclinic Hosp.; Chief Gastro-Enterologist, German Poliklinik; Visiting Gastro-Enterologist, People's Hosp.; Member American Medical and Medical Society State New York, N. Y. Academy of Medicine, etc. Illustrated with numerous half-tone and line text engravings. Philadelphia. F. A. Davis Company, Publishers. 1913. Price, \$7.50 net in half morocco; \$6.00 net in cloth.

The second edition of "Bassler" appears as a volume of 665 reading pages, with 191 pages additional for plates and illustration, which certainly add much to the general interest of the book.

A general arrangement similar to that of the first edition prevails, gastric neuroses as a chapter by itself being omitted in the index.

The treatise shows an enormous amount of hard work done by the author for which due credit must be given. It savors perchance too much of the idea that in order to arrive at correct diagnosis, cases should be referred to the so-called "Internist."

The surgical problem is most fairly dealt with. A trifle too much stress is laid upon the value of laboratory diagnosis.

The book is certainly up-to-date, and contains all practical information together with much of a more theoretical nature, which might perhaps have been presented in a somewhat smaller compass. H. W. L.

TEXT-BOOK OF DISEASES OF THE NOSE, THROAT AND EAR, for the use of students and general practitioners. By FRANCIS R. PACKARD, M.D., Prof. Diseases Nose and Throat, Philadelphia Polyclinic Hosp. and College for Graduates in Medicine; Aurist Out-patient Department, Pennsylvania Hospital. Second Edition, with 145 illustrations. Philadelphia and London. J. B. Lippincott Company. Price, \$3.50.

This work, written, as stated on the title page, for students and practitioners, is clear and simple, almost conversational, with the presentation of various diseases, illustrated here and there with interesting cases in the author's personal experience. The written chapters have a didactic note suggesting modifications and amplifications of lectures presented to his students and are none the less pleasingly presented from that view. It is avowedly a teacher's text-book, and as such, the reviewer considers it a good model. It is plain and straightforward in the presentation of the essentials of the art it designs to teach. It includes the methods of operation and technique which have become standardized, as it were, through general acceptance. Little attempt has been made to give the "latest word" on recently tried operations, but in the matter of comparatively recent departures, like tracheoscopy and bronchoscopy, very good presentations are incorporated. Perhaps the most distinctive characteristic of Dr. Packard's book, and one which meets with the commendation of the reviewer, is the pains the author has taken to insist on the nose, throat and ear as distinctly parts of the body and not isolated entities in themselves. Thus the writer in his chapter on nosebleed (XIV) has given not only the local causes, but also the systemic causes, of epistaxis. The reviewer read this chapter with the anticipation of finding some etiological factors of this phenomenon omitted by the author, but was pleasantly disappointed. The author has also a chapter on diseases of the eye caused by or influenced by nasal and nasal sinus disorders.

We are not sure that it is stated in the work that nearly all of the many illustrations are made for this work, but such is the case. This factor insures in any text-book a wider circulation than it would otherwise obtain. This is no longer a novelty in text-books of American authors. But as original pictures indicate a growing spirit of self-reliance, research and some of the

other qualities which signify in medicine, as in other fields, Americanism as a growing factor in the world's work, we are pleased to find it here. The book has 377 pages. About two-thirds of the book (twenty-two chapters) treats of the nose and throat; somewhat less than a third of its pages (nine chapters) is devoted to the ear.

WILLIAM C. BRAISLIN.

ESSENTIALS OF PRESCRIPTION WRITING. By CARY EGGLESTON, M.D. Philadelphia and London. W. B. Saunders & Co., 1913. 150 pp. 16mo. Cloth, \$1.00.

Eggleston's little volume is designed for the medical student's use and is an adequate presentation of the subject of prescription writing. At the same time a reading of it by the practitioner would help to fortify him against the blandishments of certain commercial interests which now profit in proportion to his possible lack of facility in writing "proper prescriptions to fill any need," which is what Eggleston's book professes to prepare one to do. A. C. J.

TEXT-BOOK OF GENERAL AND SPECIAL PATHOLOGY FOR STUDENTS AND PRACTITIONERS. By HENRY T. BROOKS, M.D., formerly Prof. Pathology N. Y. Post-Graduate Medical School; Consult. Pathologist Beth-Israel and New Rochelle, N.Y. Hosp.; Bacteriologist St. Mark's Hosp.; Member Academy Medicine, N. Y. State Society, etc., etc. Illustrated with 525 half-tone and other text engravings (110 in colors), also 15 full-page plates in colors, containing 40 figures. Philadelphia. F. A. Davis Company, Publishers. 1912.

The indebtedness which the author acknowledges in his preface to Prof. Robert Langerhan's "Grundriss der Pathologischen Anatomie" might serve as a means to exonerate him from some of the unfavorable criticism to which the work lends itself.

The tendency (always to be discouraged) to very long paragraphs is especially noted in the beginning chapters, pages 16 and 17 including one of 48 lines and page 26 one of 50 lines. And this, in a discussion of Ehrlich's side chain theory.

Portions of the text show lack of system in nomenclature. That mononuclear leucocytes are the type of pus cells ever in excess, whether in infiltration or liquefaction, is not generally conceded.

In a discussion of the "Nature of Disease," the reader finds it difficult to follow the author when attempting to solve the perplexities of thought and expression contained on pages 4 and 5. The average student would be hopelessly lost. Why all the Latin terms for processes usually expressed in forceful Anglo-Saxon? This surely is not the tendency of the day.

The illustrations are numerous, though less than 80 out of 1,081 are devoted to the section on tumors. Some of the histological pictures are very indistinct, especially those colored pink; they are shown to much better advantage in the original Ziegler's text, from where many of them are taken.

It is gratifying to note the division of the infectious diseases into contagious and communicable. To make the statement that in epidemic cerebrospinal meningitis the causative agent is not always the same, is wrong. Epidemic cerebrospinal meningitis and meningococcus meningitis are synonymous and so classified in text-books and listed by boards of health.

The object of the author in bringing forth this work is most commendable; the task well-nigh impossible. The text-book of the future on pathology will have to be an entirely different work that the one under consideration and others like it. It will have to devote itself to pathology, gross and histological, and omit the attempt to also include bacteriology, hematology, serology, immunology and allied subjects. The requirements in these subjects in and out of medical schools are too exacting and too important to be satisfactorily supplied by the cursory consideration that one volume work can give them.

S. R. BLATTEIS, M.D.

HEADACHE. Its varieties, their nature, recognition and treatment. A theoretical and practical treatise for students and practitioners. By DR. SIEGMUND AUERBACH, Chief Polyclinic for Nervous Diseases in Frankfurt, A. M. Translated by ERNEST PLAYFAIR, M.B., M.R.C.P. London. Henry Frowde, Oxford University Press, 35 W. 32d Street, New York City. Hodder & Stoughton, Warwick Square, E. C. 1913. Price, \$1.50.

Ernest Playfair's well-executed translation of Auerbach's treatise on headaches may be said to fill a need, despite the existence of several good works on the subject. For by no means has the last word been said on differential diagnosis and rational treatment founded thereon. Classed as a minor malady, headache is slighted somewhat as a subject of careful study by many practitioners. Those who wish to have a clear treatise on headache will not be disappointed in this work. Only those forms of pain are discussed which are referred by the patient to the interior of the cranium, whatever the etiology and point of origin may be. Chapters worthy of special mention are those on migraine, nodular (rheumatic) or induration headache, headaches in brain disease, and headaches associated with disorders of the special senses, in which are included those due to accessory sinus disease. A. C. J.

SAFEGUARDING THE SPECIAL SENSES. General Advice Regarding the Use and Preservation of the Eyes, Ears, Nose and Throat. By HENRY O. REIK, M.D., formerly Associate in Ophthalmology and Otology in the Johns Hopkins University, and Surgeon in the Baltimore Eye, Ear and Throat Hospital, Baltimore, Md. Illustrated. Philadelphia. F. A. Davis Co. 1912.

This is a book intended to educate the lay public and has an interest for the doctor in several ways. Firstly, from the fact that it is written in a simple, readable style, and deals with the hygiene of three of the special senses in an intelligent, interesting manner. Secondly, because it is a book that he can recommend as a safe guide for his patients. The reviewer is not aware how large the public is which buys books on hygienic topics, but he imagines that it would be larger than it is were a large proportion of them written in easily understood English. We think the present author has conceived his book in a broad spirit and has succeeded admirably in making his subject plain. His explanation (pp. 35-36) of the unwisdom of consulting the optometrist or graduate refractonist, rather than a reputable eye specialist, who is first a physician, is an example of what the reviewer means in this connection. There is no bitterness, simply a plain statement of obvious facts. The entire number of subject-matter pages is about 100. There are a few good illustrations. WILLIAM C. BRAISLIN.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Lectures and Especially Prepared Original Articles. Edited by HENRY W. CATTELL. Volume III, 23d Series, 1913. Philadelphia and London. J. B. Lippincott Co., 1913. 303 pp. 8vo.

Ten articles on diagnosis and treatment, six on surgery, one on legal medicine, two on electrotherapeutics, and two on medicine, make up this volume of the International Clinics. This issue sustains the high standard of the well-known quarterly. Especially notable articles can hardly be singled out for discussion, because of practically uniform excellence. Many eminent names are on the list of contributors. J.

In Memoriam

DR. JOHN S. WARREN.

Dr. John S. Warren was born at Middleton, N. H., July 4, 1841. Was graduated from Dartmouth College in 1862, and from Jefferson Medical College, Philadelphia, Pa., with the degree of M.D. in 1866. Prior to his graduation he served as Surgeon to the U. S. Army during the Civil War, and was stationed at Paducah, Kentucky.

After receiving his medical degree he entered practice in New York City and remained in the active practice of medicine until 1908, when he retired and took up his residence in Atlantic City, New Jersey, where he remained until his death, July 18, 1913.

Dr. Warren was a member of the New York Academy of Medicine, the Society for the Relief of Widows and Orphans of Medical Men, and the New York Physicians' Mutual Aid Association.

He was elected a member of the Medical Society of the County of New York over forty years ago, and became its Treasurer in 1889, remaining in office consecutively until 1904, when he resigned.

RESOLUTION.

On behalf of the Comitia Minora of the Medical Society of the County of New York the Committee offer the following resolutions:

WHEREAS, In the death of Dr. John S. Warren the medical profession has lost an honored member and the Medical Society of the County of New York a faithful officer, now, therefore,

Be it Resolved, That the Medical Society of the County of New York desire to place on record its high appreciation of the character and ability of Dr. John S. Warren both as a physician and as an officer, and

Be it further Resolved, That a copy of these resolutions be sent to his family, spread upon the minutes of the Society and printed in full in the Journal of the Medical Society of the State of New York.

CHARLES H. RICHARDSON, M.D.,
JOHN VAN DOREN YOUNG, M.D.,
Committee.

DR. ELLSWORTH ELIOT.

Dr. Ellsworth Eliot was born in North Guilford, Conn., September 15, 1827, and died in this City December 9, 1912, at the advanced age of 85 years.

He graduated from Yale College in the class of 1849, with Timothy Dwight and other noted men. In 1852 he graduated from the New York College of Physicians and Surgeons, and served the following year as House Physician in Bellevue Hospital. From that time on he practiced his chosen profession for more than half a century, barring his term of service in the War of the Rebellion. He served as President of the Medical Society of the County of New York in 1872-1873. He was Vice-President of the Medical Society of the State of New York in 1875-76, and for two years was the President of the New York Society for the Relief of Widows and Orphans of Medical Men.

Dr. Ellsworth Eliot was of sturdy New England stock, and in both his private and professional life represented the highest type of American manhood. He was a keen observer with a clear and logical mind; also a fluent and interesting speaker and eminently fair in debate. No history of the achievements of the medical profession of his chosen city would be complete without the mention of his name.

BE IT THEREFORE RESOLVED, That this recognition of his eminent qualities be recorded in the minutes of the Society, and a copy be sent to his family.

WENDELL C. PHILLIPS,
FLOYD M. CRANDALL,
J. RIDDLE GOFFE,
Committee.

DEATHS.

DOUGLAS AYRES, M.D., Fort Plain, died November 20, 1913.

L. L. BRAINARD, M.D., Little Falls, died November, 1913.

GEORGE A. EDWARDS, M.D., Syracuse, died November, 1913.

FREDERICK MATTHEW HELBIG, New York City, died November 26, 1913.

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