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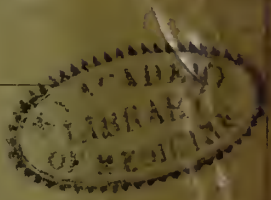

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ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

ART. I.—SPECTRAL ANALYSIS, FLUORESCENCE AND THE VITAL FLUID. By S. E. CHAILLE, M. D.

THE vaunted nineteenth century has little cause to boast of the progress made by all its intellect and all its labors, in morals and social virtues. Nations can still be found with the morals of a pickpocket; the predestined many still practise the heathen doctrine of "an eye for an eye," rather than the divine precept they profess, of "hope, faith and charity;" and the chosen few give evidence of no more lustrous virtues than their ancestors! The vices of Adam, Eve and Cain seem to be still *undiminishingly* transmitted, and "the trail of the serpent over us all," whilst leaving as deep an imprint, seems to be spreading in length and breadth as humanity augments its numbers. But if the defeats of the intellect of this century, in its contests with vice, give some weight to the somewhat profane assertion that, "humanity is a failure," we can regard the struggles and triumphs of mind over matter with only wonder and astonishment. The achievements of our own age will by these triumphs be perpetuated, so long as humanity guards its great Egyptian treasury written characters to record its deeds. So great and numerous have been the victories, rendering every force, law and substance in nature, subservient to the pleasures and uses of man, that look where we will, we find our cotemporaries struggling with ardor and enthusiasm for

fresh triumphs; and every new discovery made, every new combination which can be imagined is easily applied to new experiments. Every possible method, by which mind may wrong matter, whether dead or living, is hastily seized upon and vigorously prosecuted.

The hopes which give vitality to these labors, are not ill-founded; for it must be evident to every one, at all conversant with the recent wonderful progress in the physical sciences, that the future is pregnant with, possibly, greater achievements than the past. If our own profession be still far from the solution of the higher and perhaps insoluble problems of life, it nevertheless has not been behind-hand in its contributions to all the collateral sciences, nor slow to seize on every invention and discovery which could be utilized in its endless contest against disease and death. Medicine has much to wish for, but she also has reason to hope that many and important discoveries await her devotees, which will give fame to unknown names, honor to the profession, and benefit to the public.

As it is my greater pleasure to study, so is it my greater pleasure to record these hopes of medicine which give some promise of establishing the laws of health and disease on the firmer basis of an exact science; rather than the results of observation on the most recently advised means and most approved methods of curing disease — means and methods which are so often untrue; and when true, so often inexplicable and inadmissible to scientific proof or rational demonstration.

No single branch of physics has been, in recent years, more fully developed, nor more usefully applied to medicine, than optics; and perhaps none holds forth greater hopes of new triumphs. Without dwelling on the microscope, its clinical revelations, its inestimable physiological and pathological contributions, I will pass to the consideration of more recent optical improvements and applications, viz., Spectrometry with its Spectroscope, and Fluorescence.

With Newton who with his prism first showed that ordinary (white) light was decomposable in distinct colors, which in turn was recomposable into white light, began our knowledge of the Solar Spectrum. Though but seven colors are ordinarily assigned it, it really consists of an infinity of different tints. The discovery that these different colors possessed different powers, was like giving us a peep into the land of the fairies; and however familiar the facts, we wonder still at the marvellous magic which renders the red ray the most heating, the yellow the most luminous, and gives to the violet the most chemical power.

In addition to the peculiar and distinctive powers possessed by the different colors of the spectrum, it is necessary for my present, illustration also to remind the reader, that these colors are not continous, but that dark lines, at unequal intervals, traverse the spectrum throughout its whole extent. These "Fanenhofer's lines" (so-called from the celebrated optician who first well studied and described them), were at first described as few in number, afterwards by Fanenhofer as about six hundred; and still more recently as examined by improved magnifying powers, some three thousand have been demonstrated.

Now the different rays have not only different powers, the one from the other, but also are differently affected by different luminous substances; and this latter endowment is likewise possessed by "Fanenhofer's lines." It is found that both the colors and the "lines" of the solar spectrum undergo characteristic modifications when subjected to different lights. The spectra produced by the sun vary with its height above the horizon, and the state of the atmosphere, so the light of the sun and electric light produce characteristic spectra. Still more important, artificial light, produced by the combustion of chemical substances, affects these lines always in the same way for the same substance, but differently for different substances. This discovery, with illustrative facts, was established on principles long before recognized, in 1860, by two Germans, Kirchhoff and Bunsen. The Emperor of the French, in acknowledgment of this contribution to science, is said to have sent by a messenger, a decoration of the Legion of Honor to Kirchhoff, who declined it on the ground that any merit apparently his really belonged to Bunsen. The messenger then seeking Bunsen, offered to him the decoration, who in his turn asserted that to him belonged no merit, for he had been but one of the hands of Kirchhoff's brain. The messenger, powerless to enforce the honor unselfishly declined by each in favor of the other, returned to his Emperor, who forthwith decorated Bunsen, and advanced Kirchoff a grade higher in the Legion of Honor. This anecdote is I trust true, as it is always pleasant to credit modest deeds to meritorious men.

They "ascertained that the salts of the same metal, when introduced into a flame, always produce lines identical in color and position, but different in color, position, or number for different metals; and finally, that an exceedingly small quantity [the millionth of a milligramme] of a metal suffices to disclose its existence." From

this discovery has arisen a new method of analysis, termed Spectral Analysis, or Spectrometry; and for this has been applied a new instrument, the Spectroscope. To this is adapted a Micrometer, and in addition, for the combustion of the chemical substance, a Bunsen's burner; which may be replaced, when a more powerful heat is required, by electrical light. The spectra characteristic of sodium and potassium are peculiarly well marked. Those of cerium and rubidium enabled Kirchoff and Bunsen to add these two new metals to the chemical elements; and they extended their researches so far as to positively determine some of the substances of which even the sun and moon are composed.

Whilst the Spectroscope constitutes a distinct instrument, it has also been applied by Sorby & Browning of London, to the microscope. Spectral analysis cannot be said to have made, thus far, any very valuable practical contributions to medicine; but it certainly holds forth great hopes for the future, so soon as the optical, or spectral, individual characteristics of the various chemical elements and compounds, are more thoroughly investigated and established. For of all methods of detecting chemical substances, whether in a liquid or gaseous state, none are comparable in delicacy to the spectroscope. One example may be cited in illustration. One of the most delicate of all the chemical tests is the characteristic and familiar reaction between starch and iodine. This is so delicate. that it is stated that starch will indicate the presence of one grain of iodine in four hundred and fifty thousand times its weight of water, If this be wonderful, what are we to think of the miraculous power of the spectroscope, which gives the spectrum, characteristic of sodium, produced by a flame in which is burned one two-hundred-millionth of a grain of Soda? The detection of such infinitismal proportions of substances will render the quantitative analysis of bodies (having characteristic spectroscopic characters) by the most refined of the old chemical processes, so gross as to enable us cheerfully to abandon them.

The question then, of greatest practical importance is, what substances have characteristic spectroscopic characters? In addition to those above-mentioned, it may be also stated that blood, its coloring matters, iron, permanganate of potash, and many other bodies unknown to me, have already had their spectral peculiarities discribed; and I have been assured, on good authority, that this method has been successfully applied to the detection of adulterations in

wines and other alcoholic liquors. This incomplete list, even if completed, would give but a very inadequate idea of all we have reason to expect from this method of analysis, which is still in its infancy. Though a sanguine, it is not a groundless hope, that nature has conferred on every substance optical peculiarities which need only to be thoroughly investigated, to enable us to distinguish, by the *aided eye*, each one from all others. To justify, in some degree, this sanguine hope, let us briefly review the nature and extent of spectral analysis. Its power of extension should certainly be great, to enable it to include every substance in nature.

Spectral analysis is founded on the fact, that different substances, through which light is transmitted, have different refrangible powers over that light; and that the prism of the spectroscope (whether alone, or as applied to the microscope) is the best means to demonstrate refrangibility of light. As to the extent of the power of the spectroscope, it must be borne in mind that the spectrum has not only seven distinct colors, but an infinite number of tints; that different substances not only give a different shade to some of these tints, but that some substances cause what are termed "absorption bands," i. e., render altogether invisible (or absorb) some of the various colors of the spectrum; furthermore, that different substances exercise different powers on the three thousand "Fanenhofer's lines;" still farther, that substances may be subjected to investigation by the spectroscope, both in combustion and in solution. Now if we will subject to the rules of permutation and combination these seven colors, infinite number of tints, absorption bands, and three thousand Fanenhofer's lines, as affected by substances both in combustion and solution; it will be found that even the infinite number of substances in nature, if possessing special spectroscopic characteristics, have found in the spectroscope an instrument which probably has the power to demonstrate the individual peculiarities, however endless and various, of each one. Should the labor of time bring these hopes to even partial fruition, not only medicine, but every art and science, will be greatly advanced in their onward progress by spectroscopy; and chemistry will derive therefrom advantages innumerable and inestimable.

Closely allied to this subject is that of Fluorescence, which, while lending its aid to spectroscopy, not only promises, but has already accomplished, unaided, results important to the profession. I have deemed a brief elementary description of each well worthy its atten-

tion; that the principles on which are based these refined analysers may be correctly understood, and their present and future contributions to science intelligently appreciated by all.

Certain bodies possess the power of modifying the color of the light which, falling on their surface, is reflected therefrom. The color is modified, because these bodies possess the power of modifying the refrangibility of rays reflected from their surface. These substances manifest this power: (1) when placed in the spectra of solar or electric light, they render the most refrangible (the violet) rays visible, which before this modification were not perceptible; (2) when looked at by transmitted light they appear colorless, but by reflected light have a bluish appearance; (3) when placed under the influence of the spectral rays (more especially of the violet and ultra-violet), these substances give different colors, enabling us in many cases to distinguish one from another.

This peculiar power was first observed in the brilliant, lamellated fluoride of calcium, or fluor-spath, hence the origin of the generic term Fluorescence. It is now taught, however, that most bodies, and especially organic bodies, are more or less fluorescent. Among those possessing characteristic fluorescent properties may be mentioned, in addition to the above, lithium, the compounds of uranium, datura stramonium, atropine, sulphate of quinine, and the human cornea and skin.

There is still another property of fluorescent bodies, interesting to the physician. Whilst modifying the color of light reflected from their surfaces, they, in turn, undergo molecular changes or modifications, so as often to be seriously affected by the exercise of their fluorescent power. This is particularly the case when violet rays, those most refrangible and most highly endowed with chemical action and power, are used to produce the fluorescent action of the body. Erythema, erysipelas and ulcerous keratitis have been manifestly caused by an exposure of the skin and cornea to an excess of this action; and it is asserted that, by a like action, *coup de soleil*, or sun-stroke, is produced, independently, to a greater degree than supposed, of temperature.

These remarks are designed as an explanatory preface to the recent researches of Dr. Bence Jones, of London, in regard to the therapeutic action of sulphate of quinine. In 1865 he discovered, by the fluorescent test, that lithium passed in a few minutes after its administration, into the entire circulation, and thus to every, even

the most distant tissue; that it remained in the body for three or four days, but did not completely disappear for seven or eight days. Similar experiments with quinine have caused him to conclude that there exists, in the living and dead tissues of man and other animals, a fluorescent substance very similar to quinine, which he designates "animal quinoidine," in contra-distinction to the vegetable quinoidine on which depends the action of quinine; and that the therapeutic action of quinine receives at last this satisfactory explanation, that malarial fevers result from a poison, which destroys a portion of the normal and requisite animal quinoidine in the economy, and that the administration of vegetable quinoidine restores to the system the required quantity of quinoidine, which the disease has destroyed. *En passant*, it is suggested that the healing virtues of arsenic, in the same class of diseases, may be due to its power of preserving organic substances and therefore animal quinoidine. He regards this animal quinoidine as (like urea, etc.) one of the retrograde transformations of albumen, and believes that the supply of vegetable quinoidine to the system arrests in it the abnormal transformation of albumen into quinoidine, caused by disease. This arrest or resistance to changes or transformations going on in the system explains (for him) the deafness, prostration, etc., which follow less doses of quinine.

Leaving aside his theories, it is evident that his satisfactory conclusions depend on whether he has really discovered a new substance, entering normally into the composition of the tissues, which is identical or convertible with quinine. The facts illustrated by the experiments, on which his conclusions are based, are interesting in several particulars.

A solution of sulphate of quinine, when subjected to electric light, gives a characteristic fluorescence, which constitutes it a test, delicate almost beyond conception. The minutest quantity of this substance, existing in a fluid or tissue, can be detected. One two-hundred and fifty thousandths of a grain gives a distinct fluorescence, and the presence of one grain, dissolved in more than a million times its weight of water, is distinctly demonstrated. Different shades of the same color indicate the different qualities of quinine present; and that by the comparison of a number of solutions variously graduated with solutions containing unknown quantities, approximative quantitative analysis of the latter is obtained. By these means, Dr. Jones found that, after the administration of quinine, it could be detected in the following fluids and organs, in quantities decreasing from the

first to the last mentioned, viz., liver, kidneys, urine, bile, blood, brain, muscles and optic lens; that in fifteen minutes after its administration, it has penetrated everywhere; that its maximum is attained in three and endures six hours; that it does not entirely disappear for seventy-two hours.

The facts on which are founded his belief that an animal quinoidine exists normally in the economy, are that, in the healthy fluids and tissues of animals which have taken no quinine, is found a fluorescent substance, "very similar to quinine;" and still farther, that all the known chemical tests (he cites five) of quinine, give identically the same reactions for the two substances, animal and vegetable quinoidine. Avowing an ignorance of this subject, very great in comparison with Dr. Jones' knowledge, I nevertheless venture a fresh criticism on animal quinoidine: First, the fluorescent test, though instructive, does not give absolute proof; because too little is yet known of the fluorescent properties of the various bodies in nature, to enable us to assert that two of these having "very similar" fluorescent properties, are therefore identical, or even closely allied substances; and because the fluorescent properties of sulphate of quinine, though "similar" to, are visibly to the eye, not identical with the fluorescence of the so-called animal quinoidine. I may, parenthetically, call attention to the fact that, so far as my knowledge of Dr. Jones' researches extends, he allows us to suppose that his vegetable quinoidine was really in his expiriments sulphate of quinine, and that his analogy between vegetable and animal quinoidine should rather be between sulphate of quinine and an *animal sulphate of quinine!* Secondly, the identity of the chemical reactions is also subject to the grave charge that all the known chemical tests for quinine give similar reactions for many if not all the alkaloids, and that there is no test which enables us to distinguish quinine, absolutely and infallibly, from every other substance. I may here add, as of some interest, that M. Niklés, Professor of Chemistry, at Nancy, has recently announced that he has succeeded in forming a perchloride of lead, which furnishes reactions distinguishing strychine, brucine, quinine, and other vegetable alkaloids, the one from the other.

Though not satisfied that Dr. Jones has succeeded in fully proving the existence, etc., of an animal quinoidine, we are not the less willing to pay our tribute of congratulation for the interesting facts he has proved, and for the pioneering experiments he has made into

nature's arcana by a new method which, there is reason to hope, will prove most serviceable to his profession. He states that "it is probable that medicines circulating in the blood pass outside the circulation, even into the non-vascular tissues, and produce their effects not only on the blood, but also on the tissues themselves, playing an important part in all their chemical changes; and there is reason to hope, that chemistry may succeed in forming or discovering new medicines, calculated not only to control the chemical changes of the tissues in fevers and inflammations, but still farther to remove the products of insufficient chemical action, even in those diseases, as cataract and gout, which affect the non-vascular tissues."

The interesting and conclusive experiments of Bernard on the effects of "*les substances toxiques et médicamenteuses*," establishing the great facts that certain poisons caused death solely by paralysis of the motor nerves, others by their action on the sensory nerves, and others again by destroying the contractility of muscles, seem likely to bear abundant fruit, and lend to Therapeutics a little more accuracy and precision than has characterized it. It is with infinite satisfaction, that we read the attempts, in many cases successful, to establish what is done by, and what becomes of the physic we give, and by what action on what organs medicines kill or cure. The language of Dr. Jones may be well borrowed here: "The progress of all accurate knowledge of the actions of medicines depends now on exact chemical and physical experiments, and by the perfection of these alone, will the practice of our profession lose its doubts and difficulties and disagreements and deceptions, and become esteemed by all as the art that can confer the highest benefit upon mankind. Instead of being, as formerly, blind wielders of heavy clubs, that may cure the disease or kill the patient, or instead of being as at present "judicious" or "injudicious" "bottle-holders," physicians at some future time will estimate exactly the effect of the increased or diminished action of any one force upon all the other forces concerned in the production of general or local disease, and by adding to the resistance of one or more forces, or by liberating more energy by means of the powers that are latent in food and medicine, they will restore that equilibrium of action in the body upon which our health depends."

Whilst recording these recent contributions of physics to medical science, place may also be given to the alleged discovery by M. Martin Ziegler, of a new force in nature. Such discoveries are so often an-

nounced, that the world has acquired the habit of receiving their announcement with a smile of incredulity. On such subjects, skepticism is eminently justifiable, and I would not record this claimed discovery, but for two reasons. First, having the pleasure of M. Ziegler's acquaintance, I am convinced that, if he be an enthusiast, he is neither an ignorant nor a designing one. Secondly, because he so describes his discovery, that any one familiar with such subjects may, if he deems it of sufficient importance, satisfy himself of its truth or falsehood.

M. Ziegler asserts that a force, which he probably misnames the "Vital Fluid" and which somewhat resembles electricity and galvanism, is developed whenever an azotized and a carbonaceous body are placed in contact; and that when successive layers of these substances are superimposed (as in a glass tube) the one upon the other, the force generated may be conducted to the person by silk cords attached to corks which close the ends of the tube, and is sufficiently powerful to give rise not only to sensible, but dangerous results, that may excite grave disturbance in the nervous system. He asserts that this force plays an immense *rôle* in animal and vegetable physiology, explains very many of their heretofore inexplicable phenomena, and is destined to give renewed impetus to progress in all the natural sciences, and particularly to the science of medicine. Still further, he has devised an apparatus for the demonstration and use of the "vital fluid" and has requested his brother, he being absent from Paris, to state to me that, if I called attention to his discovery, he desired that, at the same time, I should announce that he had had his apparatus patented in America, as in other countries.

M. Ziegler states that this fluid acts most strongly on the spinal cord, about the neck and region of the kidney, and that, "if, in its concentrated state, it is capable of acting dangerously, employed in feeble tension it produces the most salutary effect; it reëstablishes the equilibrium of the nervous system, refreshes the memory and ideas, cures very rapidly affections purely nervous, such as neuralgia, cephalalgia, etc., calms pain generally, and immediately cuts short intermittent fevers, however inveterate." He asserts that the flax-seed poultice, whose minute and quaint description Abernethy delighted in, owes its virtues to its layers of nitrogenous and carbonaceous substances, by which are generated and imparted to the system a feeble dose of the "vital fluid;" and that a poultice formed of twelve to twenty couples of layers, the couples being formed one of white

paper moistened in flax-seed mucilage, the other of gold-beater's or other skin, has far more effect than the flaxseed poultice. For such a poultice possesses the magical power of relieving pain, generally in a few minutes, and of notably abating inflammation.

M. Ziegler supposes that the brain is composed of fibres, or of probably microscopic layers, the one azotized, the other carbonaceous; and that one of its principal functions is to generate the vital fluid, and supply therewith the other organs.

He objects to the received doctrine, that the nitrogen of the atmosphere is but a simple diluent of the oxygen; and believes that "the carbon of the blood, at the moment of its conversion into carbonic acid by the oxygen, finding itself in contact with so large a quantity of nitrogen, must necessarily produce vital fluid at each inspiration." I will add one more quotation: "What transpires when nitrogen and carbon are placed in direct contact is, and will probably long remain a mystery. I (M. Ziegler) have however observed in my experiments, that corbonaceous molecules have a great tendency to draw near to nitrogenized molecules, and *vice versa*. The molecules are drawn even to a perceptible distance, not in the state of pure carbon or nitrogen, but in a compound state. One may be easily convinced of this by coloring a carbonaceous substance with madder, and thus rendering its movements visible. Farther, paper serving as the carbonaceous element, being interposed between nitrogenized bodies, finishes, at the end of some months, by becoming impregnated with azotized elements, whose presence is readily demonstrated by chemical analysis." It is stated that persons subjected to the influence of a current of the "vital fluid," experience in the palms of the hands warmth and a slight "*frémissement*;" others feel these effects in the spinal cord, and then great fatigue ensues. Robust persons do not recognize these effects, until familiarized with them by repeated experiments, but they are at once perceptible to the very nervous, especially those with intermittent fever. I have a few comments to make on the "vital fluid." First, in company with a not very "robust" friend, I have tried *once* the vital fluid apparatus. Both of us *fancied* we experienced a slight warmth, and "*léger frémissement*" in the palms of the hands; but were much disposed to believe that our fancied sensations were but a new illustration of that old story of the paralytic patient cured by a thermometer in his mouth, which *he thought* was a galvanic battery. Secondly, that when a discoverer announces a new force in nature, with an apparatus to

prove it, the apparatus *should* prove it incontestably on other than "very nervous persons." Thirdly, that the readers of medical journals generally demand for their entertainment something new, and it is believed that the "vital fluid" will partially serve to supply this demand.

PARIS, January 6th, 1867.

ART. II.—MALARIAL PNEUMONIA:

An Essay read before the Mobile Medical Society, March 5, 1866.
By E. P. GAINES, M. D.

IN choosing the subject of Pneumonia, I know that I have taken a subject upon which the best minds of the day have written. I do not propose to read an essay upon pneumonia in general, but upon that particular variety of pneumonia which makes its appearance every winter in the South, and which our Southern writers style Malarial; but a better name for which I think would be *Remittent Pneumonic Fever*, or *Winter Fever*. This is a Southern essay, upon a Southern disease, and I shall not go abroad for authorities, but quote freely from our Southern medical journals, from which I expect to sustain the position I assume.

Dr. Otis Frederick Manson, in his admirable essay on malarial pneumonia, truly says:* "Studying the works almost solely of British and Continental writers, which, however perfect in all points for those regions, are sadly deficient for us, we force the form of our diseases to bend to their descriptions, and blindly follow a treatment intended for varieties of disease we never witnessed. Consummate and fatal folly! Yet year passes year, only to note its repetitions; whilst we, reclining in inglorious ease or censurable indifference, view the perpetuation of this error, knowing too, that hundreds are yearly added to our ranks who will have to pass through the same difficulties, and experience the same disasters we encountered, before they will be enabled to diagnose correctly, or treat successfully, any diseases, save those common to all countries, without a warning, a sign or explanation from us to guide the neophyte through the labyrinth before him."

* New Orleans Med. News and Hospital Gazette, Sept., 1857—p. 401.

Symptoms.

The disease generally sets in with a chill, followed by pain in the side and cough; and when the chill is severe, the pain is also excessive. I have seen persons suffer so much from this pain, that they thought they had the colic, and in one case I was deceived myself into this belief, and prescribed accordingly, neglecting to auscultate as I ought to have done. The following day the sputa very clearly showed the trouble. The pain is very different from that of pleurisy. Pain, according to Andral,* exists in pneumonia only when there is pleuritis at the same time. Laennec asserts, on the contrary, that there is frequently very acute pain, when there is no pleuritic inflammation at all. Dr. Williams coincides with him in this opinion. In these cases, the patient also suffers from dispnœa. The pulse is quick and generally soft; skin hot; tongue furred. The fever remits towards morning, and you will find your patient with all of his symptoms better. An individual remarked to me, "I wish you could see my child in the evening: her fever rises at the turn of the day, and then she is in the greatest pain with her side, and is coughing all the time." I did so, and the patient, who met me with a smile in the morning, was now crying from the pain, was coughing all the time, and had a high fever. The fever sometimes assumes the intermittent form.

In the month of December last, I treated two cases of children in whom there existed plainly all the physical signs of pneumonia. In one case the fever came on every night, and the other had a decided chill every night, followed by fever. On the fifth day, in my experience, there is always a change. The patient will be better or worse; in a word, it is the critical day.

Dr. Otis Frederick Manson, in the article above quoted, says: "The febrile action presents decided peculiarities, being usually distinctly paroxysmal and remittent. The remissions are sometimes obscure, and an active fever exists during the whole day and night. On watching the patient closely, however, a coolness of the extreme parts will be almost invariably observed, generally occuring daily and during the morning hours. This reduction of temperature may be confined to the ends of the nose, toes and fingers, either separately or combined; and in grave and rare cases may extend over the entire extremities, or even the whole surface, amounting to a state of collapse. This coolness of the skin is not generally felt by the patient, but on the contrary, when it is present, he often com-

* Andral—Mal. Clin.—Diseases of the Chest; page 185.

plains of sensations of excessive internal heat, soliciting the introduction of cold air into the chamber, and as we have witnessed, wishing the doors and windows to be opened and the fires extinguished, when the thermometer stood below the freezing point near the bed of the sufferer. A marked increase of fever follows this insensible chill, which continues to increase in intensity until an exacerbation, more or less perfect, is developed. The pulse, which has been very frequent and contracted in the chill, becomes expanded, acquires force and sometimes, though rarely, becomes full or tense. The term compressible applies to the usual condition of pulse, and the idea entertained in its careful examination, is that the heart is acting with only a seeming force, and not with its real vigor."

In referring to my notes on cases, I find the pulse generally put down as soft or quick but not hard.

The cough is dry and hard in the commencement, but is very much influenced by the accompanying fever, always being more frequent and distressing at night, when the fever is highest. Sputa bloody, but not generally so tenacious as is laid down by Northern and European authors in their descriptions of frank pneumonia.

PHYSICAL SIGNS.

Crepitant râle is said to be the pathognomonic sign of pneumonia; but if you examine a patient who has just been attacked with this disease, as I frequently have done, you will not hear this sound. There has to be some effusion into the vesicles first. Dr. Flint adopts the explanation given of this sound by Dr. Car, of Canandaigua, N. Y., to wit, "the abrupt separation of the walls of the cells, which had become adherent by means of the mucus or the viscid exudation incident to the early stage of inflammation;" * that is to say, there must be some exudation. Many authors have attempted to describe this sound. Some compare it to the crackling of wet powder when exploded; some, to the sound produced by rubbing a lock of hair between the fingers.† To my ear, however, the sound that most nearly resembles it, is that produced in removing adhesive plaster is successive jerks from a part to which it is adherent.

Dr. Manson, in his article above quoted, says, "I feel it my duty, however, to say that the *crepitans rhonchus*, regarded by Laennec and his imitators as the early pathognomonic sign of pneumonic in-

* Flint on Respiratory Organs, p. 234.
† Laennec compared it to the sound produced by salt in a heated vessel.

flammation in general, is not usually present at the commencement, or indeed any of the stages of this disease." He goes on to say, "The presence of crepitating râle is justly and reasonably ascribed to the passage of air through the viscid pathognomonic secretion in the air-cells and minute bronchi; that secretion being considered the result of inflammation. Now, although this fluid, as proven by expectoration, is present in all varieties of pneumonia, yet it is more fluid and more sanguineous in this than in simple pneumonia; and we should therefore rationally conclude that the passage of air through fluids of varying tenacity, density and composition, would produce sounds of variable character." In some cases of pneumonia, when the central portions of the lung are affected, you will not hear the sound for many days. From notes of such cases, I find some are written, vesicular murmur exaggerated; and some, the sounds noted as more feeble. Dr. Flint has noticed the same.*

In malarial pneumonia, the second stage sets in very rapidly. You examine a patient today, who has just taken the disease, and on your visit tomorrow you will find all the symptoms indicating hepatization—dullness on percussion and bronchial respiration, with bronchophony. Dr. Ames, of Montgomery, (*New Orleans Medical Journal*, Jan., 1854, p. 423) says, "one peculiarity of pneumonia in the South, consists in this, that the disease hardly ever lingers in the first stage, but presses on to the second, with a degree of rapidity which, while it constitutes the rule with us, is the exception in colder climates. It is not uncommon, for example, to notice the rust-colored sputa with a well-marked dullness, bronchial respiration and bronchophony in some part of the diseased structure, sometimes over a large part of it, within the first twenty-four hours. On one occasion I saw the characteristic sputa at the very beginning of the attack, even before the cold stage which ushered it in had passed off. It is much more common than otherwise, to find the physical signs of the second stage fully developed on the second day!"

In regard to the third or purulent stage, I have not much experience. The most interesting case of the kind I ever saw, was one which Dr. Ketchum requested me to visit with him, in Jan., 1864. We visited the case together nearly three weeks, and notwithstanding all we could do for him, the inflammation ran on, and finally pus was formed in such large quantities that nature could not discharge it all by the expectoration, and an abscess formed, broke and discharged

* Flint on Respiratory Organs, p. 409.

externally. In this case, there was great dullness over the whole lung, with all the moist and bubbling râles that you might expect to find under such a state of things. The patient died.

Last winter I took notes in reference to which lung is mostly affected in pneumonia. Of sixteen cases that I treated, the right lung was affected in twelve, and it is the lower lobe that is nearly always affected.

"Pneumonia, so far as symptoms are concerned," says Flint, "is sometimes remarkably latent. Expectoration, cough, pain may all be wanting, and the respiration be but little increased in frequency." I exemplify this point by the following case. Was called on the 8th of Feb. to see a young negro man, who had been sick some four days. The history was, he had been burning coal, and had been sleeping in a camp, convenient to his work; had been much exposed, was taken sick, and complained of feeling very weak; was brought home the day previous, and his principal pain was in the right side. At my visit he complained of no particular pain, had no cough, and no expectoration as a matter of course. He was so weak that he could not turn himself over; his skin was warm over the body, but extremities rather cool; pulse weak – 100; tongue pale. On examination of chest, he was too weak to fill the lungs well. On the left side, vesicular murmur heard, but feeble; sound clear on percussion. Right side bronchial respiration, but so feeble as not to be very well heard. The voice was plainly bronchial. Here was a case of pneumonia advanced to the second stage. The boy was still further prostrated by a diarrhœa, which he told me he had had for some time. I was also informed that he had had chills and fever all the fall. He was immediately put upon stimulants, milk punch and good soup. He also got every two hours calomel one grain, quinine two grains, and opium one quarter of a grain. A large blister was also applied over the right side. On my visit the next day he had rallied considerably, looked brighter, and expressed himself as feeling better. Skin was much warmer, pulse stronger, but had not increased in quickness. Diarrhœa checked. With the increased strength, cough had now appeared, but he had not expectorated any thing. The physical signs, bronchial respiration, bronchophony and dullness on percussion denoted the case very plainly. The blister drew well, his bowels were checked, and the quinine had somewhat affected his hearing. Ordered to continue the stimulants and to take the medicine only at intervals of four hours. Under this treatment he steadily improved and made a good recovery.

Prognosis is favorable: the disease generally yields readily to treatment. Cases ushered in by a very hard chill, are serious and may prove fatal; the lungs being, as it were, overwhelmed by the sudden congestion. Those cases in which the upper lobe is affected are much more serious than those in which the lower is affected. Double pneumonia is always very serious. Delirium is considered by Manson as a very bad sign. In malarial pneumonia the fatality depends more upon the febrile disease, of which it is a mere accompaniment, than upon the pulmonary inflammation. (Wood, p. 41, substituting malarial for bilious.) Those cases in which the patient does not expectorate I have generally found to be grave and the prognosis doubtful.

Cause and Nature of Malarial Pneumonia.

I believe malaria to be the predisposing cause, and cold and moisture the exciting causes. As in summer we call fever produced by malaria "bilious remittent," so in winter we might, with as much propriety, call the fever produced by the same cause *remittent pneumonic fever*, or *winter fever*. Dr. La Roche, of Philadelphia, attacks this theory in a learned and able work on pneumonia * and malaria, in which he contends that there is no connection between the two; and he is very emphatic in his opinion, "that pneumonia is not *sometimes* but *always* an idiopathic disease, whether it occurs sporadically or epidemically; whether in the South, in the North, in the East or in the West; whether in fever districts or in fever seasons, or in places or at periods of the year free from periodical fevers; and that it is due to causes perfectly distinct from those to which such fevers owe their origin." The physicians of the South believe the pneumonia of the South *is* different from that of the North, and that the difference is caused by difference of climate and soil. Dr. Bloodget, in his Climatology of the United States, says, "One feature of the census results is the higher proportions of mortality in the Southern States than exists in the North from other diseases of respiratory organs than consumption. This increase is in pneumonia, and some doubt rests on the accuracy of this statement of great mortality ascribed to that disease. He then gives the statistics of the two diseases:

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* La Roche on Pneumonia and Malaria, p. 55.

	CONS.	PNEU.		CONS.	PNEU.
North Carolina	562	664	Illinois	866	647
South Carolina	269	741	Wisconsin	290	194
Georgia	279	651	Indiana	1070	601
Alabama	362	558	Ohio	2558	895
Mississippi	332	509	Virginia	1616	798
Texas	112	175	Philadelphia	1119	385
Arkansas	132	187	New York	6691	1461
Louisiana	641	268	New York City	1756	992
Tennessee	879	419	Massachusetts	3426	549
Kentucky	1288	429	Maine	1702	223
Missouri	648	378	Vermont	751	93
Iowa	159	146			

"These results," Bloodget remarks, are too striking and uniform to permit a doubt of their climatological significance, and they strongly confirm the hypothesis of the general relation of pneumonia to malarious districts and autumnal fevers. Louisiana alone of all the states south of Tennessee and Virginia, has as many cases of consumption as pneumonia, and in the South Atlantic States the disproportion is very great. In all the Western States the number for pneumonia is also great; while at the North and East it almost disappears.

La Roche has examined the pathology of pneumonia at great length and with great care, in view of this particular hypothesis; coming to the conclusion that it is not associated with malarious districts or diseases in any decided manner. He employed no general statistics of distribution, however, such as the census has supplied; and if the accuracy of these in detail is questioned, the general result cannot be, when the states are found to group themselves after strictly climatological relations, as they do also in the case of consumption. Dr. P. H. Lewis, in his medical history of Alabama (*New Orleans Medical Journal*, 1847, p. 27), says, "Of all the causes tending to designate a particular type of pneumonia or pleuritis, the nature of the soil and attending local circumstances are most prominent; and so marked is this influence, that a knowledge of the locality and grade of autumnal fevers that previously prevailed is often necessary to a correct diagnosis and treatment of this disease. Where is the medical man, who has not observed, during the months when the chilling blasts from a hyperborean region strike on the predisposed constitution, inducing pulmonic disease, the impress of that type which immediately preceded? If there is one who doubts this position, we would direct his attention to the intermittent and

remittent pneumonia of the hill-top and mill-pond, so lately the abode of fever of the same type. So with the malignant and congestive typhoid pneumonia of the river and prairie swamps, which but a short time previous were the lurking places of a kindred and equally unfriendly monster. If this be not satisfactory, we would bid him pass to that season when the vernal breezes of a tropical climate unfold the bounty of nature, and he will still find in the chain of morbid sequences that local causes are operating with unerring chemical law, to designate the type and character of disease."

Dr. A. P. Merrill, Professor of Therapeutics and Materia Medica, in the Medical School of Memphis, Tennessee, says, in an article published in the *New Orleans Med. Journal*, July, 1854, that, after a long experience acquired in the South, he thinks that pneumonia, though sometimes appearing as an idiopathic affection, is most generally, whether it prevail sporadically or as an epidemic, really and substantially nothing more than a peculiar form of remittent and intermittent fever in which the lungs, from sudden transitions of temperature, are made to bear the burden of local disease.

Dr. Otis Frederick Manson, in his admirable essay on Malarial Pneumonia, an essay which I hope every member of this society will read, says, "the doctrine that this form of pneumonia owes its existence to malarial influence, has long been entertained and acted upon; but on the other hand has been as strenuously contested, both in regard to its correctness and legitimate consequences. The subject is one of great interest and of the highest importance, involving unquestionably the lives of the inhabitants of many sections of our own and other countries. The reader who has had frequent opportunities of observing remittent fever at the bed-side, or those who have not, but have known the writer by a perusal of his imperfect descriptions of that disease, cannot fail to perceive the close resemblance between the phenomena presented by that affection and the disease under consideration. Indeed, the similitude is almost perfect, with the addition of the signs and symptoms of thoracic lesion. It will be observed therefore, that the evidences of organic complications are by no means confined to the organs of respiration; that symptoms of gastro-intestinal disorder very frequently precede the lung symptoms, and that both are very often preceded by febrile excitement for hours, and even days. We have seen that the patient evidently does not always perish from the pathological changes wrought in the lungs; death more often occurring from the super-

vention of fierce delirium, not only independent of the lung affection, but subsequently to its abatement or total disappearance. These facts then clearly denote the connection between this disease and periodical fever, as they sufficiently prove that its phenomena are not merely symptomatic of lesion of the lungs." (*New Orleans Med. News and Hospital Gazette*, p. 418.) In the work of Nott and Gliddon on "Indigenous Races of the Earth," Dr. Nott, our distinguished president and fellow-citizen, wrote a chapter on "Acclimation, or the Influence of Climate and Diseases on Man." In this article he makes the following remarks, which I think peculiarly suitable to the subject, and shall therefore quote at length: "In considering the climates of the tropics and the adjacent warm climates, it is necessary to divide medical climates into *non-malarial and malarial.* By a non-malarial climate, we wish to designate one which is characterized by temperature, moisture or dryness, greater or less changeableness, etc., in short, all the characteristics of what is understood by the word climate, independently of local morbific influences. By malarial climates, we mean those in which malarial emanations are superadded to the above conditions. The two climates are familiar to every one, and often exist within a mile of each other. In our Southern States, we have our high, healthy pine or sandhills, bordering the rich alluvial lands of our rivers. On the lowlands, in many places, the most deadly malarial fevers prevail in summer and autumn; while in the sandy land there is an entire exemption from all diseases of this class, and our cotton-planters every summer seek these retreats for health. Not only in these more temperate regions of the United States is this proximity of the two climates observed, but also in Bengal and other parts of India, in the islands of the Indian Ocean, at Cape Colony, the West India Islands, etc. Mobile and its vicinity afford as good an illustration of these climates as can be desired. The town is situated at the mouth of the Mobile river, in lat. 30° 40″ north, on the margin of a plain that extends five miles to the foot of the sandhills, and which is interspersed with ravines and marshes. The same hills rise to the height of from one to three hundred feet, and extend many miles. Now the thermometer, barometer and hygrometer indicate no appreciable difference in the climates of the hills and plains, except that the latter are rather more damp; and yet the two localities differ immensely in point of salubrity. Let us suppose that a thousand inhabitants of Great Britain or Germany should be landed at Mobile, about the month of May; and one-third placed on the

hills, one-third in the town and the remainder in the fenny lands around the latter, and observe what would be the result at the end of six months. The first third would complain much of heat, would perspire enormously and become enervated; but no one would perhaps be seriously sick, and probably none would die from effects of the climate. The second third, or those in the city, if it happened to be a year of epidemic yellow fever, would, to say the least, be decimated, or even one half might die, while the resident or acclimated population were enjoying perfect health.

The remaining portion, or those in fenny districts, would escape yellow fever, but most of them would be attacked with intermittent and remittent fevers, bowel affections, and all forms of malarial or marsh diseases. Fewer would die than of those in the city, but a large proportion would come out with broken-down constitutions. Here then we have three distinct medical climates, actually within sight of each other. This is by no means a peculiarity of one locality, but thousands of similar examples may be cited in warm climates. Charleston, South Carolina, its suburbs, and Sullivan's Island in the harbor, near the city, give us another example quite as pertinent as that of Mobile.

In our cotton growing States, the malarial element is by no means confined to the low and marshy districts. On the contrary, in the high, undulating lands throughout this extensive region, wherever there is fertility of soil, the population is subjected more or less to malarial diseases" (pp. 363 and 364).

Now, the writer of this essay has practiced medicine sixteen years in that portion of Mobile county described by Dr. Nott as the fenny districts, which is subject to all the diseases produced by malaria. As I have compared pneumonia to our periodical fevers, and quoted a great many Southern writers to sustain me in my position, I desire to quote some very pertinent remarks from Dr. Markham, an able English writer on pneumonia, before entering upon the treatment. Dr. Markham says, "Idiopathic pneumonia arises obscurely; that is to say, without any distinct or manifest cause to which it can with certainty be ascribed. It cannot be looked upon as a purely local inflammation, in the sense in which we should regard pneumonia arising from, say, a gun-shot wound. Every one must admit, in the face of it, that there is a distinction somewhere in the two cases. Of a hundred persons who are exposed to the self-same external conditions, atmospheric, hygienic and dietetic, one only is attacked

with so-called idopathic pneumonia. But this is clearly a very different result from what would have happened, had they been all subjected to a similar traumatic injury of the lung; then in the whole of them some degree of local inflammation, varying, doubtless, much in extent, would probably have been excited. In the first case, it must be admitted that there exists a peculiar and abnormal condition of the system, which predisposes the individual to the inflammation. It cannot be imagined that the mere local application of cold air or of any other of the exciting causes to which he had been subjected, excited the pneumonia, for then assuredly the other ninety-nine of his companions could not all have escaped the potent influence. Now, if we admit the fact of this predisposing condition of the system, we admit, I imagine, that the system is diseased anteriorly to the moment that local inflammation arises; and therefore that the pneumonia is not, strictly speaking, idiopathic, but falls under the class of those constitutional disorders in which the local inflammation is merely of secondary consideration. In the idiopathic inflammation there is some obscure influence, to which the fluids or solids of the body, or both of them, have been subjected before the pneumonic symptoms arise; but in the traumatic inflammation, on the contrary, whatever constitutional disturbances appear are consequences not antecedent of the local inflammation. Is it indeed unreasonable to believe that we shall one day place idiopathic pneumonia in our nosological systems amongst the fevers, ranking it, for example, in the same class of diseases as rheumatic fever? Acute rheumatism is no longer called arthritis, however prominent and severe the arthritic symptoms attending it may be. We do not consider them the essence of the disease, but only as certain of its consequences. Neither do we treat the arthritis. We direct our attention mainly to that disordered condition of the system which has, we know, provoked the arthritis. We find a fever also raging coincidently, and we call the disease rheumatic fever. Why, in like manner, may we not be led to call idopathic inflammation of the lungs pneumonic fever? Now, if this view of the nature of ordinary pneumonia be correct, it is evident that the inflammation, as regards its treatment, must be considered under the head of those diseases which, for want of a more particular knowledge of their intimate nature, we designate as blood diseases. It is a disease in which constitutional disturbance exists, anterior to the manifestation of local inflammation."

Admit this reasoning, gentlemen, and you are obliged to admit that I have made out my case. Persons exposed to malaria through the autumnal months, when cold weather sets in are taken down with what? With idiopathic inflammation of the lungs? No, but with a constitutional affection of which the pneumonia is but a part, with a fever which we might properly style, as I said before, remittent pneumonic fever.

And now, on entering upon the treatment, you might justly expect the proposition that the more nearly you treat it like an attack of bilious remittent fever, the more successful you will be. The profession have now agreed that, in all constitutional or blood diseases, bleeding is very seldom or never indicated, and so it is in malarial pneumonia: we scarcely ever have to bleed. But there are cases where I have always been in the habit of bleeding, and always expect to bleed; and that is in cases preceded by a very hard chill, and followed by great pain in the chest and difficulty in breathing. In these cases the lungs are overwhelmed by the sudden congestion, and must be relieved. Markham says, "The chief good effects of bleeding, then, in pneumonia result not from any power which the bleeding has in arresting the inflammation or in removing, as the ancients would say, the ill-concocted humors; but from the immediate relief which it gives, by disgorging the congested capillaries and giving freedom to the action of a vital organ. The large bleeding acts here exactly as it acts in traumatic injuries of the lungs. It is an evil as regards the future of the patient, but it is an evil which his present condition calls upon him to submit to. Its main object is immediately to relieve the impeded respiration." Under the circumstances I have mentioned, I have never found it an evil either present or to be anticipated, and I know of no other cases where a young physician has such an opportunity of making a decided hit, as in such as I have described, if he will follow that up with appropriate treatment. After the bleeding, give a large dose of calomel, and if the fever rises again, give veratrum. As soon as a remission occurs, give large doses of quinine, and the recovery will be astonishingly rapid; in fact you will feel as if you had broken up an intermittent, instead of so-called pneumonia or inflammation of the lungs. I rely much upon cupping, and this will answer in a majority of the cases. In his prize essay on the summer and autumnal fevers of South Alabama, Dr. Lay Anderson, of Sumter county, says, many practitioners entertain quite an aversion to cup-

ping, either from prejudice or from indisposition to take the trouble of performing the operation; for in the country, if performed at all, the physician has to do it. The writer has seen so much benefit from it, however, that he would be extremely unwilling to dispense with so efficient a remedy for many local symptoms that could not otherwise be reached. Inconvenient and troublesome as the application of them may be, the gastritis and gastro-enteritis which so often attend remittent fever, can rarely be removed by general bleeding, nor will internal remedies act favorably until this local inflammation be subdued. Blisters cannot be used early in the disease, for fear of aggravating the general excitement, and in this condition cupping offers the very resource that is needed. The late Professor A. F. Warner, formerly professor of Anatomy and Surgery in the University of Virginia, and afterwards professor of Surgery in the Richmond School, was a great advocate of this mode of depletion, and used to relate to his classes an instance of the relief once afforded to himself by its means. He was suffering with pericarditis, and had been several times very heavily bled without relief to the pain, when a friend suggested cupping, as a last resort. The relief afforded was magical; the pain was instantly removed, and he rapidly recovered. He attributed the happy effect of the remedy to the unloading of the capillary vessels effected by it, and maintained that a very small abstraction of blood from that system of vessels would often produce effects to which the largest general bleeding was entirely inadequate. Dr. Anderson says, "I have often had reason to be convinced of the truth of the fact exemplified by Dr. W's case, and think that his explanation is the true one."

I generally commence the treatment with a mercurial purge, and in one or two hours after giving it, commence with Tr. veratri viridis, which I now nearly always combine with neutral mixture. In children I give the veratrum in doses of from one to two drops, and to adults three to four, and generally find this sufficient. As soon as a remission takes place, I commence with quinine. This remission generally takes place on the fifth day, but sometimes much earlier. I commence with one dose of ten grains, and continue in doses of five grains every two hours, until the specific effect is felt, such as ringing in the ears, etc. I then stop until the following day, when I resume its use, in five grain doses again every two hours, until the patient again feels its effect. After that, I continue in smaller doses three or four times a day for a week. If the patient is troubled much

with his cough, I now give tartar emetic in small doses, the $\frac{1}{8}$ or $\frac{1}{16}$ of a grain with a little paregoric, in the form of the old brown-mixture. Sometimes, where there is an irritability of the pulse remaining, I give a combination of syrup of squill, veratrum and paregoric. If the case fails to yield to this treatment, I would pursue the same course as in a severe case of bilious remittent fever — bring my patient under the influence of mercury.

After the fever has been broken up by quinine, you may find your patient sitting up, in fine spirits, with a good appetite, and convalescing as finely as you would wish. On examining him, you will be astonished to find the continuance of physical signs, denoting the lung still to be in the stage of hepatization, dullness on percussion, bronchial respiration, bronchophony. It is true, you will detect some crepitation, and there is where all the comfort lies. Nature is at work, softening down all this deposited lymph, which will be duly expectorated or absorbed. You must not get uneasy now, and think that you must help it along by mercury. Your patient does not need it. Give him wine or whisky, and plenty of good nourishment. You may also continue with small doses of quinine for a few days, and I assure you he can get along very well without further attendance.

As I consider the use of quinine in pneumonia the most important part of the treatment, it is proper that I should consider its use by others as well as myself. In Dr. Lewis's Medical History of Alabama, he says, "On the subject of its early use in what are supposed to be inflammatory affections, Dr. Ames addressed the writer as follows: 'In 1835, I gave it first in an inflammatory affection. The case was remittent pleuro-bronchitis, which the quinine removed as by a charm. At that time this form of disease was rare, and I do not recollect that I used it again until 1839. You were certainly the first to use it extensively and generally in pulmonic diseases in 1837. In the fall of 1842 and winter following, several physicians in this place began to employ it in the inflammatory affections which then prevailed, but I do not think its purely contra-stimulant nature was fully recognized at that time. The circumstances would have led to its use, on account of its acknowledged febrifuge qualities alone. The ordinary endemic remittent fever became, on a change in the weather in October, suddenly complicated with pulmonic inflammation, without any other change in its type. The treatment was consequently not changed, and quinine was found to be quite as beneficial after

wards as before the change, allowance being made for the increased violence and obstinacy of the disease, induced by local inflammation.'"

Dr. Ames states, "We (Dr. Lewis and myself) were the first to use quinine generally in pulmonic diseases in 1837. The diseases alluded to were intermittent pneumonia, which prevailed throughout the months of November and December of that year, confined however to those localities where simple intermittent was the predominant disease. The paroxysms in those cases were very violent, attended with difficult breathing, prostration, small compressible pulse, and difficult expectoration, the sputa being more or less cold and intermixed with blood. The remissions (for notwithstanding each paroxysm was usually ushered in with a chill, it cannot be properly regarded as intermittent) were, considering the violence of the paroxysms, very complete. After the two first cases, which proved fatal, we began what we then viewed as an experiment, the use of quinine in decided doses. We lost but few cases after this. We did not, after some reflection and experience, consider these inflammatory affections, nor did we give quinine believing it would act as a contra-stimulant, for in that case it would not have been advisable; but we gave it solely in reference to its anti-periodic properties, and to quiet nervous irritability." (Pp. 174 and 175, *New Orleans Medical and Surgical Journal*, September, 1847.)

In a very interesting article on inflammatory affections of malarious districts, the late Dr. Boling, of Montgomery, Ala., one of the most accomplished medical writers of the South, says, "Another striking peculiarity about these inflammations, is the obstinacy with which they resist what is generally considered a purely antiphlogistic treatment—a treatment that would be, in most cases, speedily successful in the phlegmasiæ of those living in an atmosphere untainted with malaria—and the facility with which, as a general rule, they yield to a course of practise applicable in its peculiar features to the treatment of the uncomplicated fevers of the same regions."* In reference to quinine, Dr. Boling says, "It would not be considered scientific to call it a specific, and yet in malarious diseases its effects seem almost antidotal." That is the feeling I always have, when I prescribe quinine, that I am giving something which enters the blood and acts as an antidote to the malarious poison.

In a former part of this essay I mentioned the case of a young

* Boling on Inflammatory Affections of Malarious Districts.

patient who, at my morning visit, would be doing well and making no complaint, but who, in the afternoon visit, was found with a high fever and complaining bitterly of pain in the side. This patient the following day took large doses of quinine, missed the fever and the pain, and from that time continued to convalesce. How otherwise could I reason about such a case, than that the remedy she had taken, had acted like an antidote? Headland, in his work on the action of medicines in the system, speaking of quinine, says, "It appears from the character and results of its medicinal influence, that it is exerted primarily in the blood, and not on the nerves. It is included in the restorative group of Hæmatics, and the general results of its action differ widely from those of a Catalytic Hæmatic." *

In conclusion, I have endeavored to show that the Pneumonia of the Southern climate is different form that of the Northern. I have endeavored to prove a connection between this variety of pneumonia and periodical fevers, and consequently that the same treatment is applicable to the two diseases. I have quoted from the writings of some of the ablest physicians of the South, and could cite many more authorities to sustain the position I have assumed. Dr. La Roche, of Philadelphia, says we are all wrong, and is very caustic in his criticism of those who differ from him, but we have come to our conclusions from observations made at the bed-side, and our opinions therefore are entitled to more consideration than those of one who lives in a different climate, and who, however learned he may be, has not paid that attention to Southern statistics, according to Bloodget, which he should have done. But we all "see through a glass darkly," and

"*Felix qui potuit cognoscese causas verum.*"

Art. III.—ANEURISMS of the ARCH of the AORTA:

By Edmond Souchon, M. D., New Orleans.

(Continued from the May No.)

PATHOLOGICAL PHYSIOLOGY.

NOW that we know the *anatomy* of aneurisms, or the alterations of the normal characters inherent to their existence and by which

* Headland on the action of Medicines in the System, p. 382.

they differ from the normal state of things, we shall, exactly as for a healthy organ, endeavor to describe the physiology of these aneurisms, *i. e.*, the alterations in the functions of these organs, or the disturbances brought into the normal state of things by the existence of the aneurismal tumor. The task is, by no means, an easy one, in the present state of morbid physiology, and so much more so that, in in this chapter, a triple reef is to be avoided: not to recall any or too many facts of the physiology of aneurisms in general; not to repeat what has already been said in the pathological anatomy; and, lastly, not to anticipate, or, at least, not too much so, on the description of the following chapter, or of symptoms. Some symptoms will be readily foreseen, and others will not; and some will be explained, more or less satisfactorily, while others will still remain in the dark. In this description we shall follow exactly the plan adopted in the chapter on pathological anatomy.

1*st Stage.* The first or primitive stage, or physiological changes resulting from the alterations in the parietes of the aorta and preceding the formation of the aneurism, is attended only by an alteration of the aortic diastole, which is slower, or diminished, or absent, according to, and resulting from, the impediment of the elasticity of the tunics by the anatomo-pathological deposits above mentioned; the impulse of the blood against these deposits is sometimes followed by a murmur.

2*nd Stage.* The second stage, or stage of commencement of the aneurism, presents to study the mechanism or mode of formation of the aneurism.

It varies according to the cause: (a.) Traumatic aneurisms are generally rapid; (b.) True aneurisms are almost always developed slowly and gradually; (c.) False aneurisms present two varieties. (1.) In cases of uniform atheromatous deposits or patches, there are generally two stages in the mode of formation: the first stage is slow and gradual, and corresponds to the internal process by which an incipient true aneurism or dilatation is produced; the second stage is rapid, as it coincides with the formation of the false aneurism, and is usually voluminous, resulting from the rupture of the internal coat. That rupture itself results from an ulceration or from the sharp point or cutting edge of an atheromatous or calcareous patch, which produces a fissure or rent, through which the blood will insinuate itself, increase it, and then rush beneath the other coats, which will yield, give way and form a tumor of variable size. (2.) In cases of tumors or cysts,

like those found by Corvisart on the aorta, the artery is destroyed from without inwards, till it reaches the internal membrane, which is in its turn destroyed, and permits thus the rush of blood into an already formed sac. This latter circumstance is remarkale.

3rd Stage. The third stage, or stage of formed or developed state, presents to study the physiological disorders: A.—Of the blood and functions of circulation; B.—The physiological or mechanical alterations of the surrounding structures, resulting from the pressure exercised by a tumor on those structures.

A.—The alterations of the blood and of the functions of circulation resulting from the presence of an abnormal cavity on the course of the blood, offer to study (a) the causes, or the explanation of the anatomical changes of the heart and of the vessels arising from the arch; (b) the physical alterations, or alterations in some of the physical characters of the circulation (the course of the blood, the rapidity of the current); (c) the chemical alterations, or alterations in the composition of the blood.

(a) As for the heart and vessels of the arch, we have already said that, according to Stokes, when alterations of the heart were found they were preëxisting, and that he did not think that the presence of the aneurism threw any more labor on the heart; but that, according to Grisolle and others, they were consecutive. He attributed the alteration in volume to increased labor, resulting from the presence of an aneurismal tumor on the arch; and the alterations of the valves in their sufficiency (insufficiency of the aortic valves), to the change of direction given to the valves by the aneurism or, according to Charcellay of Tours,[1] to the enlargement of the aortic orifice, caused by the dilatation of the vessel. The alteration in thickness and continuity of the valves (perforations) are thought by Dr. Lidell, to be perhaps the result of the stretching of the valves, consequent upon the progressive dilatation of the aortic orifice. As for the alteration of structure (fatty degeneration of the muscular tissue), no one has, nor can we account for it; its result, however, together with the soft and flabby condition of the tissue, is to diminish the force of the heart's contraction, to weaken the impulse of the blood within the aneurismal sac, to postpone the day of rupture, and thus assist in prolonging life.[2] The dilatation of the arteries arising from the arch cannot be accounted for, except by the propagation to them of

1 Charcellay of Tours, cited by Nélaton, *op. cit.*

2 Dr. Lidell, *op. cit.*

the dilatation, or, in cases of insufficiency of the valves, by the mechanism so well described by Corrigan and Hope.

(b) As for the physical alterations, or alterations in some of the physical characters of the circulation, they vary, according as the aneurism is arterial or varicose.

(1) In arterial aneurism, at the moment of the ventricular systole, the blood, expelled from the ventricle, passes into the aorta (if the tumor is a little distant from the heart), and there is divided into three streams—one into the aneurism, one into the descending thoracic aorta, and one into the branches arising from the arch. If these branches are inserted on the sac, there are but two currents, the stream of the tumor sending a flow to fill them. At the moment of the ventricular diastole, though the parietes of the artery, previously diseased, will not well contract or react against the blood and will be uncompletely filled (Grisolle), the blood will, however, return (aided by its proper weight or attracted by the dilating ventricle), from the aneurism and from the arteries of the arch into the aorta (or, for the latter, into the aneurism, if they are inserted on the sac). Lastly, it will return from the aorta into the cavity of the ventricle, if there is any insufficiency of the aortic valves. As regards the rapidity of the current, the systolic stage is the most rapid and strong, according as the heart is hypertrophied, and the diastolic stage the slowest and weakest, according as the parietes of the vessel and sac do not well contract over, or react against, the blood.

These alterations in the course and rapidity of the blood explain, more or less satisfactorily, several of the most important symptoms. According to Grisolle, the second beating and murmur, which we shall see existing in these aneurisms, are due to a reflux of the blood into the heart, in cases of insufficiency of the aortic valves, or from the aneurism into the aorta. According to Dr. Lyons, of Meath,[1] in order that the second sound may take place, it is necessary that the aneurism should be sacculated, and the sounds are attributed to two independent and active forces—one, the ventricular systole, causing the first impulse or sound; and the other, the systole of the artery, which sends forward a second flow of blood, less strong than the first. (This is, perhaps, the nearest to the truth.) Lastly, according to Dr. Bellingham,[2] the second impulse and sound are produced by the regurgitation into the aneurismal sac, from the large arteries given

1 See Stokes, or *Dublin Quarterly Journal of Med. Sciences*, vol. 9, p. 344.

2 *Idem, op. cit.*, p. 547.

off the arch; but these vessels are not always inserted on the sac. Stokes[1] states that Dr. Bellingham is also of opinion that the remarkable resemblance between the normal and abnormal sounds of the aneurism of the arch, and the normal and abnormal sounds of the heart, renders it probable that the mechanism of their production is the same. Grisolle says that perhaps the second, or abnormal sound, is due to a sort of reinforced echo of the very beatings of the heart. All this portion of the pathological physiology is not very clear nor easy, we must acknowledge and regret.

(2) In cases of dissecting aneurism there are two parallel currents, one abnormal and external, formed by the blood passing between the two coats of the vessel, from the upper or cardiac rent to the lower or peripheral rent, through which the blood reënters the cavity of the artery; and one normal or internal, represented by the blood following its normal course. In some instances, the cavity of the artery being obliterated by the dissection of the internal coat and the pressure of the surrounding blood, or being plugged by fibrinous clots resulting from the impediment to the circulation, the normal current of the blood will be totally interrupted. The results of this interruption are easily guessed at, and will be further stated more at length.

(3) In varicose communications with the venous channels and the venous cavities of the heart, there will be this special difference in the physical characters of circulation, that the blood will pass from the sac into the venous cavity. As the phenomena of the morbid physiology presents here nothing particular that is not known or applicable to all aneurisms of other parts in general, we shall simply say that the murmurs are produced by the same cause and mechanism.

(4) In varicose communications with the left or arterial cavities of the heart, there will be a returning current of arterial blood to the left ventricle.

(c) The chemical alterations, or alterations in the composition of the blood, are relative to the formation of the lining fibrinous laminæ or clots and the changes produced by the existence of varicose aneurisms.

(1) The clots vary according to the species. In true aneurism,[2] if the dilatation is general, the coagula are wanting, because the sur-

1 *Idem*, *Idem*, p. 541.

2 Wood, *op. cit.*, p. 227.

face is too uniform to impede the movement of the blood. However, when the inner membrane happens to be ulcerated, rent, or otherwise irregular, the blood coagulates upon its surface, forming layers which more or less fill the cavity. If the dilatation be partial, the blood finds an easy entrance into and exit from these tumors; but, being somewhat impeded in its passage, is more apt to coagulate than in the complete dilatation. The coagula, however, do not generally adhere to the whole interior surface, forming concentric layers as in false aneurisms, but appear to be attached by a sort of peduncle to certain parts of the surface, which, from being ulcerated, fissured or otherwise roughened, entangle portions of the blood, as it passes over them, and favor its coagulation. In false aneurism, the conditions of the coagulation (impediment in entrance and exit of the blood, rough surface, etc.) existing generally in their most perfect conditions, the lining fibrinous laminæ or clots are found as well marked, and with all the characters of number, thickness, coloration and disposition, as they are described in aneurisms in general.

(2) The existence of varicose aneurisms is followed by a mixture of arterial and venous blood, which, it is readily understood, modifies considerably the chemical composition of the arterial blood; and that is, very likely, why we generally see these patients gradually sink and die, like a lamp for want of oil, or, more accurately, like a light from want of sufficient oxygen.

B.—The physiological alterations of the surrounding structures, or mechanical alterations of the functions of the surrounding structures, resulting from the pressure exercised by a tumor on these structures, present to study their peculiarities and the growth and course of the tumor.

(a) As for the peculiarities, they vary according to the structures

(1) The alterations of bones in their position are effected by the expansive and progressive course of the tumor. It is not the tumor, though, that really throws the bone out of place, but the heart, by the impulse of the blood. The alterations in their continuity result from the absorption of the osseous tissue, caused by the constant pressure, as does any tissue, by any sort of permanent compression; and, as in those cases also, the disappearance of the bony substance takes place without any abscess, caries or necrosis. When absorbed, the edge of the perforation encircles the base of the tumor as in a ring; but the sac, after having passed through the opening, expands,

and thus presents the form of an hour-glass, the narrow portion connecting the two dilated ones corresponding to and being produced by the osseous ring. The presence of these pathological openings weakens the chest and unfits it to endure the effects of traumatic injuries. The vertebræ, when destroyed, are laid bare and are struck directly by the blood, which infiltrates them, because the corresponding portion of the sac is absorbed, and because (Grisolle) there are, in those cases, no fibrinous layers or clots to protect them. This state of the bodies of the vertebræ gives a very satisfactory explanation of the differences of remarkable symptoms presented (as will be further said at length) by some patients, according as they are resting on the back in a bed, or are standing in an erect posture; and, in this latter case, accordingly as they are or not supported by crutches (Stokes).

(2) The absence of alterations in the cartilages is unaccounted for.

(3) As for the nervous structures, the compression of motor nerves is attended with an alteration of the motility of the parts to which the nerve is distributed; and this motility may be merely diminished or completely abolished. The compression of a sensitive nerve is attended with formication and neuralgic pains, sometimes of the most violent character.

(4) The heart, affected in its position, is followed by and explains the abnormal seat, strength and rhythm of the beatings; its mechanical alteration in volume aids it also. In the encroachment upon its cavities by an invading aneurism, as in the case related by Tyler Smith and mentioned above, the rapidity and rhythm of the circulation must be very much impaired.

(5) The alterations in volume, consistency, structure and nutrition of the lungs are attended with a diminution or absence of the important phenomenon of hematosis, and explain many of the symptoms presented by the respiratory system.

(6) The alterations of the cavities in their capacity present nothing special.

(7) The channels, whatsoever they are, altered in their *situation* or direction and in their calibre, may be said, in a general proposition, to result in a diminution or arrest of the passage of the respective fluids or substances they usually convey, and thus the physiological disturbances are so very plain to make out, with reference to alteration of the channel, that we shall not dwell upon them, and the less

that we shall have hereafter, in describing the symptoms, opportunity to do so more profitably.

(8), (9), (10) The cellular tissue, the muscles, the skin, stretched over the parietes of the sac, and altered in their thickness and extent, abdicate most totally their normal functions, in order to appease the development of the tumor as much as possible, and delay the rupture.

(b) The growth and course of the tumor presents to study (1) the direction taken by the tumor and its variability; (2) the process or mechanism attending the development or growth and the course of the sac.

(1) The direction taken by the expanding tumor varies according to its origin on the arch and to the resistance of the surrounding tissues. As for the origin, aneurisms arising from the convexity of the whole arch will, as a rule, tend towards the exterior. Aneurisms of the convexity of the ascending portion and bend of the aorta appear usually upon the front of the right side of the chest, and as follows: those arising near the origin of the aorta, at the level of the 6th and 5th ribs; those from the middle portion (greater sinus) of the ascending arch, at the level of the 4th and 3d ribs; those of the upper part of the ascending arch and from the transverse arch behind the sternum at the root of the neck,[1] at the supra-sternal depression or pit, and sometimes a little to the left. Aneurisms of the convexity of the descending arch will appear in the dorsal region, on the left side, and between the spinal column and the scapula, [2] sometimes lifting this latter bone. Aneurisms arising from the concavity of the whole arch (though rare, they still exist) will invade the posterior mediastinum. It is needless to say how important these details are, as regards the symptoms and the diagnosis, aneurisms of the concavity, in contact with more important structures which are compressed, being accompanied by more or better defined symptoms of compression, and being often without physical signs to permit us to affirm positively their existence.

The resistance of the surrounding structures is accessory. As a rule, the tumor will tend where it finds the least resistance, usually pushing out of its way all yielding structures; but should the aneurism, having as it were, exhausted all its power of deviation, come into contact with unyielding structures (bones), or with soft struc-

1 Chomel et Pelmas, *Dre. de Médecine* en 30 volumes; or see Wood, *op. cit*, p. 229.

2 See, particularly, Dr. Gigon—A Case of Aneurism of the Descending Arch, in *Archives de Médecine*, 4th Series, vol. 18, 1848, p. 522.

tures which have given way, but can do so no more, then it will, by pressing continually upon them, alter their continuity and bore holes through them. Some structures, though, might resist, and do sometimes force the aneurism out of the direction it would have followed without that circumstance; and thus is explained the variability of some of the symptoms of compression, which, as we shall further see, may vary in their existence, in their extensity and in their duration.

(2) The process or mechanism of the growth and course is the following: in consequence of a greater pressure from within or without, or from some peculiarity in its structure, some portion of the coverings of the tumor is absorbed, and the tissue beyond it, previously condensed by adhesive inflammation (as we have already stated), supplies its place for a time. This is, in its turn, absorbed; and thus the sac advances until it reaches the skin or the lining membrane of some cavity, where an opening is effected and the blood escapes.[1]

4th Stage. The physiological alterations following the fourth stage, or stage of termination, vary according to that termination.

A.—In cases of tendency to stationary state, the physiology of the diseased parts will be as we have above explained. The anatomical changes corresponding to that state, *i. e.*, the formation of fibrinous lining clots, and the changes in the parietes, etc., account for the modifications in the intensity of the impulse or pulsations and of the murmurs. We shall here call special attention to the efforts, sometimes most strenuous, of nature to delay the disease, to impede its course, to stop it from going any further, if it fails to cure it. It is indeed a thing worthy of our admiration, to see how clots are formed to strengthen the parietes; how, moreover, these parietes become thicker, denser, fibrous or even fibro-cartilaginous, to increase their resistance; how the surrounding structures, hastening to the succor of the parietes, combine their efforts, are united together by adhesive inflammation, are incorporated to the parietes and take their place when they are destroyed; how the heart itself has sometimes its action weakened from the fatty degeneration of its muscular tissue; how, lastly, when the sac ruptures in a serous cavity, nature, so often provident and fighting to the last, has sometimes established previous adhesions to limit the hæmorrhage; all concurring to a common and supreme aim to impede or stop the development of the disease,

1 Wood, *op. cit.*, p. 229.

prevent or delay the rupture—in a word, all struggling for life or death. The struggle is not always a hopeless one, for we think that some cases, amongst those in whom death has occurred at an advanced age, may be looked upon as partial victories, as instances in which the efforts of nature have succeeded in delaying the rupture.

B.—Cure, whatever may be its process, is followed by an obstruction of the sac. In aneurisms of other arteries, the vessel, above and below, is obliterated in a lesser or greater extent, but here this is not the case. The parts, so far as physiology is concerned, have recovered their natural disposition.

C.—Death (1) *occurring from rupture of the sac*, presents to study its frequency, the mechanism of the production of the rupture, the mode of flowing of the blood, what causes death and how it occurs. The frequency is great. Aneurisms of the origin of the arch terminate generally by death, and, too, before they attain a very large volume. Dr. Darrach, of Illinois, in an analysis of 23 cases, came to the conclusion that aneurisms of the ascending aorta terminate pretty uniformly by rupture, while those of the descending arch generally end by exhaustion and irritation, or some concomitant disease of the heart, lung, brain or kidney.[1] The mechanism of the rupture varies according to the seat or the tissue. When it takes place at the surface of the skin or of a mucous membrane, it results from sloughing, caused by continuous pressure or inflammation, and preceded or not by an abscess; or from gradual thinning and final rent and rupture of the membrane. Should it occur at the surface of a serous membrane, Hasse thinks that the serous membrane is mechanically ruptured by the distending force, without previous mortification.[2] Lastly, when the rupture results from the perforation of bones, it takes place not by inflammation, nor abscesses, nor caries, nor necrosis, but by a mere molecular absorption.

The mode of flowing of the blood varies according to the extent of the rupture. If the rupture is large, there is a sudden and considerable rush of blood. If the rupture is narrow, the flow of the blood will be slow, and either continuous or intermittent, as in a case related by Wagner.[3] The usual course is, that a little hæmorrhage occurs, and then the bleeding ceases from syncope, from displacement of parts creating obstruction, or from plugging of the opening by

1 Samuel D. Gross, *Syst. of Surgery*, 3d edit., Philad., 1864, vol. 1, p. 70.
2 Wood, *op. cit.*, pp. 227-229.
3 Wagner, *Miscellan. Natur. Curios.*, dec. 3 ann. v. vi.

displaced clots; but this cessation is temporary, the fissure reopens and eularges, and blood flows again.[3] If the opening is completely plugged or stopped by the fibrinous clots lining the interior of the sac, no hæmorrhage takes place, as happened in the trachea, in the case related by Dr. Reid. The hæmorrhage produced by an aneurism on a *mucous membrane*, usually occurs by small quantity at a time, for it proceeds often from a minute orifice, and the opening is very liable to obstruction by a clot; while the opeuing ou a serous surface, as the pleura or pericardium, being often, perhaps usually, large, is followed by a rapid, contiuuous, abundant hæmorrhage, unless previous adhesions limit the diffusion of the blood. If the orifice be small, as iu the remarkable case of Marjolin, the blood passes from the tumor into the pericardium. We do uot know if any sounds were produced; probably uot, as the opening was very small.

The cause of death varies according to the seat. Should the rupture be followed by an extravasation of the blood in a non-vascular cavity or chanuel, it is the hæmorrhage, either iuterual or external, that brings on death. Iu cases of diffusion of the blood between the coats of the aorta (dissectiug aneurism), death may result from the syncope following the abstraction at once of a large quantity of blood from its natural course; or death may be caused by white softening of the braiu, following the obstruction of the caliber of the carotid artery, dissected all around by the blood. Should the aneurism rupture in a vascular cavity (varicose aneurism), it is probably the mixture of the venous and arterial blood that produces death by asphyxia.

Death occurs differeutly also, accordiug to the seat and the extent of the rupture. In cases of rupture in a non-vascular cavity or chanuel, if the rent is large, death will be immediate; but if it is small, death may be gradual or postponed, more or less, as the hæmorrhage may be stopped by a general cause (syucope), or a local and physical one (plugging of the opening). In cases of rupture iu a vascular cavity (varicose aneurism), death is usually gradual.

(2) *Death from the incessant progress of the phenomena of compression* may occur, first, by alteration of hematosis or asphyxia, resulting from the impairment of the air-passages (trachea, bronchi, lungs); from the compression of nerves — the phrenic (paralysis of the diaphragm), the iuferior laryngeal or recurreut (occlusion of the glottis), the pneumo-gastric (perturbations in the rhythm of the

3 See Holmes's Surgery, vol. 3, p. 357.

respiration and action of the heart); from the compression of the superior cava vein, (œdema of the neck and of the glottis). Secondly, death may be due to alteration of nutrition, either general, and caused by the compression or impairment of the œsophagus, the thoracic duct, the pneumo-gastric and sympathetic nerves; or local and of limited parts, caused by the compression or obliteration of vessels, which may be arteries (the bronchial, giving rise to gangrene of the lung; the subclavian, giving rise to atrophy and gangrene of the superior extremities;[1] the carotid, followed by white softening of the brain) or veins (the superior cava vein, followed by passive diffusion and hæmorrhage of the brain). Thirdly, and lastly, death may be produced by exhaustion from pain.

(3) *Death from spontaneous syncope (without rupture)* may be explained by the mere fact of the existence of an aneurism of the arch, and, specially of the heart disease, such as insufficiency of the aortic valves, which may coëxist with the aneurism, and which is not uncommonly followed by sudden death from syncope; or by displacement of the heart, as occurs in empyema; lastly, by the formation of fibrinous concretions in the cavities of the heart.[2] Dr. Pereira, of Orleans (France), insists very much upon those syncopes to which the patients are subject, and he thinks that the formation of clots, or of bloody concretions accumulating at the point of the dilatation, is the cause of it.[3]

(4) *Death produced by various and accidental complications*, differs in its mode with the complications. We shall note here particularly all the affections of the respiratory system — pleurisy, pneumonia, mere bronchitis even, for they have for result to diminish the action of hæmatosis, so much impaired already; and the gangrenous erysipelas of the dropsical parts, which acts by exhausting the small amount of power of reaction left to the patient. It is, in a word, the drop of water that overflows the cup.

[TO BE CONTINUED.]

1 Wood, *op. cit.*, p. 234.

2 A case related by Dr. Bellingham may be looked upon as an example of it. See Dr. O. B. Bellingham, in *Dublin Med. Press*, Mar., 1849, or in *Arch. de Méd.*, 4 series, vol 21, 1849, p. 341.

3 Valleix, *op. cit.*, p. 199.

Art. IV.—CLIMATE of NORTH-WESTERN TEXAS:

By E. M. Morse, M. D., Kendall County, Texas.

AMONG the many diseases that try the patience, and call into play all the skill of the physician, Phthisis Pulmonalis is certainly not the least. It is not my purpose to enter upon a labored dissertation on this malady. I only purpose to give to the profession and public a few practical, and, I hope, valuable facts in relation to the advantages of the climate of North-western Texas on this disease; and I trust these few crude hints may be as agreeable and acceptable to my *confrères*, as they are likely to prove beneficial to those among their patients who may act on them.

In enumerating the causes of phthisis, Dr. Wood, in his "Practice of Medicine," after placing inheritance at the head of the list, says: "What is next, perhaps, in the degree of influence, *is cold.* Dr. Edwin Lee, of London, in his prize essay "On the Effects of Climate on Tuberculous Disease," makes a distinction, as we used to say in metaphysics, and a very good and practical one, in my opinion. His first sentences on the *causes* of this disease, are true, and, like all he writes in his valuable essay, to the point. He says (more correctly than Dr. Wood): "*Foremost* in the rank of predisposing causes of tubercular cachexy must be placed the action of *humidity*, especially of a cold and humid atmosphere upon the system, and consequently consumption prevails most frequently in countries where this state of atmosphere prevails most during the winter months, as Great Britain and Ireland, a great part of France, Germany and especially Holland. It is likewise extremely prevalent among the natives of hot and moist climates, as the Islands of the West Indies, from the debilitating and relaxing effects of the atmosphere. On the other hand, phthisis is comparatively infrequent in countries where the climate is cold and dry, as in Sweden, Norway, Canada and a great part of Russia.

Mr. Philips remarks, in his work on Scrofula: "The inhabitants of cold countries are not particularly liable to be affected by the external forms of tubercular disease. They are very rarely seen in Iceland, in Greenland, or at Spitzbergen." Now, if any place ought, and does possess, a dry and bracing climate, it is this portion of Texas—Kendall county, and the adjoining eastern, western and northern counties. From the Gulf of Mexico to this point, the country consists of rolling, dry praries, and unwatered post-oak lands. North of this, the same dryness of soil, varied with mountain lands and sandy

deserts, prevails *for hundreds of miles.* The atmosphere has no marsh or low moist land from which it can be impregnated with humidity. The little brooks, *called* rivers, are insignificant mountain streams, running for the most part briskly over shallow, pebbly beds; and the confining banks are too dry and thirsty to let their waters spread out into swamps, from which the air can be charged with moisture.

Among the favorite resorts in this section of country, the little village of Bœrne (pronounced Bœrney), is the most attractive and picturesque. Seguin, Comfort, Sisterdale and Fredericksburg have each their admirers, and are all quiet, orderly little towns, chiefly inhabited by Germans. I have met numbers of the old settlers here, who have informed me that, when they came here, they were suffering from consumption, but are now well, and feel no symptom of the disease. All those whom I have met with here (and I find representatives of nearly all the states, and from several countries in Europe), improve wonderfully, in weight and health, when they have taken proper care of themselves, and proper exercise. Patients who are strong enough, can amuse themselves by hunting deer, wild turkies and partridges, with which this region abounds; and occasionally in fishing, as some of these small streams abound in trout.

The city of San Antonio itself is too hot in summer for pulmonary invalids. The little *mountain towns* north of San Antonio (as Bœrne), are several hundred feet higher above the level of the sea than this city itself. We have severe northers here occasionally, but they are dry and do not seem to hurt the invalids. Persons suffering with *decided* symptoms of phthisis should come and live in this climate, and make it their home. For the benefit of those whose means may be limited, I will state that the fare for first class passengers from New Orleans to San Antonio is fifty-three dollars in currency. This does not include porter's bills and hotel bills on the way. It takes two days and nights from Indianola to San Antonio. By way of Galveston, Houston and Alleyton, the time is something less. Hotels here in Bœrne charge thirty dollars a month *in specie*, but a person coming here to reside six months or a year, can live a great deal cheaper by renting a small house or a room in the village.

I doubt very much whether Upper Egypt, Malta, Naples, Nice, Rome or Maderia, so famous for the beneficial effect of their climates on this disease, can surpass the dryness of atmosphere, the beauty of the prairies, covered with beautiful wild flowers, and the invigora-

ting mountain breezes of this portion of North-western Texas. Certainly no other part of the United States can, for a moment, be compared with it, in its happy influence on phthisis pulmonalis.

Art. V.—LIQUOR MAGNESIÆ CITRATIS.

By J. H. Harte, New Orleans.

THERE have been so many formulas published for this preparation, all differing from that of the Pharmacopœia, that it would at first appear superfluous to add to the number; but it is important that physicians should be aware what their patients receive, when this medicine is ordered. If prepared according to the formula of the Pharmacopœia, it will not keep for more than two days unchanged, and consequently cannot be kept on hand by Apothecaries; yet for many requirements it is the best, containing but a slight excess of acid.

The following formula has been used in most of the first-class drug-stores of this city for several years, and so far appears to answer all the purposes desired, being a pleasant, certain and stable preparation:

℞	Acid. Citric.	℥i;
	Mag. Carb.	℥ss;
	Aq. Bull.	f ℥x;
	Syrup.	f ℥ij;
	Tinct. Lemon.	q. s;
	Pot. B. Carb.	℈ ij.

Dissolve the acid thoroughly in the water; to the solution add the carb. magnesia; and when effervesence ceases, the syrup, flavored with the essence of lemon. Filter, bottle, add the bicarb. potass., and cork. If well stopped, this preparation will keep for months unchanged. In this, however, it is necessary that *all* should be filtered before bottling.

Clinical and Hospital Record.

ART. V.---CLINICAL MEMORANDA :

By S. M. BEMISS, M. D., Prof. Practice of Medicine, Univ. La.

IN redemption of a promise made to the class of last winter, I propose to publish the substance of some one or two recapitulatory lectures delivered at the close of the course. As my sole object in so doing is to aid the recollections of those who so patiently gave their attention to my lectures, I shall give in simple and brief form some points of clinical observation, or of comment, connected with the more important of the cases which afforded topics for lectures. That I may compress as much matter as possible into the space placed at my disposal by the Editors of the Journal, I will arrange in tabular form the cases treated in my wards, and made the subjects of study, either at the bed-side or in the amphitheatre, and follow the table with remarks in regard to the nature or treatment of the more important diseases it contains.

Tabular statement of patients treated in wards 18–19–20–21 and 34,* during session of 1866–1867.

CLASS. I—*Zymotic.*	Admitted.	Discharged.	Died.
Order I—Miasmatica.....Total	119		7
Intermittent Fever.....	74	74	
Remittent Fever.....	10	9	1
Typhoid Fever	1	1	
Dysentery	11	10	1
Diarrhœa.....	22		5
Cholera Epidemica	1	1	
Order II—Enthetici .....Total	12	12	
Syphilitic Affections	11	11	
Gonorrhœal	1	1	
Order III— Dietici .....Total	8	4	1
Scorbutus	2	2	
Lead Poison	3	2	
Alcoholism	3	2	1
Order IV—Parasitici .....Total	2	2	
Scabies	1	1	
Tenia.....	1	1	

* 21 and 34 did not come under my charge until near the conclusion of the term of lectures, and the figures only apply to the period when they were in my service.

Class II.—*Constitutional.*			
Order I—Diathetici.....Total	33	30	
Gout.....	1	1	
Rheumatism.....	29	27	
Anemia.....	2	1	
Debility.....	1	1	
Order II—Tubercula.....Total	30	18	2
Phthisis Pulmonalis.....	29	18	1
Tabes Mesenterica.....	1		1
Class III.—*Local Diseases.*			
Order I—Diseases of the nervous system.....Total	19	13	3
Hemiplegia.....	4	2	1
Neuralgia.....	9	8	
Paraplegia.....	2		1
Aphasia (Cerebral Tumor)....	1		1
Delirium Tremens.....	2	2	
Tetanoid Symptoms.....	1	1	
Order II—Circulatory System....Total	6	3	3
Aneurism of Aorta.....	2	1	1
Valvular Disease of Heart..	4	2	2
Order III—Respiratory System..Total	23	19	4
Pneumonia.....	8	5	3
Bronchitis.....	10	9	1
Asthma.....	2	2	
Laryngitis.....	2	2	
Pleuritis.....	1	1	
Order IV—Digestive System.....Total	13	10	3
Dyspepsia.....	2	1	1
Constipation.....	1	1	
Gastro-Enteritis.....	2		2
Gastro-Duodenitis.....	1	1	
Jaundice.....	2	2	
Peritonitis.....	1	1	
Stomatitis Materna.....	1	1	
Ascites.....	3	3	
Order V—Urinary System.....Total			
Bright's Disease.....	4	2	2
Order VI—Generative System.			
Metritis.....	1	1	
Amenorrhœa.....	1	1	
Masturbation.....	2	2	

Order VII—Locomotive System . . Total			
Synovitis	1	1	
Carious Vertebræ	1		1
Mercurial Periostitis	1	1	
Order VIII—Integumentary System			
Eczema Rubrum	1	1	
CLASS IV.—*Developmental.*			
Order IV—Nutritive System.			
Fatty Liver	4	1	3
CLASS V.—*Violence.*			
Order I—Accident . . . . . Total	2	2	
Poison by Camphine	1	1	
" Poison Oak	1	1	
Order IV—Suicide.			
Poison by Phosphorus	1		1

Malarial affections constituted nearly one-third of the cases presented for treatment. This proportion is increased to fully one-third, if we include those maladies classed under other heads, into the pathology of which malarial influences entered as a more or less important element. Some of these instances will be referred to in the course of the *résumé*. It was held that nothing new could be affirmed respecting the natural history of malarial poison; the allegations of Dr. Salisbury being declined until better substantiated. The clinical phenomena of the periodic fevers were indicative of the severer forms of malarial poisoning. This statement is based upon the resistance to treatment, the frequency of relapses, and the strongly marked cachexy common to the majority of the cases treated. No well marked instances of pernicious intermittent or remittent, occurred in the wards.

One of the students was, however, the subject of an attack, whose violence, unusual symptoms and pathology were discussed in presence of the class. In this instance the first paroxysm was accompanied by vomiting, and afterwards jaundice, but was not otherwise unusual. The succeeding paroxysms were attended by bloody urine and a state of profound and total anemia. The surface, lips and tongue were bloodless; pulse thready and barely perceptible; patient incoherent. After some days endurance of this extreme condition, the

pulse began to gather more force, the color to improve, and the case ultimately terminated in recovery. Antidotal and sustaining measures constituted the treatment. Quinine was exhibited in large doses, both by mouth and rectum. Muriated tincture of iron was also given; and brandy, milk punch, wine, beef essence, etc., urged upon him at short intervals and in decided quantities. The explanation given of the pathology of this case was, that it was an attack of periodic fever complicated with a catarrhal affection of the stomach and duodenum, whence the vomiting and ultimate jaundice. The utter dissolution of blood constituents was attributed to the conjoint influence of malarial poison and bile products. I regard the complication as one of the most dangerous which can occur, and likely to manifest an epidemic tendency, if the complication with catarrh be admitted as the perturbating cause. In the March No. of this Journal, Dr. Barnes has alluded to similar cases, but accounts for them in a different manner. And I must in truth confess, that my explanation of the pathology of these phenomena must be qualified to apply to those cases in which the composition of the blood had suffered deperdition from causes other than an ordinary state or degree of jaundice superadded to an ordinary state or degree of malarial poisoning, since it so often occurs to us to observe this pathological combination without the production of alarming or unusual symptoms. Future investigations seem yet needful to enable us to give a perfectly satisfactory explanation of the morbid conditions yielding the phenomena above described.

The treatment of malarial affections was both eliminative and antidotal. Quinine was the remedy chiefly, indeed almost wholly relied upon. A preliminary cathartic was given in a majority of cases, the indications for exhibiting it being deranged state of secretions and sufficient time before the expected paroxysm to prevent it by obtaining the effects of quinine, given subsequently to the action of the cathartic. The contraindications of the cathartic were healthy secretions, and a desire to anticipate the returning paroxysm by immediate exhibition of antiperiodics. The quantities and urgency with which quinine was exhibited, were in measure to the severity or early approach of the paroxysm, with one qualification to be shortly specified.

Efforts to arrest the cold stage were frequently and successfully employed. Two prescriptions were used for this purpose. The one most efficacious was chloroform and tincture of opium, aa gtt. xx,

in mucilage of acacia, and repeated in half hour, if necessary. The other ... aromatic spts. ammon. gtt. xxx; tinct. opii. gtt. xx, given in same manner. These prescriptions were given during every period of the cold stage, and the former not infrequently in the commencement of reaction. It may be recollected that, on one occasion, the above stated dose of chloroform and laudanum was followed by a convulsive seizure, occurring some twenty minutes after its exhibition. The case was one of those not uncommon instances, in which paroxysms of periodic fever are accompanied by urticaria. The cutaneous irritation was, with this patient, unusually general and severe. In commenting upon the case, it was held that there was at least a possibility that the remedy might have determined the convulsion; and that, as the urticaria was probably indicative of some secondary blood poisoning, its presence should prompt us to withhold remedies which might add to the blood contamination.

The House solution of quinine was commonly used, each fluid drachm of which contains five grains of quinine and five drops of tincture of opium. It was ordinarily prescribed in ℥i doses every second to sixth hour, until from twenty to thirty grains had been received. In quite a number of cases cinchonism seemed to be more speedily and effectually established by giving ℥ij of the solution in one potion, and repeating at intervals of four to eight hours. This course of procedure was limited to cases in which the chill was not due at a less period than four hours from the time of prescribing. My experience accords with that of Eberle, that quinine given immediately preceding a chill not only fails either to prevent or mitigate it, but sometimes disturbs in a violent manner the usual course of the paroxysm.

In almost every case treated, lemonade was prescribed *ad libitum*. This is very refreshing to the patient, is eagerly taken, and exercises an unquestionable salutary influence; sometimes bitartrate of potassa was added, in such quantities as to secure a soluble state of the bowels.

The average length of time the cases of intermittent fever were in hospital, was 11 days; this, of course, included many relapses, which occured before the patients were sufficiently restored to admit of departure from hospital. Relapses were so common, that they might truly be said to constitute the *rule*. Different measures were employed to prevent their occurence, but none of them were invariably successful. When the patient possessed sufficient intelligence to

coöperate with the prescriber, the course which seemed wisest was, first to break the succession of paroxyms by antiperiodics, then to give quinine as a prophylactic upon the first indication of a relapse. During the interim, the only treatment instituted was for relief of the malarial cachexy and for promotion of healthy blood changes; but the very first sensation of malaise was interpreted as an indication of approaching relapse, and quinine was given as prophylactic. Very few relapses occur so suddenly that full time is not permitted for these preventive measures, but the great obstacle to their successful employment is found in a want of coöperation on the part of the patient.

Arsenic was prescribed both as a prophylactic and as a curative agent; it was most often given in the form of Fowler's solution, in doses of from ten to fifteen drops three times daily. Its good effects were more uniformly manifested in those cases in which relapses took the form of periodical neuralgia, but it proved likewise a valuable adjunct in the treatment of those constitutional depravations which we include under the designation of malarial cachexy.

Anemic conditions were treated with chalybeates, either given continously as blood restoratives, or in conjunction with the antiperiodic or tonic prescriptions of quinine. Very efficient formulæ as antiperiodics and tonics were—quinine, gr. ij. to iv; ferrocyanide of iron, gr. iv to viii; pulv. guaiac, gr. viii to xvi; repeated every 4 to 8 hours; also, solution of citrate of iron and quinine, gr. v, in infusion of columba, ℥j, repeated at same intervals. Gadberry's iron was used with excellent advantage. The phosphates of iron, quinine and strychnia (see Aitken, also Reynolds) were also recommended. Warburg's "Tincture of Quinine" was very effectually tested, but failed to answer the expectations created by Maclean's eulogy.

Most of the cases of remittent fever were sailors from highly malarious ports. The fatal case was admitted without history, and in a delirious condition. Authority for classing it as a case of remittent fever rests upon probabilities only.

The cases of dysentery occured for the most part in autumn and the early part of winter. If the patient was admitted at an early period of the attack, the treatment was commenced by exhibiting a decided saline purge. The catharsis thus induced was immediately followed by opium, in from one to two grain doses, repeated at suitable intervals, according to the difficulty experienced in controlling the bowels or in relieving the pain. If there was evidence of mala-

rial complications, quinine was combined with the opium. In a majority of cases this element was so apparent, that there was no doubt of the indication; in others it was suspected, so that there remained scarcely a case, during the progress of which quinine was not exhibited. In private practice it has often occurred to me, to jugulate dysentery by prompt resort to this method of treatment. No such event followed in any case enumerated in the tabular list. This was probably referrible to the fact that the cases came under observation later in the progress of the disease. Great importance was attached to the benefits of the saline purge, when used not only as a first measure of treatment, but when used in incipiency of the attack. Its good effects were attributed to a twofold action: first, that of simply removing irritating matter from the intestines; second, and more important, that of exciting serous effusion, and thus acting as a local bleeding, in relieving the congested capillaries of the inflamed bowel. It was thence argued that its good effects were more certainly obtained when exhibited sufficiently early to arrest the inflammatory process, before it proceeded to serious lesions of structure. Sulphate of magnesia was by preference employed, and the dose was regulated by the estimate of existing constipation or inflammation to be overcome. Generally after the action of the purge, and under the effects of the opiates, the patient obtained some hours of respite from pain or tenesmus; when no longer controllable by opiates, recumbency and warm fomentations over the bowels, laxatives were again used. Under these circumstances the choice rested between reduced portions of saline cathartics, rhubarb and magnesia, and castor oil; whichever was selected, its action was modified and hypercatharsis avoided by the addition of opiates to the dose, or their employment *per rectum*.

No case of dysentery was trusted exclusively to the "Ipecac treatment," although it was given in greater or smaller doses to a number of patients. Without stopping to discuss the possible local influence of ipecac upon mucous surfaces, I think its beneficial effects may be attributed to its action upon the skin, its action as an arterial sedative, and its action in inducing gentle relaxation of the bowels. With these views of its mode of action, its exhibition was limited to the earlier and febrile stages of the disease. In one case of great severity, it was given in two grain doses, with a similar quantity of opium, and repeated every two hours until positive alleviation was obtained.

In no class of affections brought under observation were the results of treatment more unsatisfactory than in chronic diarrhœa and

chronic dysentery. I extend the same paragraph of remarks to both affections, because whichever one formed the starting point of disease, the whole course of intestine was liable to become involved; so that at last clinical distinctions were rendered either impossible, or practically unnecessary. Some of the cases seemed to originate from neglected lientery ; others followed acute attacks of diarrhœa or dysentery; while several had apparent origin from some cachectic condition, probably scorbutic, contracted during army life. One case depended upon tubercular affection of the mesenteric glands. In this instance I failed to recognize the true cause of the diarrhœa, although the examinations had been so carefully made as to authorize a diagnosis of plugging of the left iliac vein. The *post-mortem* verified the latter point, and disclosed the former. No specified plans of treatment were proposed, which were to have application to all cases. The leading indication inculcated was to secure the patient's nourishment by the administration of suitable aliment in small quantities and short intervals, and, by limiting excessive peristalsis, prevent the food from being hurried along the intestinal surface too rapidly to permit absorption. The use of opium in some form was resorted to in every case. In some instances it was given in small doses every three to six hours, according to the demand; other patients got two grain doses at bed time. This latter method of prescribing sometimes had the effect to secure refreshing sleep and lessen the hyperæsthetic state of the intestinal walls. The doses of opium, the frequency of their repetition, its indications as a curative agent, all hinged upon one clinical observation of its effects; if it produced nausea, destroyed the appetite, or interfered obviously with assimilation, in any combination whatever, its further use was deprecated and was restricted to occasions when its employment became absolutely necessary for the purpose of restraining exhausting stools.

A favorite treatment in these affections, and especially applicable to those cases in which the lower bowel was principally involved, consisted in a diet of boiled milk, or fresh iced milk, with the addition of lime water, and no medication except a suppository of opium two to three grains, cacao butter ten grains, introduced well beyond the sphincter. It sometimes occurred that an enema of opium and flax-seed mucilage was to be preferred, because of its more prompt action, but in all other respects the suppository was more advantageous to the patient, being more conveniently employed, and often tolerated when enemata were immediately voided. In

cases associated with marked anemia, iron was prescribed. The preparations, mentioned in the order of their preference, were sol. nitrate; mur. tinct.; sulphate; sulphate of iron and ammonia, and potassio-tartrate. Many of the class may recall the frequent improvement of patients after being placed upon the use of twenty drops of sol. nitrate of iron and twenty drops of tincture of opium, from every 4 to 8 hours.

Attention was several times drawn to clinical observation of the effects of prolonged application of astringents to mucous surfaces. Whenever astringents were given so largely or so repeately as to arrest either the natural or preternatural secretion of a mucous membrane, especially if it had existed long or was dependent upon inflammation, the sure effects would be renewed congestion and irritation. It was therefore made an especial point of admonition, to avoid so free or protracted use of astringents as to inure to the patient's detriment in this manner. It is not difficult to obtain the full benefit of astringents without incurring these disadvantageous results, provided their effects be watched and their use suspended before complete arrest of secretion has occurred, which event is readily indicated by cessation of discharge and by a dry and reddened tongue. Illustration of the truth of these observations was drawn from the results of topical applications in the treatment of diseases of the genital system, especially of the female organs. It frequently occurs that specialists of the "Cervicitis" school, either sharing the illusive hopes of relief they impart to their patients, upon the arrest of discharge by the local effect of astringents, or intentionally deceiving them, dismiss them from treatment as cured, only to apply to other medical advisers in aggravated conditions of disease. The mineral acids were quite frequently given, with apparent advantage, during the progress of cases of diarrhœa. For a purely astringent effect the sulphuric was preferred. It was exhibited in the form of the dilute officinal formula, or as sulphuric acid lemonade, using sufficient syrup of ginger to render the acidulated fluid palatable. When a tonic effect was desired, or an aid to impaired digestion, the nitro-muriatic was preferred, given in combination with some vegetable bitter, colomba, gentian, chirayta, or sometimes a cold infusion of wild cherry bark.

The case set down as Asiatic cholera was free from doubts as to diagnosis. The patient, upon admission, was bordering upon a state of collapse, with cold extremities, nose, breath and skin. His pulse

was clearly perceptible at the wrist. He had vomiting and purging of the characteristic "rice-water" fluids, suppression of urine, which existed for over 48 hours, cramps and a considerable degree of cyanosis. The treatment instituted was very simple. The patient was placed in a secluded part of the ward, and kept in a state of recumbency and complete quietude. One grain of unmixed sulphates morphia was placed upon his tongue at the moment of admission, and washed down with a spoonful of iced water. Chloroform in ten minim doses was ordered for the purpose of controlling the spasms, but they were so decidely mitigated by the opiate, that its use was limited to external application over the epigastrium and frictions over the extremities. Two or three stools occurred within the two hours immediately following his admission, but they were so small as to excite no additional apprehension. Indeed there might have been justice in the conclusion that they were composed of matters remaining unexpelled, which had been effused in earlier stages of the attack. During the night the nurse became alarmed, and gave the patient two additional doses of morphia, as I think quite unnecessarily; but this was the whole sum of medication the patient received, except some neutral mixture during the stage of reaction. The patient's alimentation was carefully guarded, he being restricted to small and frequently repeated quantities of boiled milk, chicken-broth, and toast-water made cold with ice. The patient passed slowly, but without any untoward symptom, through the process of restitution to accustomed health.

The importation theory of cholera was taught, in preference to that which holds to a belief in its origination *de novo*. Dr. Johnson's theory was inculcated, in so far as it respects a belief in the reception into the system of a poison, which becomes the cholera-producing cause; but it was not inculcated, that it must of necessity follow that the rice-water discharges were the means by which nature sought to expel this poison, and clinically it was emphatically taught that it was wrong treatment to endeavor to aid these assumed measures of the *vis medicatrix naturæ*, by encouraging either the number or amount of dejections from the bowels. It is not the first time in the history of our profession, that beautifully plausible theories have given support to practice which all afterwards acknowledge to be wrong. For example, it was once supposed that the presence of albumen in the urine of dropsical patients was conclusive evidence that the effused fluid was finding its escape *via* the kidneys, and consequently albu-

minous urine was critical and a desired event. Space cannot be afforded for further remarks in this connection. Those who may desire fuller expression of my views, are referred to some editorial pages in the January No. of this Journal.

The case of typhoid fever was well marked. The patient, a stout sailor, aged 22, was admitted to ward 19 on the 21st of January. He had been suffering with *malaise* and mild diarrhœa for about one week previous to admission. The stools were copious, ochre-colored and offensive, but did not occur more frequently than twice or thrice daily. At date of admission abundant characteristic eruptions were scattered over the anterior surface of the body, and appeared more sparsely on the arms and thighs. The tongue was covered with whitish fur posteriorly, but denuded and reddened about the tip. Slight tenderness and gurgling upon pressure over ileo-cœcal region. The treatment in the first week after admission consisted of much diluted solutions of chlorate of potassa and bicarbonate of soda, with ten grs. of Dover's powder at night; after which it was changed to the following prescription: ℞. Acid. sulphuric dilut. ℥ij; Quiniæ sulphat. ℈j; Tinct. cinchon. comp., syrup zingiber. *aa.* ℥j. M. S. Dessert spoonful in ice-water thrice daily. Also sulph. morphiæ gr. ss. in camphor water ℥j. was given at bed-time. Warm fomentations were kept continually over the abdomen, and the patient nourished with fresh eggs, beef essence, milk and rice, and milk punch. He was discharged on the 31st day after his admission.

The only "implanted" diseases which occurred in my wards, were venereal affections. So many of the patients admitted to the wards of Charity Hospital have been the subjects of constitutional syphilis, that it is rather the exception than otherwise, in so far as it respects the male wards at least, that the patient does not present some ground for a suspicion, if not conviction, that he is impressed with the syphilitic diathesis. So far then are the cases classed under this head from representing the gross number of cases into which some manifestation of syphilis enters as an important element, that they must be understood to consist of those diseases alone which not only bore evidence of syphilitic origin, but which would not admit of satisfactory classification under other heads. In the majority, the manifestations were periosteal affections. One was an unusually excellent illustration of gummy tumors, and was the subject of some clinical remarks by Prof. Stone. Another exhibited a very interesting, although obscure, train of nervous symptoms, such as loss of

power of coördinating muscular movements, so that all efforts of locomotion were uncertain and irregular. The patient was discharged after a course of antisyphilitic remedies.

The case of alcoholism, which terminated fatally, was one of acute poisoning. The patient had been for several days on a debauch, and, without previous mania or evidence of encephalic inflammation, sank into an incomplete but quiet coma, which terminated in death. The other cases were those of delirium from drink. Important distinctions were drawn in the clinical study of these cases, between those in which the morbid phenomena were referrible either to the poison of alcohol present in the blood, or to its ultimate blood-poisoning influence brought about by derangement of secretory or excretory function, and those cases on the other hand in which the prostrated energies and nervous exhaustion produced by long continued habits of drunkenness and debauchery constituted the pathological condition. In the former case, we have disordered nerve function from recrementitious material in the blood; in the latter, this may likewise occur, or it may not, but the condition to which we chiefly direct our attention, is the asthenia of the drunkard's cachexy. The practical necessity for such a distinction lies in the fact that, in the former instances, eliminative or deobstruent treatment and avoidance of alcohol are measures of prime importance; while, in the latter instances, supporting treatment, alcoholic stimulants and opiates are the measures to be relied upon. Bromide of potassium was given in most of the cases, but with doubtful benefit. Opiates were used in all cases, after previous careful attention to the state of the secretions.

The cases of rheumatic fever were well marked, and afforded valuable opportunities for studying that important disease. All of the cases occurred in the persons of stout sailors, who had not been exposed to malarial influences. No instance of imperfect cure or of pericarditis complicated the cases. Indeed the results of the cases were so satisfactory, that there was justification in speaking in a commendatory manner of the measures employed. The treatment was more uniformly the same as applied to the aggregate cases, than in any other affection under observation, with the exception of periodic fevers. It consisted of ℈j. doses of bicarb. potass. every two to four hours, according to the urgency of the symptoms, and opium in quantities sufficient to appease pain. One patient, who was a man of powerful frame and who labored under the most violent attack

treated, got opium in two and three grain doses at such short intervals, that he took seventy-six grains during six days' treatment. I have no fear that such heroic use of opium, although backed by a teacher's authority, will ever lead those who witnessed it into the error of abusing this remedy. So many occasions arose for pointing out the various conditions of disease, in which large doses of opium were indicated, as well as those in which they were contra-indicated, that I am satisfied for this record of practice to go forth without further comment. Quinine was given during the progress of almost every case of rheumatism. It was not given with any reference to its antiperiodic properties, except a possible influence over those cases marked by copious sweating stages. It was ordinarily given in five grain portions, combined with the dose of bicarb. potass., as recomended by Garrod, and repeated until from one and a half to two scruples had been exhibited. In some cases benefit seemed unquestionably connected with its use, and in no instance did any suspicion prevail of injurious effects from its administration. No case of rheumatism was left wholly to the blister treatment. They were employed, however, in a number of cases, and with very obvious benefit. With the exception of a preliminary laxative, purging was avoided in the treatment of rheumatism, as productive of no benefit and occasioning the patient unnecessary pain and inconvenience, thereby even aggravating the disease.

The number of cases of pulmonary tuberculosis gave opportunity for instructive clinical study of that disease. It was pointedly taught that the process of tuberculization, or deposit of tubercular matter in any tissue, was but the local expression of a state of the system existing anteriorly and determining the deposit. This underlying condition, it was argued, was general to the system, andmost probably had its origin in a depraved condition of the circulatory fluid, rather than to a predisposition on the part of those tissues which became the seat of the deposit, however much influence this structural diathesis might possess in determining the locality of the tuberculization. Although it may be impossible to explain what particular state of the economy constitutes the tubercular diathesis, clinical observation clearly points to its very common association with deprivation or perversion of nutrition. The lessons deduced from these pathological tenets were, that rational treatment of tuberculosis must be directed to the healthy maintenance of the patient's nutrition. The improvement and integrity of all those processes connected with

tissue-waste and repair should be our chief point of concern. Every measure which promotes healthy nourishment of the economy, and developes vital energy, favors the *arrest* of tuberculosis; and to this term we must limit the signification of *cure*, as applied to consumption. Principal among such measures, were mentioned the most highly nourishing varieties of food, in quantities limited only by the capacity of the digestive powers, and exercise in the open air. Attention was repeatedly called to the fact that pure air possessed increased value to consumptive patients, because the impairment of lung function entailed greater liability to derangement of pulmonary blood changes. Alcoholic drinks, in the form most agreable to the patient's tastes and best tolerated by his stomach; chalybeates, tonics and various restorative remedies, were all admitted to possess value in combatting specified conditions of the tubercular diathesis. It was, however, made an especial point of admonition, to avoid stuffing consumptive patients with remedies under the well-meant intention of giving tone to lowered vitality, when the real effect of such dosing might be to derange assimilation and produce aversion for food. Another observation of some importance is to modify, or desist from, tonic or stimulant measures of treatment, during the occurrence of those local inflammations which from time to time attend the march of pulmonary tuberculosis.

The two cases of epilepsy presented many points of interest. One occurred in the person of a sailor aged about 33, who was the subject of constitutional syphilis. His first attack had happened about one year ago, and was followed by violent mania, persisting for several weeks. The second accession was equally sudden in its advent, and was followed by furious maniacal excitement, lasting for ten days. After this he had severe cephalagia, with a discharge of bloody mucus from the nares. He had likewise protrusion of the globe of the right eye with complete loss of vision. This seemed to be occasioned by a small tumefaction at the upper and posterior part of the orbit. So much amendment followed the steady application of the mineral and vegetable alteratives, that he left the hospital for his usual pursuits in the month of April.

The second epileptic was an Irish widow, aged 35. The history she gave, after rigid examination, was that she had fallen into habits of masturbation after the death of her husband, in 1862, and that in 1865, while holding one of her children who was in convulsions, she was seized without any preceding intimation with an epileptic

fit. Several recurrences had been experienced, from the date of this event to the period of her admission to the hospital. In the meantime the habit had been continued, although practised less frequently for some months, because of a spontaneous conviction that it was influencing her health. The patient had habitually costive bowels, headache, vertigo, flushings of the countenance and lack of composure under examination. The catamenia were irregular as to periods of return, and were accompanied by pain. The vagina was hot and sensitive, uterus in normal position and apparently healthy. There seemed to be an undue amount of sebaceous secretion about the nymphæ, and there was complaint of intolerable itching. The treatment upon which she was placed was as follows: A pill was given thrice daily, composed of sulphate of iron, pulv. aloes, extr. nux vomica, pulv. ipecac, each one grain, extr. belladonna one quarter grain; night and morning, 30 grains of bromide of potassium in solution; and vaginal washes twice daily, of weak solution of borate of soda in cold infusion of tea leaves. After the use of the washes, the vulva to be powdered with pulv. camphor, ℥ss; starch, ℥ss; calomel, ℈j; well incorporated. Cold affusions to the head and cold sitz-baths were recommended, and the patient advised to eat sparingly at supper, and to observe strict control over the emotions. No other paroxysm has returned to the present time.

One suggestion in regard to the pathology and treatment of epilepsy was thought sufficiently important to be instanced during the clinical remarks upon each of the cases. This was that, in all cases of epilepsy, there was a morbid element common to the neuroses, which was probably best understood when termed a self-perpetuating or *auto-pathogenetic* tendency, but variously explained by different pathologists; some referring it to nervous excitability or irritability, others supposing that there occurred accumulations of nerve force and explosions dependent thereon. Whatever explanations are adopted, it must be understood that there exists a tendency to the recurrence of the seizures, because of some impression on the nerve centres, which we term force of habit, and which deepens with the frequency or violence of the accessions, or which is more strongly manifested in some cases unattended with either frequent or severe seizures, because of greater *impressibility* of the nervous system. The other pathological element in epilepsy is found in the primary inducing cause, and may remain present and operative in the case; or may be removed, and yet the influence of the first mentioned ele-

ment may suffice to perpetuate recurrence of the convulsions. Wise treatment should therefore be two-fold, one provision looking to the subdual of this neurotic element, the other to the removal of the inducing cause. In the former aspect, our efforts are directed to the relief of functional nerve diseases; in the latter, to the cure of morbid anatomy, of structural change. But the latter condition may never have existed; or may have been cured, and the disease still remain as one of the true neuroses. For effecting the former purpose we select belladonna, bromide of potassium, zinc, hyoscyamus, conium, nitrate of silver, chalybeates, cold baths, etc., together with closest attention to hygienic regulations. The treatment designed to answer the latter requirement, must be varied so as to apply to each particular case that arises. Antisyphilitic remedies, in the case of the male patient under notice, and allaying irritation or inflammation of the genital organs, in the female patient, were the measures employed to meet this indication.

The case of aphasia was one of much professional interest. The diagnosis was very clearly made out, if we except the error into which I fell upon my first examination, of supposing it connected with right hemiplegia, and that partial recovery of the paralysis had occured. This theory, which regarded vascular disease as the cause of the aphasia, was, on subsequent examinations, not insisted upon, and the *locality* of the cerebral disease was conjectured without attempting to explain the cause or nature of the structural changes. A brief clinical report of the case, with the results of *post-mortem*, has been published in the May No. of this Journal. As the death of the patient occurred after the close of the lectures, I copy again the account of the inspection of the brain. The patient, it will be remembered, was an Irish woman, about 40 years of age, occupying bed 524 in ward 34, and was made the subject of a clinical lecture on the 18th of February.

"The *post-mortem* was made on the morning of the 22nd of March, by Dr. Souchon, Messrs. Giffen, McNeil and the writer.

"The external surface of the brain was entirely healthy. In removing the substance of the left hemisphere by successive thin sections, a tumor was disclosed, situated principally in the middle lobe, approaching to within one-half of an inch of its inferior surface, and extending into the anterior lobe. The tumor was in size something larger than a pigeon's egg and not unlike it in form. The long diameter was parallel to the base of the ventricle, and the larger end

pointed posteriorly. The line of the fissure of Sylvius divided the tumor into two unequal parts, so that scarcely one-third part extended into the anterior lobe. It was external to the optic commissure, the pituitary body, tuber cinereum and corpora albicantia; but encroached considerably upon the optic tract and crus cerebri, and occupied the anterior portion of the corpus striatum. It extended to within $\frac{1}{16}$ of an inch of the lining membrane of the anterior cornu of the lateral ventricle, which was thickened and opaque. The consistence of the tumor and microscopical appearances were those of fibroid growths. No other evidences of disease were found in the encephalon. From an improper understanding of instructions, the body was interred without further examination. There was, however, no cause to suspect disease of any organ but the brain."

The clinical observations recently accumulated by our profession, showing that, in disease of this portion of the brain, loss of *faculty of language* is likely to occur, while nothing of the sort usually takes place in disease similarly situated in the right hemisphere, have given rise to much interesting discussion. The point of satisfactory explanation of this curious implied connection between damage to the third convolution of the left frontal hemisphere and loss of faculty of language, has not been reached, but continued research and discussion must ultimately achieve this result. Of the several theories thus far promulgated in explanation of this phenomenon, that of Mr. Moxon is most worthy of being mentioned for ingenuity and plausibility. Mr. Moxon, after admitting the duality of the brain, suggests that, in the performance of all acts of thought or muscular movement, although both halves participate, yet that one hemisphere governs and the other simply coördinates in action with its principal. The individual's attention is therefore directed to one hemisphere only in delivering and executing mandates of the will, and these are executed chiefly through that hemisphere, but with the coöperation of the other and subordinate half. This being admitted, it naturally follows that the left hemisphere, being the source of nervous supply to the right side, would be that one whose development would be increased in measure to the increased demand of the opposite side; and thus, in right-handed persons, would be the governing half and the one upon which attention is fastened while exercising the faculty of language. The theory must likewise admit that, in instances where this asymmetry preponderates in the right hemisphere, as in left-handed people, a converse statement of the proposition should

obtain, and the lesion which produces aphasia in left-handed patients should be found in the right hemisphere instead of the left. A case lately reported by Dr. Hughlings Jackson seems to sustain this premise, but further observations are required to establish it.

Nine cases of pneumonia occurred in the wards under my charge. Only four of this number were admitted after the developement of the attack. In the remaining five the pneumonitis was intercurrent, supervening at various periods after admission to treatment for other diseases. The pneumonia was double in two of the cases, both fatal; confined to the right lung in five cases, one fatal; to the left in two. It was not limited to the apex of a lung in any one of the cases upon the list, except that, in one of the double cases, the entire right and apex of the left were the seats of inflammation. One case of circumscribed pneumonitis did occur, which was confined to the apex of the right lung, but as the inflammation was secondary to tubercular deposit, it is not included among the cases enumerated as pneumonia.

In one of the double cases, which proved fatal, heart clot was conjectured to exist, and the probability mentioned in a clinical lecture, together with a statement of symptoms upon which the diagnosis rested. There were a wabbling, unsteady pulse; the peculiar anxiety of countenance, so commonly indicative of serious derangement of circulatory functions; cyanosis, differing at times very obviously in degree, and upon auscultation very evident disturbance of normal cardiac movement. The diagnosis could not have been safely trusted to physical signs alone, yet they, taken in connection with the other symptoms, justified the conclusion arrived at. *Post-mortem* inspection disclosed a clot in each cavity, that in the left extending from the ventricle through the auriculo-ventricular opening into the auricle. Each clot was entirely deprived of red globules, and was intertwined with the tendinous cords. The treatment of this patient was carb. ammon., alcoholic stimulants, wine whey, beef essence, etc. Death occurred in twelve hours after admission.

Quite all the patients were subjects of malarial influences, and the treatment was generally begun by administering quinine in positive doses, until from one to two scruples had been exhibited. Beyond this point the treatment was for the most part expectant, and was generally restricted to moderate doses of Dover's powder, at intervals of four to eight hours; neutral mixture or liq. subacet. ammon. ℥j, every second hour; a drink, *ad libitum*, of a lemonade made with

infusion of linseed; careful attention to nutrition and diet from the incipiency of the attack, and prompt resort to alcoholic stimulants upon the earliest indication of flagging powers. In every case applications of linseed poultices, or of flannels wrung from hot water were constantly kept over the chest. A covering of oiled silk was placed over the poultice or flannel, to prevent too rapid cooling by evaporation, and to protect the bedding from moisture. Blisters were used in only two cases, and lowering measures, *as such*, were in no instance resorted to. In one case, under treatment at close of the session, there was, from some unknown cause, an arrest of the process of removal of the exudation; and the patient remained for several weeks with the base of the right lung hepatized. At date of last examination, about the first of May, the resonance upon percussion was nearly normal, but the respiratory murmur near the base of the affected lung was feeble and attended with abundant moist *râles*. The treatment was alterative and sustaining. One grain doses of protiodide of mercury were given nightly for several nights, and then withheld for a similar period and resumed. Iod. potass. and sarsaparilla were likewise given; lastly ten grain doses of hydrochlorate of ammonia thrice daily. A blister was applied over the seat of disease, and, after healing, tincture of iodine was painted over the surface of the chest.

In lecturing upon the pathology of pneumonia, it was regarded as a simple inflammation, and the doctrines of preëxisting and determining blood crasis, although discussed at length, were left for the student's investigation, and adoption or rejection after more mature acquaintance with the principles of his profession.

The fatal case of bronchitis was a female 74 years of age, who died from exhaustion and debility.

The cases of asthma are listed among the diseases of the respiratory system, though it will be remembered that, in my lectures, I classed the affection as one of the neuroses. The cases were very typical, and call for no particular description. The treatment consisted in relieving the paroxysms with narcotics, anodynes and anesthetics, and then endeavoring to remove the inducing cause.

Of the four cases of heart disease, two proved fatal after the close of the term. One was discharged, and the fourth case left the hospital without permission a few days after admission. Taking the cases in the order of their presentation before the class, the patient referred to as having been discharged would be the first to be men-

tioned. John Broga, æt. 22, by profession a barber, but for some months past acting as fireman on board a steamship, was admitted to ward 19 on the 19th November. The history given was, that he had been suffering under some form of fever for several weeks. From the fact that he had been on a malarial coast and his account of symptoms, I inferred that the attack was of the remittent type. Before full convalescence, he was thoroughly wet and chilled by exposure during a heavy storm. After this his feet and abdomen began to swell, and continued to increase in size until he entered the hospital. At this time the amount of fluid in the abdominal cavity was so considerable as to give the patient great inconvenience by distention and pressure upon the diaphragm. The lower extremities were anasarcous, and loose tissues about the genitals tense with serous infiltration. Upon auscultation, a murmur was detected accompanying the first sound and loudest at the apex. It did not, however, communicate to the ear the impression of very considerable valve lesion, neither did any physical signs give evidence of hypertrophy or dilatation of the walls of the heart. It was therefore concluded that the dropsy was due to the combined action of three causes: first, the weakened capillary circulation, from lessened cardiac impulse; second, the weakened capillary circulation from indeterminate blood changes, due to the influence of the attack of fever; third, the effects of cold in producing further disorder of the blood, by arrest of cutaneous secretion. The treatment consisted of elaterium, gr. $\frac{1}{4}$; extract of conium, gr. ij, every third hour till active catharsis. This course of purgation was not prolonged beyond twenty-four hours; and afterwards the bowels were kept sufficiently loose by bitartrate of potassa, ℥j, infusion of juniper berries, Oj, to be taken in twenty-four hours, or the compound jalap powder. In the intervals between the administration of the purges, quinine, chalybeates and digitalis, together with good nourishment, were prescribed. The patient was discharged on the 21st day of Jan., relieved of all evidence of disease except the valve lesion.

The patient who left without permission was the subject of mitral lesion.

The third patient, John Morris, æt. 30, was admitted to ward 21 on the 11th day of February. This man had incurred malarial fever during service in the army, and had been in a hospital at Boston, to be treated for some form of febrile disorder which he could not define. After his discharge, he found himself unable to take active

exercise or ascend steps without difficulty of breathing. He had never had dropsical effusion, either into any cavity or into the areolar tissue, yet his face looked somewhat puffy and was quite sallow; indeed the yellowishness of the tinge was suggestive of jaundice. No case could have been brought before a class better calculated to exemplify that facial expression of anxiety which has been aptly termed "Heart Anguish." The inward mental consciouness of the insecurity of the hold upon life, was strongly marked upon his countenance. The physical signs upon examination were two murmurs, the most audible connected with the first sound and loudest at the apex; the other connected with the second sound and loudest at the base. The apex impulse was most marked to the left and inferior to its normal position, and was diffused and weakened. The area of cardiac dulness was enlarged. The patient's digestion was greatly inpaired, and his sleep imperfect and unrefreshing. The diagnosis was mitral and aortic incompetency, and a very unfavorable prognosis given. The patient was made acquainted of the danger of his condition, and was advised to be kept free from mental and physical excitement. He was ordered fifty drops of the following mixture, in swectened water thrice daily: Tinct. digitalis, tinct. ferri muriat. aa. ℥ij; tinct. nucis vomicæ ℥i. M. Careful attention was paid to his diet, and constipation of the bowels removed by an occasional pill of calomel, gr. ½; extract colocynth gr. ij; ext. hyoscyamus, pulv. scillæ aa. gr. j. The patient died very suddenly about the first of April. The pericardial sac was enormously large, and contained fully a pint and a half of fluid. The heart was both hypertrophied and dilated. Fatty alterations of structure were found affecting the mitral, the aortic and, to a slight extent, the tricuspid valves. Dr. Souchon has made excellent dry preparations of the diseased valves and the pericardium, which may be examined in the University Museum.

The fourth case was a seaman, æt. 39, admitted to ward 18 on the 16th March. This patient stated that he had always enjoyed good health, until about six weeks previous to his admission into the hospital. At this period he began to suffer from pericardial pain and inability to take violent exercise, and these symptoms had gradually increased in severity. There had been no dropsy and no very considerable derangement of vital functions. His countenance was freer from anxiety of expression than in the case of John Morris. Upon ausculation, a very loud murmur was heard accompanying the

second sound and diffused over a large area, but most strongly emphasized about the middle of the sternum. The murmur was prolonged, occupying the whole space of the second sound, and seemed to possess somewhat of the qualities of an aneurismal thrill. It seemed to have evidently a duplex composition, and my diagnosis was, there existed both narrowing of the aortic orifice and aortic valve disease, associated with cardiac hypertrophy. The treatment did not differ materially from that instituted in the case of Morris. On the afternoon of April 14th, Mr. Kelly reports that the patient had a vomiting spell, his pulse became feeble, respiration imperfect, the skin cold and cyanosed, and death occured in some ten hours. Before examination, the heart was found hypertrophied, the aortic valves slightly calcified, and an aneurismal dilatation commencing immediately above the valves and pouching anteriorly. The capacity of the sac was nearly that of a hen's egg, the wall was very much thinned at one point, but no rupture had occurred. This heart has been beautifully prepared by Dr. Souchon, and may be found in the Museum.

The two cases recorded as dyspepsia were instances of inflammatory affections of some portion of the primæ viæ, in which the diagnosis could not be substantiated. The case which proved fatal, was supposed to be gastric ulcer, but as the cadaver was claimed by relatives who refused to allow an examination, I declined to class it as such upon the tables. The patient was a female, aged about 50, in ward 34. She had been in hospital for two years, was greatly emaciated, with a dry, harsh, sallow skin, constipated bowels, vomiting after eating, deep rachidian pain beneath ensiform cartilage, a little tenderness on pressure, which communicated to the finger a sense of welding or matting together of the visceral surfaces.

The other case classed as dyspepsia occurred in a male, aged about 25, occupying a bed in ward 21. This man suffered from impairment of digestion, associated with aphthous stomatitis. This affection had first appeared while in the Confederate army in 1863, and had gone on without relief until the date of his entrance to the hospital. His appetite was morbidly voracious, and free indulgence was sure to produce severe diarrhœa. His medical adviser brought him to the hospital, hoping that its discipline might exert a salutary control over him in this respect. The treatment directed was nitro-muriatic acid, given with vegetable bitters, chalybeates and careful restrictions upon his diet.

The case of stomatitis materna was an Irish woman, aged 35, in ward 34. She had borne by rapidly succeeding births seven children, the last *accouchment* having occurred in August, 1866, since which date she had suffered from this troublesome malady. The disorder had run the usual course, exhibiting periods of aggravation of the sore mouth, preceded by copious salivary flow, and succeeded by vomiting and diarrhœa; then would follow a few days of more or less complete relief from disease, to be again succeeded by the sequence of symptoms above stated. This affection is, without doubt, connected with some form of deteriorated blood crasis, probably anemia induced by excessive exercise of the reproductive organs, the drains of child-birth upon the circulation and vital energies, and excessive lacteal secretion. The prescription advised for this patient was, R. Ferri sulph., Quiniæ sulph., aa, ℥ss; Extract. nucis vom. gr. xx; Extract. belladonnæ gr. v; Morphiæ Sulph. gr. ij. M. Ft. pil. no. xx. S. One pill thrice daily, at meals. The diet was to be milk, eggs, soups, potatoes, bread, etc. The belladonna was added to the above prescription, because of slight hysterical seizures which complicated the case.

The cases of gastro-enteritis were well marked by clinical events and *post-mortem* signs. One of the patients, a female three months advanced in pregnancy, was admitted after a protracted debauch. The prominent symptoms were vomiting, frequent stools and unappeasable thirst. Abortion ensued and death. The other case was in all probability the sequel of an attack of epidemic cholera, which occurred to the patient previously to his admission.

The term "jaundice" upon the tables, like the term "dyspepsia," is limited to those cases in which the symptom existed without sufficient evidence of the cause to justify me in giving a dogmatic explanation of its pathology. A similar remark is true of the cases of ascites; where its cause was demonstrable, the pathological condition giving rise to the symptom furnished the name. One of the cases, in ward 19, was the subject of considerable comment. The ascites was dependent upon obstruction to hepatic circulation, which was considered due to cirrhosis. In another case both the liver and spleen were very much enlarged, after repeated occurrence of chills and fever.

Four cases of Bright's disease were treated under observation of the class. Of this number two died, and two were discharged *benefited*, I cannot say *cured*. It will be remembered that I hazarded

the statement that the clinical reports of cases of Bright's disease pronounced "cured," were in very many instances untrustworthy, because discharge from treatment was interpreted to mean cure. The diagnosis in all these cases was made to rest upon the results of chemical and microscopical examinations of the urine. In one of the fatal cases the urine was highly albuminous, and contained numerous fibrinous casts; in the other fatal case there was but little albumen, but the microscope revealed fatty granules in forms of grape-like clusters, some oil globules and, after standing a length of time, crystals of oxalates. *Post-mortem* verified the diagnosis predicated upon these observations, showing fibrinous hypertrophy—the kidney enlarged, anemic and filled with exudative material in the former case — and fatty degeneration of both kidney and liver in the latter case. The attendants upon these lectures must avoid confounding this latter patient with those cases diagnosed as "fatty liver." Two of these cases occurred in females who acknowledged to a former free use of wine, beer and toddy. In both these instances the livers were very much enlarged, and they were pronounced fatty deposit. In the other case, a male, there was little or no increase of size in the liver, but it was conjectured that both the liver and kidney were the seats of fatty degeneration. The distinctions in the pathology of these two conditions of disease were discussed and the symptoms compared. In the cases of fatty deposit, the functions of the liver were simply incommoded by pressure, and the resulting jaundice had a lively yellow hue. In the case of fatty degeneration, in which the gland structure itself undergoes change, there was subversion of function, and the dull hue of acholic jaundice obtained. *Post-mortem* was had on one of the cases of fatty deposit, but the case of fatty degeneration was discharged at his own instance. The treatment of Bright's disease was varied according to the stage of progress or urgency of symptoms. Evidences of tendency to local inflammations or increased anasarca were always indications for hydragogue purges; cupping, either dry or wet; or, as in one case, venesection. A drink of bitartrate of potassa ℥i, in water Oj was a very frequent prescription. Mur. tinct. iron, mild opiates and keeping the surface warm were also common features of treatment.

The case of eczema was interesting, because of the striking results of treatment. This consisted of tar soap, used twice daily in washing the skin, which was then dried and carefully dusted with a starch bag filled with the following powder: starch, oxide of zinc aa ℥iij:

gum camphor 3ss. An artificial mineral water of the following composition was given the patient: ℞. Magnesiæ sulph. ℥ij: Acid. sulph. dilut. 3ij: Ferri sulph. 3ss: Syrup cort. aurant. ℥ij: Infus. cort. aurant. ℥x. M. Whenever the exudation was so considerable as to form crusts which would be impervious to the applications, they were removed by bread-and-milk poultices.

The case of phosphorus poisoning is reported at some length in the May No. of this Journal. Tardieu teaches that there are three different methods of action, by which phosphorus may destroy life, viz., first, by its local effects in disorganizing the tissues with which it comes in contact; second, its influence upon the nervous system; third, its effects in destroying the vitality and composition of the blood. It must have been by the last named mode that death was produced in this instance.

Hypodermic medication was practised in the presence of the class, and applied to the treatment of all neuralgic affections, asthma, etc. Its advantages over other forms of administering remedies were considered to be 1st, its rapidity of absorption, and action; 2nd, certainty of absorption and action; 3rd, energy of action and small amount of remedy required to produce a full effect. Its disadvantages are, too great energy of action, amounting sometimes to an unanticipated toxic effect, and the occurrence of sloughing or abscesses around the point of injection. The former result must be avoided by great care bestowed upon the amount of a drug introduced. I hold it unwise to exceed one half the usual dose by mouth. The latter event cannot always be averted, although the danger may be greatly lessened by using the smallest volume of fluid in which solution of the remedy is attainable; by rendering the fluid neutral, and thus destroying its chemical influence upon the tissues; by introducing the nozzle of the syringe well beneath the skin, by emptying it slowly, and aiding the distribution of injection through the areolar tissue by gentle pressure with the finger and by exercising care not to inject tissues already the seat of inflammation. It was taught that it was not necessary to localize the remedy, to secure its good results; but that we obtained moral aid to the influence of this mode of treatment by injecting in the vicinity of the pain, if the condition of the parts favored such a course.

The thermometer was continually brought into use in the wards, as an important aid both as it respects diagnosis and prognosis. My high appreciation of its use and the manner of taking observa-

tions of temperature in disease, and of rendering these observations of the highest attainable value to clinical study, have been so frequently discussed that (even if space could be allowed me) further repetition is scarcely necessary.

Having extended these memoranda to the utmost limit allotted me by the Editors of the Journal, I am obliged to close without having included in my *résumé* many points which might prove interesting to my readers. It will also be apparent to my late pupils, that no little difficulty has been experienced in the matter of condensing remarks, which of necessity must embrace references to such a number and variety of diseases. They may conclude that I have, in some instances, failed to record the points of greatest interest and value to them, but I am sure they will all agree that the substance of my clinical teachings, and the accounts of cases whenever narrated at all, have been faithfully reported.

Art. VI.—CLINICAL MEMORANDA:

By C. J. Bickham, M. D., Assistant to the chair of Surgery, University of Louisiana.

Case I.—Hepatic Abcess.

MR. BOHEN, æt. about 30 years, entered the Charity Hospital, bed 63, ward 5, in October, 1866, with pain in the hepatic region and a fistulous opening through which pus, blood and broken-down tissue were filtering. He was anemic and very much emaciated, had poor appetite, was coughing and expectorating more or less mucopurulent matter, and was suffering with hectic. Auscultation showed an absence of the proper inflation of the right lung low down, in inspiration, and puerile respiration in the left; also sonorous ronchus above, and sibilant below. Percussion showed evident dullness inferiorly, which was not influenced by the law of gravity, showing that the parenchymatous structure of the lung was indurated; and this was supposed to have resulted from chronic inflammation.

His history was that, two years previously he had pain in the re-

gion of the liver, extending more or less over the side, with erratic pains in the right shoulder, and fever; and cough supervened soon afterwards. Fluctuation was detected some eight weeks after the incipiency, a puncture made between, probably, the tenth and eleventh ribs, and matter discharged freely. This opening did not heal, but filtered, as stated, pus, blood and broken-down connective tissue, up to his entrance into the hospital. The patient was, on admission, evidently wearing down rapidly from continual pain and drain and their sequence, the irritable and wasting hectic; and it was resolved to give the abscess a free vent, through which applications could be made, and if possible, a definite diagnosis arrived at. This was done, October 26th, by Prof. Stone, before the class, the cavity emptied, and diagnosed abscess of the liver, with agglutination and implication more or less of the surrounding tissues and organs. The comp. tincture of iodine and water, equal parts, were suggested as an injection into the cavity, with a view to destroy the pyogenic surfaces, and to promote granulation and contraction; and sustaining and soothing treatment, to counteract the drain and hectic. The patient for a time seemed to rally, but his continued suffering, inducing an irritable condition of his nervous system, the effects of the constant drain, and the absence of appetite and assimilation of food, precluded recovery; and he died about six weeks after entering the hospital.

A *post-mortem* showed that the primary disease was not in the liver proper, but that it was an abscess in the walls of the abdomen, intervening between the transversalis muscle on the outside, and the fascia and peritoneum on the inside. This, gradually dissecting and enlarging, occupied a space at death bounded externally by the abdominal muscles, inferiorly by the right kidney, internally by the ascending and a portion of the transverse colon, and superiorly by the diaphragm and concavity of the liver. Anticipative and adhesive inflammation had, to a great extent, by its conservative tendency, preserved intact the surrounding vital organs; but the diaphragm opposite and border of the liver were soft and disintegrating, when examined, though there had been little, if any, escape of the contents of the abcess into the cavity of the pleura. There were adhesions of the reflections of the pleura, and of these to the diaphragm, and considerable chronic inflammation and induration of the inferior portion of the lung; though no softening and abscesses communicating with the bronchial tubes, to account for the purulent expectora-

tion. This resulted from chronic bronchitis, consecutive to the continuity of inflammation, in regular order from the abcess to the liver, diaphragm, peritoneum, pleura, and thence to the structure of the lung and its bronchial mucous membranes. Abscesses are not unfrequent in the abdominal walls, and almost always their site is in the connective cellular tissue between the muscles and the internal fascia and peritoneum.

This case was interesting with regard to diagnosis. It was thought at first by the attending physician in the country, according to the patient, to be pleurisy, until suppuration occured and the abscess opened. It then seemed to be clear that it was abscess of the liver, or very contiguous, as the opening had the proper locality, the peculiarity of the discharge was thought to favor it, and it was accompanied with the usual pains in the right shoulder, etc. The *post-mortem* showed that the liver was involved, though not the primary focus of the abscess.

Taking then into consideration the character of the discharge, especially towards the latter part of life, containing apparently broken-down hepatic structure with the cellular *débris*, together with the locality and the chain of nervous distribution and sympathy, we can rationally account, not only for the pulmonary trouble, but the mistake in exactly locating the disease, the parts being so contiguous and sympathetic.

Case II. — Fracture of Tibia and Fibula.

James S., about middle-aged, in good general condition, entered the hospital, bed 116, ward 8, Nov. 18th, 1866, with simple fracture of fibula, left leg, and comminuted fracture of tibia, same leg, a little below the centre. The mobility was as great, almost, as in an ordinary joint, and evidently the limb had been moved a great deal out of its natural position, before entering the hospital. The integument was tense and discolored from hæmorrhage and extravasation, and tenuous from attrition of the broken bones against it, though the skin at no place was broken. The limb was put in an easy position, a little above horizontal, and water dressings were uniformly applied.

On the second day Dr. Stone, in passing, observed a distinct sense of doughy fluctuation, and selecting a spot a little way from any of the fractures, made an incision sufficient to press out quite a large quantity of half coagulated blood, which was pressing firmly on the

surrounding parts. This opening was carefully and immediately closed with adhesive plaster, without the admission of air, and soon healed by first intention. The residue of blood was soon absorbed, aided by wholesome pressure; and by judicious extension and position the limb improved regularly, without suppuration, and made a good recovery. The point of interest in this case was the propriety of making a clean incision in the healthy skin, some distance from the fractured ends, getting rid of this great mass of inspissated blood (which, under the circumstances, would have suppurated, converting the case into one of compound, comminuted fracture), and dressing in such a manner as to prevent afterwards the ingress of air. Had the incision been made opposite the fractured ends, where the integument was very much contused and engorged, suppuration and external opening would have been the result; and had the opening not been made at all, the great quantity of thickened blood would, with almost certainty, have produced suppuration — admitting it would not immediately, its pressure would have prevented the reparative process. It could not have been absorbed, and the inevitable result would reasonably have been suppuration; conversion into a compound, comminuted fracture; and, with the great exent of mischief present, probable loss of limb, or of life.

CASE III.—UNUNITED FRACTURE OF TIBIA, WITH CARDIAC DERANGEMENT.

Frank ——, æt. about 30 years, entered the hospital, bed 117, ward 8, Nov., 1866, for simple fracture of the right tibia, by being jammed between a boat's lower deck and the bank. The fibula was intact, it being a transverse fracture about midway, and there was no occasion for mechanical apparatus or other means, except to keep the limb horizontal and quiet and apply water dressings. It was observed, however, at the usual time for union to take place, that there was none. His general condition appeared good, but, casting about to find why union, under the circumstances, did not take place, it was observed that he had a double bellows murmur at the heart, quite audible and distinct, although there was none of that peculiar waxy, anemic, puffy appearance, that there generally is in the physiognomy of those suffering obstruction to the circulation through the heart. Nor was there any perceptible indication of deranged secretion and excretion, always present, more or less, in organic cardiac affections; yet there was a very distinct purring prolongation of the first sound at the apex, indicating mitral regurgitation, and one equally as dis-

tinct accompanying the first sound at the base, and transmitted along the great arterial trunk to its bifurcation in the lumbar region, indicating, according to our understanding of auscultation, in the absence of anemia, obstruction to the exit of the blood from the left ventricle. Prof. Stone, Dr. W. C. Nichols and many others heard and recognized the sounds distinctly. In fact, it was a typical case of mitral regurgitation and aortic obstruction, according to the best advice on the subject; yet the patient was not anemic and had no œdema of the lower extremities; his appetite, digestion and assimilation appeared good; secretion and excretion seemed normal; and in every way, as far as we could discern, the patient was well, except that, under the most favorable circumstances apparently, the bone would not unite. He was required to keep very still in bed, and besides special regard to nutrition and his general welfare, at the suggestion of Dr. Stone, a blister was applied over the fracture, and the bone slowly united.

Last April the patient returned temporarily to the hospital, stating that he had hurt the old fracture by falling, but there seemed to be very good union, though his general health was not so good. In this case, what influence had the deranged circulation over nerve force and nutritive action in the part in preventing union? It is true the circulation did not seem, from the general signs and symptoms, to be as much deranged as the auscultatory signs indicated; yet there was undoubtedly organic disease of the heart, with more or less regurgitation through the left auriculo-ventricular valve (to say nothing of the aortic obstruction which would have increased the regurgitation), lessening the onward current of the blood, thereby enfeebling capillary and nutritive action; and it is quite reasonable to suppose that, in this case, union was tardy from this cause.

As a general rule, the amount of regurgitation and obstruction is measured pretty well by the character and distinctness of the heart sounds, but not always, as this appeared to be an exception. The application of blisters, rubbing the ends of the bones together, setons and various other means used in the absence of union, all have for their object a flux of blood to the part, which is necessary to improved vital action and adhesive inflammation; and it was upon this principle that the blister acted in this case to produce union. The capillary action, and perhaps nerve energy, was enfeebled by organic cardiac trouble; the excitement of the blister aroused sensation, and produced a determination of blood to the part; and in this way tone

and invigoration were imparted, nutrition improved, and union resulted. Upon a similar prineiple, in a ease of non-union in a patient having intermittent, we should break the paroxysm, advise change of air probably, and nourish generously the system; and through the general systemic improvement produce more wholesome local nutritive aetion, resulting in union. In other words, we should seek to remove any viee of system, and in this way best insure normal local action.

CASE IV.—POPLITEAL ANEURISM.

George H. S., æt. 33 years, entered the hospital, bed 89, ward 6, Feb. 4th, 1867, suffering from popliteal aneurism of left leg, just above the bifureation into the tibials. He had not observed any swelling there, or felt ineonvenience longer than a week before entering. He was inelined to attribute it to a strain from lifting heavily. Dr. Stone, at his usual visit, suggested the "taxis," or digital eompression, which, by the voluntary kindness of the very attentive and respectful medical elass of 1866–7, was immediately put in force. After the usual time had elapsed, whieh is suffieient, ordinarily, in these cases to produee eoagulation, viz., 24 or 36 hours, the pulsation in the tumor still eontinuing strongly, the patient not having slept, and his general health not being good, as shown by deranged seerections, sallowness of skin, and a kind of erysipelatous inflammation resulting from the digital pressure, it was resolved to remove the pressure, improve his general health, and ligate the artery on the proximal side. This was done by Dr. Stone in the amphitheatre of the hospital, before the class. The patient did well, and there was no further trouble, exeept the same low grade of inflammation, which ensued from the pressure, disturbed the wound where the artery was ligated. This soon subsided, however, and the result was entirely satisfactory,

Aneurisms are not uneommon in the great arterial trunk and its larger branehes, and are always of much interest to the profession; and while upon this subjeet, in view of compression in this ease, it may be well to observe the effieaey of eompression in a eomparative sense, in differently formed aneurisms, and in their different stages of progress. This case, as it oeeurs to me, notwithstanding his general health was not very good, ought to have been eured by eompression, aeeording to the aeeounts of eompression, as generally given heretofore. The reason of the failure, to my mind, was not that the pressure was at fault so partieularly, but that its effieacy depends

very much upon the shape and kind of aneurism. This seemed to be a true aneurism; though, if it originated as the patient thought, from over-straining, it was undoubtedly of traumatic origin, one or more of the coats having given way. However this may be, it was quite uniform, and appeared to have all the coats intact. It was a regular bulging, or enlargement of the artery at the specified point, was small comparatively, with a very strong pulsation; and the strength of the pulsation in this case, as in all other similarly formed aneurisms, resulted from an absence of attrition in the tumor and the direct impulse of the heart's action. The inside of the sac, besides being small, was probably smooth and projecting very little comparatively beyond the natural caliber of the vessel; hence there were no large pouches at right angles to the vessel. There was no roughness by disintegration, ulceration or dissection of the tunics, all of which are favorable to attrition and coagulation. It is almost impossible so to press an artery as to prevent occasionally, to some extent, the force of the heart's action and current through; and indeed it is necessary for some blood to get through the main artery, to furnish the material for coagulation, unless the collateral circulation is sufficient. When the tumor is large, having pouches more or less at right angles with the vessel, and uneven surfaces from atheromatous or ossific degeneration, these currents, whether direct or collateral, will not wash away the coagulum; but it will continue to form layer after layer, because it becomes a *point d'appui*, and much of the force of the heart's action is lessened by this attrition and spreading of the current over a larger space. On account of this friction, the impulse, the uniform upheaving of an irregular aneurismal tumor and the thrill are much greater, though the physical force of the heart is less, than they are in a recent, true or symmetrical one, when the heart's action may be greater; and this is why we so often have simulated aneurisms at the bifurcation of the abdominal aorta in dyspeptic, irritable and imaginative subjects. In their cases, if the aorta did not bifurcate, but continued straight on in one continuous course of the same caliber, we should have no upheaving of the abdomen, synchronous with the heart's action (which results from friction), frightening almost to death the poor patient and sometimes misleading the attendant, who mistakes physcial causes in an irritable subject for pathological anatomy. This as it appears to me, is the true philosophy, upon mechanical principles, of the production of the abdominal pulsation and others, in the abscence of aneurism; and the rea-

sons why aneurisms of certain formations and stages are more easily cured by pressure than others.

CASE V.—STRICTURE OF THE URETHRA.

Peter D., æt. 57 years, entered the hospital, bed 69, ward 5, April, 1866, suffering from permanent stricture of the urethra, of thirty years standing; or rather dating from an attack of gonorrhœa, contracted thirty years previous. He had been treated during the last ten or fifteen years more or less, but irregularly, by dilatation, but contraction recurred as is the rule in such cases, unless the dilatation is thorough and kept up judiciously for some time afterwards. When he entered, he was pressing the urine through by drops, and occasionally by a thread-like, forced or spiral stream. His perineum was full of fistulous openings, his general health very much reduced, and his system irritable. By attending, however, to his general health and working patiently with instruments, Dr. Stone, Jr., who had charge of him in the summer of 1866, succeeded in passing instruments into his bladder, and relieved him of his immediate distress. Gradual dilatation was persevered in, until a No. 6 or 7 bougie could be passed without much difficulty, and the patient's local and general condition was very much improved; when he suddenly became more irritable, and at every succeeding attempt to introduce an instument, which was frequently unsuccessful, he would have a nervous rigor, followed by copious perspiration. This would pretermit the use of the instrument for several days, and the strictured part, being cartilaginous—scirrhous almost—as to hardness, the tissues, completely changed in structure, would readily contract again and leave him at the next attempt where he was before. At every renewed attempt to void the urine, more or less would pass through the ulcerated points just posterior to the main stricture in the membranous portion, infiltrate again the tissues of the perineum, and acting as a source of irritation and flux, engorgement and contraction would recur, and thus do away with the benefit of former insertions.

There is a persistent tendency, in some of these confirmed organic strictures, to close after treatment by dilatation, and the remedy seems to be, in aggravated cases, by section.. The great mass, no doubt, of organic strictures are most judiciously treated by gradual dilatation with metallic instruments, but there are exceptional cases that appear to require cutting. The tissues are so changed in structure that they cannot be dilated permanently, and

the only chance seems to be to cut through them, let the parts disgorge by free suppuration, and seize this opportunity to regain the original caliber, which may be maintained by the occasional introduction of instruments. The cause of stricture of the urethra, like that of the œsophagus and other outlets of the body, is some irritation or violence, such as gonorrhœal virus, chemical irritants, scalding applications, force, etc. The pathological formation is, that any of these produces irritation and pain; then there is a flux of blood, which would seem to be essential to repair, producing engorgement, and in some instances stasis of the circulation. As a consequence of this repletion, there is extravasation of a part of the serum, fibrine, and perhaps salts, into the cellular structure; and if there is vitality enough, this organizes, producing plastic lymph. If there is not sufficient vitality for this, usually suppuration occurs sooner or later, indicating a croupous or aplastic kind of exudation. This lymph is a newly organized and adventitious tissue, occupying or usurping interstitial space, and encroaching upon the soft tissues or hollow organs, whose resistance is small. The calibre of the canal is contracted, and hence we have stricture. The agencies in the production of this condition may be reduced to mechanical and vital forces upon the sensitive organism, and the means to relieve the morbid condition are the same. We are called upon to use mechanical manipulation and gentle force to remove the obstruction, and knowing the laws of nature, and avoiding violence (which would produce a reflux to the part and mischief), by the judicious introduction and pressure of instruments on the walls of the strictured part, we stimulate to a more normal action the capillaries and absorbents. Upon the simple principle of the application of a bandage to a swollen and sore limb, we reduce the engorgement and relieve the morbid condition, thus calling to our aid the vital forces, through the instrumentality of mechanical means. Spasmodic strictures may be independent of the above mentioned causes, though they are sometimes connected. They are rare, and best treated by sedatives and anodynes. The case of Peter is a fair specimen of an aggravated case of the rise, progress and result of an organic stricture, and, as we think, one of the few that would be benefited by section, though his general condition would scarcely have permitted it before with safety. The looseness of the tissues of the perineum and urethra, in a state of health, peculiarly fits them for receiving, under inflammation, great extravasation; and this, when organized, usurps space. The part

becomes hypertrophied, not alone from the presence and organization of lymph, but this lymph, being adventitious and vital, requires nutrition to sustain it, and there are new vessels sent to it by a vital process, the effect of which is still further to enlarge and thicken, and encroach upon the calibre of the urethra. Hence it is often the case that, if instruments are successfully introduced, the resiliency of this new cartilaginous formation and changed original structure is such, that the urethra is almost immediately obliterated again, for practical purposes. It is in this condition, and for the above reasons, that section appears indispensable in some cases.

CASE VI.—CONSTITUTIONAL SYPHILIS.

Mr. Brown, æt. about 30 years, entered the hospital, bed 82, ward 6, in April, 1866, suffering from the constitutional effects of syphilis. He contracted chancre in May, 1859, had no suppurating buboes following, but had swollen lymphatic ganglia. He had sore throat four months afterwards, and a scaly eruption on the surface. During 1860 he had pains in the bones, and a "fit," supposed to be of an epileptic character, preceded by epileptic dizziness and followed by more or less hemiplegia, the right side being affected. Under treatment he improved, and, patriotism and the will overpowering physical pain, he was a good Confederate soldier during most of the war, and entered the hospital, as stated above. Soon afterwards an eruption on his surface showed an intercurrent attack of small-pox, and he was sent to another institution appropriated for such diseases. After suffering severely, he reëntered the Charity, to be treated for the ravages of syphilis. The poor fellow by this time was much reduced, and far advanced into what is termed the tertiary syphilitic stage. He had extensive nodes, chiefly confined to the upper extremities (right clavicle and head), and several fistulous openings on the frontal and parietal bones, resulting from the inflammation of the pericranium and bones; also severe nocturnal pains and poor appetite. The vital powers were so reduced, and as a consequence the functions of the various organs, that he could not bear the ordinary remedies used for his condition or stage of the malady. His stomach would not tolerate them, and the only thing to be done was to nourish and sustain as well as possible with appropriate tonics and food. Thus it has continued up to the present writing, when, by gradual disintegration, caries and necrosis, the entire thickness of both tables has in one place disappeared in the form of impalpable powder, and

floated away with the pus. There seemed not to be vital force enough to form a line of demarcation and cast off the whole affected part at once, as is usually the case where the powers of life are feeble; but the bone dissolved, as it were, and came away in the manner specified. It was often examined, to see if it was loosened; but not so, though necrosed. This case presents some interest, not because he was cured, we are sorry to say, but because of the pathological sequences and symptoms. He had been in good health before this disease was contracted, and the only rational explanation of his dizziness, fit and paralysis is, that he had internal syphilitic periostitis, and probably ostitis, producing thickening and pressure on the brain; hence the pain, dizziness, epilepsy and paralysis. Why he did not have other fits probably is, that, from a continuation of the internal inflammation to the sutures, thence by continuity of the membrane intervening between the edges of the sutures to the exterior pericranium, and the lighting up there of inflammation, and this producing ulceration and a vent externally, diversion and revulsion were effected, and in this way the internal mischief and convulsions ceased; or, in other words, the external drain and counterirritation were sufficient to relieve the internal pressure.

This case does not so much illustrate the therapeutic effects of medicines, as the chain of pathological effects and diagnosis. Had this patient had the stamina necessary, no doubt some mercurial judiciously administered in diminutive doses, although in the tertiary form, and followed by the iodide of potassium and tonics, would have done well; but unfortunately his vital forces were too much reduced, and the functions of the stomach and other organs were too ill performed to justify any means but supporting.

We had frequent cases in the wards during the winter in the tertiary form, whose systems were in a better condition than Brown's, very much improved by the careful use of mercury in some form, followed by iodide of potassium, chlorate of potassa or other tonic alteratives, in accordance with the long and impressive teachings of Dr. Stone; but our space is too limited to enter into their *minutiæ*. As a general rule, in the observance of syphilitic cases, where there was an indurated chancre, there followed indurated, non-suppurating buboes or ganglia, and other constitutional symptoms, in cases that had not been treated; but, as a general thing, when the sore was soft or simple, with no Hunterian tendency, they had suppurating ganglia, and did not have constitutional symptoms. These are the general rules,

but there appears to be some exceptions. The principles of the treatment of syphilis have not much, if at all, changed since the time of Hunter. Notwithstanding the recent valuable experiments and teachings of Ricord; whatever may be the truth with regard to the unity and duality, or whether there are a dozen poisons; and how ever much Mr. Bumstead and others may theorize upon the subject, and run parallels between what they term the chancroid and chancre; the principles of treatment have not changed, and it is still as judicious to act upon Hunter's theories and principles of treatment, with regard to the use of mercury, as ever before. According to our understanding of the therapeutic action of the different preparations of mercury, they are indicated, *especially* whenever there is induration resulting from inflammation, whether it is produced by a specific poison or not; and when there is no induration in venereal sores, we treat them locally *alone*, without looking after the general welfare of the system. As yet there is no satisfactory demonstration that there is more than one syphilitic poison, which presents different phases, according to the condition of system, its source, and the age of the virus; modified probably by vital and chemical agencies.

CASE VII.—STONE IN THE BLADDER.

John Cahill, æt. 8 years, a native of New Orleans, entered the female pay ward, 34½, with his mother, Nov. 13th, 1866, suffering from all the ordinary symptoms of stone in the bladder; in fact, stone had been detected. His history was, that he had complained about seven months, and he entered the hospital for the purpose of an operation. This was done in the amphitheatre of the hospital, before the class, the day after his admission, by Prof. Richardson, by the ordinary lateral method. His general health seemed good, but he was a little irritable from pain and broken rest. No previous preparation appeared to be necessary, but to evacuate the bowels by injection, avoid food the morning of the operation to prevent nausea from the influence of chloroform, and have the urine retained for several hours to distend the bladder. The irritability was very decidedly shown, while going under the influence of chloroform, which seemed not to agree very well; however, its effects soon passed off. The operation was performed with entire satisfaction, the calculus weighing about five drachms. There was no undue bleeding, and he was put comfortably to bed. A little oozing of blood

occurred during the evening and night after the operation, but not to any great extent, and he seemed in every way to be doing well, with the exception of irritability, until the eighth day, when he had quite a hæmorrhage from the wound. Some blood issued also from the urethra, showing regurgitation. He became quite blanched in consequence, and the little fellow was very irritable and apprehensive, saying he was going to die. This of course only favored a recurrence of hæmorrhage. The bladder, which contained a considerable quantity of coagulum, was washed out by injecting tepid water through the wound; a canula was inserted into it through the wound, to conduct out the urine and prevent its acridity from irritating; and lint inserted all around, and to some depth, with a probe, as far as the bleeding point — so we thought; but in 36 hours hæmorrhage occurred again.

Dr. Richardson now saw him, washed out the bladder well, and inserted through the wound the ordinary lithotomy canula with shoulders, wrapped with lint wet with a saturated solution of ferric alum. This was done in such a manner as to have the lint extend the entire depth of the cut surfaces and fill the calibre, so as to have judicious pressure on the mouths of the bleeding vessels. In just 36 hours from this second bleeding, the hæmorrhage occurred again more profusely; the little patient being very white and faint. The bladder was washed as before, through the wound, and the same mode of dressing applied as the second time, except that more lint was wrapped around the canula, so as to press the whole cut surfaces a little more firmly. The parts were soft and could bear considerable pressure without interfering with the reparative process, being different in this respect from the wounds of vessels, where bones are subcutaneous. In the latter cases, care is necessary not to have too great pressure, and thereby prevent the healing process. After this third dressing, the little patient's nervous system being soothed by anodynes, and the muriated tincture of iron continued, which he had been taking several days, the bleeding did not recur, and he did well. From this time he improved rapidly, the wound soon closed, the urine came through its natural outlet, and he left the hospital in less than three weeks after admission.

There being no undue bleeding at the time of the operation, and the little patient doing so well apparently, it was not expected that hemorrhage would occur, and especially so long after the operation This makes the case somewhat peculiar, and of more than ordinary

interest; also its recurrence just 36 hours apart each time is unusual. Generally with secondary hemorrhage, from some unknown law or influence, its recurrences are about twenty-four hours apart; but this case dated its periods of activity just thirty-six hours apart.

CASE VIII. — STONE IN THE BLADDER.

In this connection, it may not be out of place to mention a case of stone under my care in the summer of 1866, in Shreveport. Mr. McDade, about middle aged, visited me from Texas, Davis county, very much reduced in general health and suffering great pain in the region of the bladder, with a frequent desire to void the urine, accompanied with great straining and bearing down. The urine was muco-purulent, and frequently bloody. He had been a Confederate soldier, and had recieved a shot from the pistol of a Federal cavalryman, in July, 1864, in the right gluteal region, which was still in him somewhere. He had also suffered long and severely from obstinate intermittent. He had not been examined with instruments, although his chief local trouble seemed in or about the bladder.

On inserting a sound, which was done with some difficulty, on account of irritability and contraction in the membranous portion, and passing it on through the prostatic portion, something was felt which elicited a metallic click, and, as I thought, just at the beginning of the urethra, or perhaps in the prostate. In his condition of general health and great local suffering, although in bad condition for an operation, there was no rational course to pursue but to remove the foreign body at once, which was aggravating the effects of the malarious poison, and thereby accomplish the most possible in the shortest space of time. Accordingly, by the assistance and judicious advice of Drs. Williams, Gray, Davis and Clay, of Shreveport, his system was prepared, and the lateral incision made in the ordinary manner for lithotomy. To my surprise, when the finger was inserted, there was a calculus of very large size, but no detached ball could be felt. The opening into the prostate, which was moderately large, was dilated very considerably with the finger, and an attempt was made to extract the stone; but, after persisting some little time, it failed. The opposite side of the prostate was then notched, and after a good deal of difficulty, the stone extracted. It weighed three ounces, having a small conical pistol ball in the center, and was composed chiefly of oxalate of lime. The depressing effects of the chloroform and the shock of the operation, in his enfeebled condition, were very

great, and it was doubtful whether he would react; but he finally did, and went on gradually improving. There was no untoward event or complication, except the difficulty of extracting the stone; and this was owing to its size and weight, and from having formed a kind of *cul de sac* and being partially encysted just in the base of the bladder, close behind the prostate.

The wound was left alone, without any canula, and simply cold-water dressing applied. His convalescence was somewhat retarded by several recurrences of the chills, but they subsided under treatment. At the expiration of about a month he returned home, almost entirely relieved, with the wound nearly closed. His case presents some points of interest, on account of the nucleus, and its history from the reception of the shot. Mr. McDade had been a cavalryman, and was in his saddle for several hours before the fight occurred in which he was wounded, during which time he had no remembrance of emptying his bladder; so it must have been partially distended with urine, when he received the shot. After getting off his horse, his first desire was to pass water, but he could not, and did not, he says, for thirty-six hours afterwards. He was pained very much from the passage of the ball and the distention of the bladder, but had no medical assistance. When he succeeded in passing urine, thirty-six hours afterwards, he passed quite a quantity of blood, and this continued regularly for two weeks, and occasionally up to the time of the operation. He was very much constipated at the time of the accident, and did not succeed in getting his bowels moved for four days after the injury. Up to this time his abdomen was somewhat swollen and sore, but after disgorging the bowels it subsided, as did the soreness and pain. Hence, from the history, I would infer that there was no extravasation of urine or blood into the cavity or peritonitis. From the entrance of the ball into the right gluteal region and its apparent course, it probably passed through the greater sacro-ischiatic notch; perforating the bladder, and, being spent, it dropped in; and from the range, being conical and not very large, it made a valular opening in the bladder, upon which, as distension occurred, pressure was made in such a manner as to close the opening. Upon the same principle, from the anatomical formation of the spermatic canal, the uniform internal pressure of the abdominal viscera, in a well made subject, closes it and tends to prevent escape through it, rather than press a portion of the contents out.

The patient commenced passing freely from the bladder muco-purulent matter in two weeks after the injury; and this, taken in connection with hæmorrhage immediately following, is conclusive evidence that, if the ball was not originally in the cavity of the bladder, its track communicated with it. The drain to the system from this cause was very great. He observed no sudden stoppage of the jet of urine while passing it, until about a year after the injury, but suffered considerable pain accompanied with retraction of the testicles and pain in the glans penis. The operation was performed just two years after the accident, which gives some clew as to the rapidity with which such formations occur, under some circumstances.

The only mistake made in the diagnosis and treatment, was in not forming a correct idea as to the size of the foreign body prior to operating, which was much larger than was suspected. This, however, might be accounted for from the fact that, as said before, the stone, from its weight, having the lead in the centre, was bagged down and partially encysted just behind the prostate. It is now in the museum (Pathological Department) of the University of Louisiana, with a concise history attached.

ART. VII.—CLINICAL REPORT OF EYE AND EAR CASES: By DR. BOLLING A. POPE, in charge of the Eye and Ear Clinic of the University of Louisiana.

CASE I.—DISPLACEMENT OF THE PUPIL.

B. BROOKS, aged 50 years, has generally been healthy until the last five years, during which time he has had frequent attacks of intermittent fever. About five years since he had a severe attack of inflammation of the eyes, probably muco-purulent conjunctivitis, complicated by ulcerations of both corneæ. At present the right cornea is perfectly opaque, except a small portion of the lower and inner border. The opacity is evidently the result of extensive sloughing, with perforation of the cornea; the greater part of the iris being engaged in the cicatrix. The small portion of the iri

in view is slate-colored, and much altered from that of the left eye, which is healthy. The sight in this eye is reduced to the simple perception of light.

The left eye was operated on for internal pterygium, about a year since, with only partial success. Something more than three-fourths of the cornea is opaque, but the degree of the opacity of different parts is very different, varying from a slight nebulous opacity to a dense one, as on the site of the apex of the operated pterygium. The sight is very imperfect, there being no perfectly transparent cornea immediately in front of the pupil. Dilatation of the pupil does not improve the sight, which, however, is considerably improved by stenopaic spectacles. With the naked eye, he reads No. 17, and with stenopaic spectacles reads No. 13 of Yaeger's test print. The only perfectly transparent portion of the cornea was at the middle part of its upper fourth. In this case it was of the last importance to use great care in the examination; since, without the most careful illumination, many parts of the cornea appeared perfectly transparent, which were in reality slightly opaque.

The choice of operations was between iridectomia and displacement of the pupil. Since the disturbing influences of the central opacities would still be greatly felt, in case a portion of the iris should be removed, and the lower border of the pupil left to occupy its original place, I determined to perform Critchett's operation for displacement of the pupil (iridesis), modified as suggested by Wecker. In Critchett's operation an incision is made at the margin of the cornea, the iris is seized with ordinary iridectomia forceps, drawn through the opening, and a ligature applied to it close to the eyeball. This is an operation requiring the greatest skill in the assistants, the tying properly being probably the most difficult step. Wecker practices a modification of this operation, whereby the necessity for the ligature is avoided, and thus one of the most difficult steps is omitted. For this purpose he uses a narrow lance-shaped knife and an iris forceps more delicate than ordinary iridectomia forceps. The opening made in the cornea is very small, and the iris, being drawn into it, is retained in position.

On the twenty-fourth of March, 1867, I operated on the left eye, upwards and slightly inwards. The operation succeeded well and was followed by very little irritation, still I was not entirely satisfied with the result, and determined to perform a supplementary operation, whereby the pupil should be drawn still more fully behind the

transparent portion of the cornea. The operation was repeated on the tenth of April. The opening was made sufficiently outwards from the first, in order to get a good hold on the iris. The opening was made well back into the sclerotica, consequently there was but a slight external show of iris after the operation. After the second operation, there was some congestion of the iris, which subsided without treatment. Subsequently to the first operation, the patient was kept in bed, with the eyes closed by adhesive plaster for a week. After the second, he was kept in bed and ordered to keep his eyes closed.

On the fourth of May, the case was dismissed from treatment, the results of the operation having been carefully tested. The patient could read slowly No. 5 of Yaeger's test print (when wearing No. 12 convex glasses), at six inches. He reads about as well with stenopaic spectacles, without the use of convex glasses. The only objection to the operation is, that it was performed at the upper margin of the cornea, which for various reasons, anatomical and optical, is objectionable. It was, however, a necessity, and the result is quite good. It is to be remarked that, at the time that the patient returned to his home, he was still improving, and there is no reason to doubt that the result will be still better than at the time he left treatment.

CASE II. — PARALYSIS AFFECTING BRANCHES OF THE THIRD AND FIFTH PAIRS OF NERVES.

J. R. aged 40 years. When 14 years of age, disease commenced in upper third of right tibia. Several pieces of bone have at various times been removed. The disease of the tibia has been well for about three years. Six years since, while on a voyage from America to Italy, he noticed that his right pupil became dilated. There were no head symptoms, nor other symptoms of disease in the eyes, which attracted his attention at the time. Upon arriving at Milan, he was treated for his leg, but nothing was done for his eye. Three years and a half ago, while suffering from a severe attack of inflammation in his leg, he commenced to see objects double. This symptom lasted for about a month, and then disappeared without treatment, except that directed to the cure of his leg. Two years since he had inflammation of the left half of lower jaw, about the middle of the body of the bone, which has for some time been almost entirely well. Three months since he commenced to have dullness of sensation in the skin of the right supra-orbital region, of the upper lid, of the upper

half of the lower lid, and of the side of the nose. Above the loss of sensibility extends to the median line, and upwards to the upper margin of the right frontal bone. Upon pricking the portion of skin above mentioned with a needle, I found that the anæsthesia was complete. The palpebral conjunctiva was found to be insensible also to the pricking of the needle. The ocular conjunctiva was still sensitive. At times there is a feeling as though musquitoes were biting the affected skin, or insects crawling over it. There is never exactly pain, but often a very uncomfortable feeling in the affected surface. Accompanying the loss of sensibility in the skin is photophobia and irritability of the eyes. Three months ago strong light was rather unpleasant to the patient, but it has become for the last three months very disagreeable. The veins of the supra-orbital region of the affected side are turgid, and there is unusual visible pulsation in the smaller arterial branches. The right pupil is dilated; the left rather contracted, and differs but little in size under various conditions, and then with great sluggishness. The dilatation of the right pupil is caused simply by paralysis of the circular muscular fibres of the iris. The pupil has never been observed to vary in size since it first became dilated. Without convex glasses he reads No. 1 of Yaeger's test print with right eye from eleven (near point) to eighteen inches (far point). With left eye he read No. 1 one inch nearer to the eye. He reads with much more comfort with a weak convex glass.

This patient came under my treatment on the seventh of March, 1867, and remained till the 13th of the following April. The treatment and results are as follows: Iodide of potassium was given internally in five grain doses, combined with the thirtieth of a grain of the bichloride of mercury. Stimulating frictions were ordered to be applied over the supra-orbital region, and one three-hundreth of a grain of the extract of calabar bean was introduced daily between the lids of the right eye. On the 13th of April, the paralysis of sensation had almost entirely disappeared, and there was possibly a slight diminution in the dilatation of the pupil, which was *independent* of the influence of the extract of calabar bean. The irritability of the eyes and their sensibility, when exposed to a strong light, had entirely disappeared, and the general condition of the patient had greatly improved. Treatment was ordered to be continued for two months. Upon first using the ext. calabar, the effect was, in twelve minutes, to contract the pupil considerably, but not quite to the size

of that of the left eye. In a half hour the pupil had become slightly smaller than the other. After using the treatment as stated above for three weeks, I could observe a slight *contraction* of the affected pupil, when the patient regarded an object which was steadily approached towards him, a fact which did not exist at the beginning of the treatment. The perfect preservation of the function of the sphincter pupillæ, after so long a suspension (total) of function, is of great interest in a physiological point of view.

It is highly probable that the disease was located at the base of the brain, and primarily affected the dura mater, being of the same nature as that affecting the tibia and lower maxilla.

CASE III.— PURULENT IRITIS, OCCURING IN A CASE OF GUN-SHOT WOUND OF THE ARM, WITH PYÆMIC SYMPTOMS.

S., aged 35 years and of good constitution, received a pistol shot on the 25th September, 1865, the ball entering the anterior aspect of the right arm above the elbow, and being flattened against the bone. There was secondary hæmorrhage, for which the brachial artery was said to have been tied. Following the operation he is said to have had an attack of intermittent fever, and also one of pneumonia of the right lung. Shortly after the right eye became affected, and on the 7th of November, 1865, I was called in consultation with reference to the condition of the eye. The case was given fully into my charge, it having been agreed that the chance of saving the life of the patient was very small, and that the sight of the right eye was already permanently lost.

The patient, when first seen by me, was in a condition of extreme debility. His tongue was coated and the secretion of the buccal surface adhesive; his skin dry and yellow, his stools watery and frequent. His pulse was frequent, weak and irritable. The wound discharged a thin, unhealthy fluid from deep sinuses. The bone was denuded of periosteum to some extent, on the anterior surface of upper portion of the lower third of the humerus. The radial pulse of the wounded arm was normal; the sensibility, however, was imperfect in the forearm. The lids of the right eye were much swollen and œdematous, and were insufficient to cover the protruded eyeball, so that the lower third of the cornea was exposed, together with a mass of chemosed conjunctiva. The chemosis was very considerable, overlapping the margin of the cornea for some distance. The cornea had a dull appearance, and its epithelium

was scaling off at the margin of the chemosed conjunctiva. The pupil was of *about* the *normal diameter*, motionless, and of a grayish-yellow color. The iris was in a state of so-called purulent infiltration. The sight was totally destroyed, and the patient had suffered, and was still suffering, great pain in and around the eye. From the first, as remarked above, there was no hope of preserving the eye, atrophy being inevitable; and consequently the best result to be hoped for, would be to preserve a good stump, upon which an artificial eye might be worn.

Treatment.— I punctured the cornea with the ordinary iridectomia knife at the other side, and removed a considerable quantity of a yellowish-gray substance, which came away in lumps and was quite tenacious; but its volume diminished rapidly upon rolling it with the forceps in the hand. When the anterior chamber was opened, there was no escape of aqueous humor, nor did there seem to be any present. There was a marked stiffness and harshness of the cornea after the evacuation of the aqueous humor, and it yielded but little to pressure. Free incisions were made into the chemosed conjunctiva. The evacuation of the contents of the anterior chamber relieved him *entirely* from pain for two days. The right temple and supra-orbital region were freely painted with tr. iodine, and the secretions removed from the eye by frequent tepid injections. The patient was placed on the use of the pyrophosphate of iron, and also took two grains of the sulphate of quinine three times a day. The wound was injected once a day for a week with tr. iodine, and the most nourishing diet, together with a free use of stimulants, ordered.

The day after the operation on the cornea, I found the wound still open, and evacuated the contents of the anterior chamber again. Three days after the first operation, I punctured the sclerotic behind the attachment of the ciliary body, but evacuated none of the contents of the eyeball. There was a free flow of blood from the chemosed conjunctiva following the operation. At the same time I reopened the corneal wound, which had become plugged, and this time removed a small quantity of a jelly-like substance, which was followed by a tolerably free flow of perfectly liquid vitrous humor. No pain followed the operation until two nights after, and this ceased in a few hours, and did not return.

Nov. 15th, 1865. For the last few days the eye has steadily retreated into the orbit, the swelling of the eyelids has subsided, and there is now some voluntary motion of the eyeball. The chemosis

has rapidly subsided, but the cornea is becoming softened and infiltrated with pus.

Nov. 16th. The eye has almost regained its normal position, and the patient has been able to take a drive, his strength having rapidly increased with the improvement in the condition of his eye and the decided change in the condition of his wound. Fourteen days after the commencement of treatment, he left for his home, the wound having closed and his health greatly improved. The cornea was mostly changed into a yellow mass, soft but tenacious. The case was seen again on the 15th of the following January, and he was then in robust health, neither the arm nor eye giving him any further trouble. The treatment was closed by advising the wearing of an artificial eye, the cornea having sloughed and firm cicatrization having followed.

There is no reason to doubt that this was a case of pyæmia, and that the loss of the eye was to be attributed to that condition. Whether the treatment would have been successful under less favorable circumstances is extremely doubtful. Without the rapid change in the condition of the wound and of the eye, the termination of the case could hardly have been favorable.

CASE IV.— CHRONIC INFLAMMATION OF THE MIDDLE EAR, WITH PERFORATION OF THE MEMBRANA TYMPANI.

G. F., has generally been healthy, but not robust. He has been very much subject to catarrh of the nasal passages, and has been somewhat troubled at times with dyspeptic symptoms. About five months ago he had pain in both ears, commencing in the left Three months since his deafness began to be troublesome, so that he could scarcely hear with his left ear. The hearing of the right ear also became affected subsequently, but never to the same degree About two months since he syringed the left ear, and a plug of wax was brought away, which was followed by relief to the hearing; but he has since had a troublesome ringing in his ears. This only troubles him, however, when it is still.

He placed himself under my care on the 22d of February, 1867, at which date the following facts were noted: There is ringing in both ears, and his voice and other sounds appear muffled to him, when he closes his left ear. In the morning his ears feel stopped, which feeling diminishes or ceases entirely during the day. There is no accumulation of wax in the external auditory canals. The

membranæ tympani are flat. Blood vessels run superficially along the long process of the hammer, and the process is much more plainly seen than normal. There is in both ears some inflammation of the dermoid layer of the inner extremities of both external auditory canals which extends also partially to that layer of the membrana tympani producing some diminution of the clearness of their circumferential portions. Air enters both eustachian tubes, but is felt to enter the left ear most freely. The hearing distances for the tickling of watch are for the right ear $2\frac{1}{2}$, and for the left ear 15 inches.

Treatment.—A couple of leeches were ordered to be placed just below the right ear. Mild counter-irritation behind both ears has been used throughout the treatment, at first with tr. iodine, and afterwards with a blistering fluid. A solution of nitrate of silver, thirty grains to the ounce of distilled water, was well applied to the throat every other day, and was also applied as far up towards the eustachian tubes as possible. The right ear was kept closed with wool. Tonics and the use of the cold sponge-bath were also ordered.

February 24th.—Hears the ticking of watch at four inches. Air enters the eustachian tube, but is not felt to enter so freely as in the left ear. Sounds heard with otoscope abnormal.

March 16th.—Hears the ticking of watch with right ear at five inches.

March 18th.—Is suffering from a severe catarrhal attack. Both his ears feel stopped, and he has lost all that he had gained in the hearing distance, and more. Found today that, in causing air to pass through the right eustachian tube, it passes with a sharp whistling sound through an opening in the membrana tympani. The opening was found to be a little below and in front of the extremity of the long process of the malleus, and when observed while the air was passing, a very small quantity of mucus was driven through the opening by the current. Two leeches applied below each ear.

March 19th.—Better, and hearing distance about the same as when he first came under treatment.

March 27th.—The hearing distance of the right ear has again reached five inches, and the left ear is also better.

March 29th. The opening in the membrana tympani has healed without local treatment. Hearing distance six inches (right ear). Has for some time been using the bichloride of mercury and the iodide of potassium twice a day, in doses containing $\frac{1}{30}$ of a grain of

the first and 2 grains of the second. Apply stick of nitrate of silver over the course of the eustachian tubes.

April 30th. Three days since both ears were syringed out, and a considerable quantity of whitish and yellowish-white flocculent matter was found in the water. It was seen upon examination that the dermoid layer at the inner extremity of the external meatus of each ear was congested, as well as that of the membrana tympani. After syringing, a weak solution of the nitrate of silver was poured into the ears. A couple of leeches were ordered to be applied below each ear. By the thirtieth of April this treatment had been followed by decided benefit to both ears. If the patient was not deceived, there was a singular peculiarity in this case, as regards the variations in the hearing at various distances. When a watch was carried from his right ear, he heard it distinctly till it reached a distance of about 9 inches, then it became doubtful for a few inches whether he could hear it all or not. Suddenly, however, he would say that he could hear it distinctly again, this continuing till the watch reached about 22 inches in distance from the ear. Sometimes, between the distances of 8 and 12 inches, the ticking merely became very faint and then increased in distinctness. I should hardly have regarded the circumstance, had I not had a patient under treatment at the same time, with disease of the membrana tympani, who at least fifty times asserted the same as regards his own hearing, and this without having heard the subject mentioned.

May 5th.— The air enters the eustachian tube of both ears freely, but with a slight puff. There is no evidence of any accumulation of mucus. The hearing of the left ear is normal, that of the right has reached the distance of the outstretched arm, when it is quite still.

May 13th.— The case varies slightly at times, but will soon be in a condition to discharge from treatment. The ringing in the ears continues to some extent.

Remarks.— It was omitted in stating the treatment of the case, that frequently during its course the middle ears were inflated with air passed through the eustachian catheter, and that once, about two weeks since, a gum-elastic eustachian bougie was passed into the eustachian tube about half the length of the tube. The site of the opening in the membrana tympani is marked by a slight opacity of the membrane and seemingly slight external convexity. It is insisted on, in all recent systematic works upon the diseases of the ear, that spontaneous openings in the membrana tympani, as a rule, never

close. In this case there is no doubt as regards the spontaneous perforation and cure. The opening was small, and there was but little mucus in the tympanic cavity, which may account for this exception to the rule. In addition, there was no profound alteration of the structure of the remaining portion of the membrana tympani. Whether the ulceration commenced on the inner or outer surface of the membrana tympani cannot be determined positively, as it was not observed before perforation took place, and neither surface was perfectly healthy. Possibly it may have been one of those cases, described by Toynbee, of ulceration of the fibrous layer, but it is not at all probable.

The case is evidently a very complicated one, and we have to admit disease of the dermoid layer of the membrana tympani, and if the diagnostic method of some authors be followed, of the nerve of the right ear also. No attention has been given to this latter point in the statement of the case, as the nerve was considered to be healthy.

Case V.—Relaxation of the Membrana Tympani.

J. W., aged 65 years, has been troubled all his life with dyspepsia and constipation; otherwise, however, he has been healthy. When about 16 years old, he had a severe attack of pain in one of his ears, but the pain has never returned, and then only lasted for about six hours. Two years since he "took severe cold," accompanied by a sense of stoppage in right ear, and then observed that, when he drew air with some force into the right nostril, he was relieved of the sensation of his ear being "stopped up inside." He thinks that there is something in the posterior nares, which is thus forced out of the way, so that it no longer "closes the ear." When he swallows, the "stoppage" immediately takes place, as also when he makes a somewhat forcible expiration. When he talks much, or in a loud voice, it produces the same result. When the sense of closure exists, there is singing, buzzing and roaring, also a sensation as of the separation of two surfaces, between which there is some adhesive substance. This last symptom is always present in case of "closure," and only then. His own voice has a "rumbling" sound, and is heard "directly into the right ear." These symptoms are not at all observed in the left ear. He frequently avoids conversation, on account of the disagreeable effect of the sound of his own voice. His own voice does not trouble him so much when the external meatus

is closed, in consequence of which he keeps it constantly stopped with wool. The ticking of a watch is heard nowhere in contact with the head. Hears the watch at two inches from the right ear, when the ear feels open; at one, when it feels closed. Hears the watch with left ear only, when in contact with the external ear.

Upon examination, the right membrana tympani was found to be dull and bluish, but not opaque. The bright spot was larger and less brilliant than normal. Upon forcing air into the tympanic cavity, the convexity of the membrana tympani was abnormally increased. Upon introduction of the eustachian catheter, the eustachian tubes were found to be in a normal condition. With the otoscope it was observed that, when air was forced into the tympanic cavity, there was a uniform crackling sound, not so free as when the sounds are normal, in fact quite coarse and dry. Upon causing the patient to swallow or blow through the nose, the same sounds were heard, modified as follows: frequently the dry crackling sound was almost or totally wanting, and the sounds invariably terminated by a sharply defined sound, somewhat like the closure of a valve.

Treatment.— The patient was unable to remain for treatment, but was advised to use counter-irritation behind the ears, and to drop a weak solution of nitrate of silver into the right ear. He was also advised to take a course of tonic and alterative medicine, of which aloes was one of the ingredients.

Remarks.—There was some opacity of the right membrana tympani, which, by observation through a magnifying glass, seemed to be located mostly in the radiate fibrous layer. The patient heard an ordinary tone of voice, when distinct, much better than might have been expected, were the hearing distance for the ticking of a watch to be taken as the standard. His nervous system was much affected, and his hands were very tremulous. This was evidently a case of nervous deafness affecting both ears, and in the right ear complicated by relaxation of the membrana tympani. Writers upon the ear differ in opinion, as to the existence of the disease above described. Unless, however, relaxation of the tympanum be admitted as a distinct disease, there is no known solution to the above group of symptoms.

Art. IX.— CASE OF OPIUM POISONING; TREATMENT BY ATROPINE: By S. S. Herrick, M. D.

As attempts at self-destruction by means of opium have been unusually frequent of late, in New Orleans, and the antidotal effects of belladonna are now exciting considerable attention with the profession, the following case may not be devoid of interest.

I was recently called, about 8 o'clock, P. M., to see a man said to be poisoned with laudanum. Understanding that my neighbor, Dr. Ball, had already seen him, I requested the Doctor to accompany me, and we visited him together. An emetic of mustard had already been ordered, but no operation had followed. The patient was then lying in a state of deep narcotism, having swallowed, it was said, three drachms of laudanum, which he had purchased at the nearest apothecary's about 7 o'clock. We agreed to try the effect of sulphate of zinc, and as the case seemed urgent, I proposed the hypodermic exhibition of atropine. With Dr. Ball's approval, at 8:20 I threw into the cellular tissue of the right shoulder a solution of $\frac{1}{12}$ gr. of atropine. The pupils were then contracted to the diameter of a pin's head, and the respirations were eight to the minute, feeble and of small volume. The pulse was full, rather frequent, and the countenance little darkened.

Calling again at 9:10, I found the pupils dilated to the normal size, the respirations tolerably full and twelve to the minute. No sign of emesis had followed the exhibition of the sulphate of zinc.

At 10 o'clock his condition was the same. At 11, the respirations had increased to fifteen a minute, and it was said that he had shown some slight signs of rousing. Being satisfied that he was out of danger, I then left him for the night.

It is proper to remark that no resort was made to the ordinary means of overcoming narcotism, such as forced motion, flagellation, aspersion of cold water, etc. After the failure of emetics, my sole reliance was on the atropine, and finding its effects so decided and permanent, the exhibition of the remedy was not repeated. None of its peculiar toxic effects was apparent: there was no delirium nor suffusion of countenance, nor were the pupils dilated beyond the normal dimensions.

At 8, A. M., the following day, he was awake, though rather dull and drowsy. He had slept through the night, but not profoundly, and had manifested some nausea.

It cannot, of course, be said that the laudanum would have proved fatal without any interference; for it is not certain that the whole was swallowed, while it was known that he had been drinking freely during the day. It is certain, however, that the aspect of the case was very serious when the antidote was administered, and that within an hour it had greatly improved. The narcotic effect of the opium would have gone on culminating for several hours, but was arrested probably much earlier than the observation showed.

PROGRESS OF MEDICINE.

Operative Surgery—Surgical Pathology.

ART. I.—*Hospital Gangrene:* By J. A. FREMON, M. D.

THE symptoms of gangrene may be divided into those which precede its establishment; those exhibited by the gangrenous part; and those of the system which attend the local changes.

The first symptoms preceding gangrene in every case that has fallen under my observation, have been a marked rigor or chill followed by more or less febrile excitement, accompanied with livid redness in and around the seat of injury. The tongue is sometimes more or less coated, at others clean and healthy, its condition depending in a great measure upon the previous state of the patient's health. The same may be said of the pulse—sometimes it is excited, sometimes feeble, depending entirely upon the state of the constitution, etc. In the course of twenty-four or forty-eight hours after the appearance of the chill, the color of the part changes, becomes mottled, purple or black; decomposition takes place; if there be a fluid in the part affected, there will be more or less tension, but usually the gangrenous part is flaccid and emits a fœtid, cadaverous smell.

The symptoms presented by the system while these local changes are taking place, are those of sinking or collapse, and bear a striking resemblance to those attending excessive hemorrhage. It is not easy to account for these constitutional symptoms. They have been attributed to the sphacelated part acting as a poison. But when sloughing is induced directly by chemical or mechanical means, even to a great extent, it is not attended with the effects in question. They have been also referred to the general exhaustion of power which the system suffers from the intense over-action that precedes the gangrene. But this opinion is irreconcilable with the fact that removal of gangrenous parts alleviates, and generally arrests com-

pletely, the constitutional symptoms. They have, therefore, as the only other explanation, been accounted for by supposing that the gangrenous or dying action extends itself over the entire system. Whatever be the true reason of the constitutional effect, there can be no doubt, I believe, that it bears some direct proportion to the importance of the part affected, and the violence of the action which precedes the destruction of its vitality.

The causes of gangrene, or circumstances which induce inflammation to terminate in this way, may be referred to defective powers of action, excessive irritability, or disposition to act, and excessive irritation, or excitement to act.

In the treatment of thirty-one cases of hospital gangrene, from July 1st, 1864, to November, 1864, I have found no remedy equal to the chloride of zinc, as a local application. It stands unrivalled, being far superior to any of the mineral acids, creasote or oil of turpentine. The cautery I have never tried, nor have I ever seen it applied in gangrene.

In eleven cases treated with applications of the chloride of zinc and warm fomentations of pulv. lini, no constitutional measures were adopted save a generous and nutritious diet, and stimulants. The gangrene was arrested without difficulty in every case and the wound healed kindly. So soon as the gangrene was arrested and healthy granulations set up, all the constitutional disturbances present dependent upon the gangrene disappeared, and convalescence rapidly followed. This was not the case with those cases in which the acids were applied.

The following statement will serve to show the comparative value of the different modes of treatment:

8 cases were treated with local applications of nitric acid and quinine, mur. tinct. ferri, extract. cornus Floridæ, stimulants such as toddy, eggnog, etc., as constitutional measures.

8 cases were treated with local applications of muriatic acid, and constitutional treatment the same as the foregoing.

4 cases were treated with local applications of creasote and oil of turpentine. Constitutional treatment same as before.

11 cases treated with local applications of the chloride of zinc, warm fomentations, etc. No constitutional treatment, save a generous diet and a liberal allowance of eggnog, toddy, wine, etc.

I found in these cases that the mineral acids used had to be applied almost daily for an indefinite length of time, in some cases, before the gangrene was arrested, to say nothing of the loss of tissue, to the parts involved. When the gangrene was arrested, the healthy action was slow in setting up, and the wound healed slowly. The cases treated with the turpentine and creasote continued to spread. These applications did not, in my hands, although vigorously applied, seem to check the onward march of the gangrene, and after a fair trial they were thrown aside, as being of little or no value in this disease.

The chloride of zinc was next applied, and arrested the spread of the gangrene at once. In two cases where the acids failed to arrest the spread of the disease entirely, causing much sufferring and pain by their frequent application, I applied the zinc and had no further trouble with them. The gangrene being at once arrested, convales-

cence soon followed, thus showing conclusively the superiority of the zinc over any of the other remedies used. Indeed in no instance in which I have seen this preparation tried, have I ever seen a failure to arrest hospital gangrene.

As to the use of constitutional remedies, it depends altogether upon the general condition of the patient; if they be indicated, I should most assuredly use them; if they are not indicated, I should not use them. No stated rule can well be laid down for such contingencies. As to the application of the chloride of zinc, it is applied by making a saturated solution, and saturating thoroughly pledgets of lint or charpie with this, and "after cleansing the parts," stuffing them into every part of the wound affected by gangrene. These are suffered to remain for several hours; they are then removed and a warm fomentation of pulv. lini, over which I am in the habit of spreading a small quantity of castor oil, is then applied, and renewed as often as required.

Pressure, to be of any benefit in the arrest of hemorrhage in gangrene, must be made on the sound parts. Ligation should be in the sound or healthy parts as near as convenient to the seat of injury.

I have never met with a case of hospital gangrene requiring amputation; and I am of opinion that such cases are of rare occurrence. I should consider any surgeon, amputating a limb to arrest an ordinary case of hospital gangrene, as culpable in the highest degree.—*Nashville Jour. Med. and Surg.*, Dec., 1866.

ART. II.— *Difficulties in the extraction of Cataract:* By M. FANO.

THE relation of the crystaline lens in the operation for the extraction of cataract, places the surgeon in a most painful and embarassing situation. This condition may be due either to a want of elasticity in the coats of the eye and in the capsule of the lens, in which case the eye is soft, the corneal flap exceedingly flexible, and the compression of the eye is necessary to prevent the lens from forcing out the vitreous humor and driving the lens deeper in the eye; or it may depend on the incomplete division of the capsule, which is liable to be the case in capsulo-lenticular cataract. Let us add, at the same time, that this accident may occur because of adhesions between the pupillary border of the iris and the capsule, or by reason of union between the lens and vitreous body by the interposition of plastic matter.

There are two ways of remedying this evil: by incision of the iris, in order to enlarge the pupil; or by means of the curette. In the first instance there is no danger of injuring the vitreous body, but we increase the wound of the eye, and the operation is accompanied by a slight hemorrhage. In the second instance great skill is necessary in manipulating with the curette, to avoid wounding the vitreous body. Each operation has its advantages, however, and both have been performed successfully. In the choice of the operation

some judgment must be exercised, as to the predisposition to inflammation in the eye to be operated on.— *Jour. de Méd. et de Chir. Prat.*, Dec., 1866.

Art. III.— *Epidemic Phlegmons, Carbuncles, and Boils:* By Prof. Laycock.

A FEW weeks ago I read in your journal a paper communicated to the Metropolitan Association of the Officers of Health by Dr. Letheby, in which an opinion was maintained to the effect that the prevalence of phlegmon and carbuncle of late years was due to the use for food of the flesh of cattle that had died of pleuro-pneumonia. This opinion was attributed to the Registrar-General for Scotland, and (it was alleged) was founded on certain statistics. In November, 1856, I published in the *Edinburgh Medical Journal* an essay "On the Pathology and Treatment of the Contagious Furunculoid," in continuation of a clinical lecture which appeared in the London *Medical Gazette* for March 7, 1851, "On Epidemic Boils." In this essay I give two pages of statistics of the deaths from carbuncle and phlegmon in England and Wales (exclusive of London) during the seven years 1848–54, which had been most kindly supplied to me by Dr. Farr. I presume these are the statistics referred to by Dr. Letheby, although he seems to have got them at secondhand. In my systematic course of lectures I have always called attention to the coincidence of both the epidemic development of boils and the greater mortality from carbuncle and phlegmon, with the commencement of free trade; and I state that, in such facts as those recorded by Dr. Livingstone, there are grounds for the hypothesis that the use of diseased meat is the cause. My object however, in this note, is to point out to our Health Officers another and more indubitable source of the disease than this — viz., imported hair and hides. In the essay referred to above, I remark, "When we consider the active commerce of the United Kingdom in hair and hides with those countries which are the seat of the disease (malignant pustule), it does not seem improbable that the *materies morbi* has been imported. And this surmise acquires the more probability from the facts mentioned as to this point by French writers. M. Trousseau states that in two factories at Paris, where hair from Buenos Ayres is used, twenty persons have died in about ten years from carbuncle, although only six or eight were employed daily. Rayer saw several cases of the disease while attached to the Hôpital St. Antoine, all of which came from the same factory, where hair from Russia was worked up."

Dr. Letheby will see in these facts something more tangible than the hypothesis as to pleuro-pneumonic meat. I by no means affirm that there are no grounds whatever for the hypothesis — rather the contrary; but as yet there are no proofs. It is well known that the diseased meat in question has been eaten experimentally in this country by various persons without manifest results; and an African

traveller has lately informed us that in South Africa, where inoculation is practised extensively as a prophylactic, the flesh of the animals that die under the operation is greedily devoured by the natives without bad effects. These negative facts only go so far, however, as to prove that the individuals eating were not capable of being affected, and this view applies equally to the *animalcula*, or whatever the organisms are, of which Dr. Cobbold had partaken so freely, and which are found in the flesh of cattle. His powers of digestion might be quite equal to their destruction and assimilation, when another's might not. An old medical friend of mine has always been a most energetic anti-contagionist as to cholera, because in the first epidemic he was the Resident Surgeon of a cholera hospital, and when utterly worn out, actually fell asleep on the body of a diseased patient and yet never suffered from the disease. To my mind, however, his exemption was only a proof that his intestinal glands and mucous membrane were in excellent order.

To understand more thoroughly the nature and origin of these destructive inflammations, it is necessary to generalize more. With this view I have endeavored to show in the essay referred to, that there is a group of affections having the same pathological characters and the same generic causes. Thus phlegmon is allied to whitlow, carbuncle to boil, and both the latter to malignant pustule. In all, also, there is a communicable *materies morbi*. The change the tissue affected undergoes, is one of devitalization generically; what it shall be specifically depends upon various factors. One of these must be the then intensity of tendency to devitalization in the tissues generally. Thus what would be only a boil in a healthy person, may be a carbuncle in one affected with diabetes or Bright's disease. Another factor is the kind of tissue affected, thus determining whether the disease shall be phlegmon, whitlow, furuncle, carbuncle, or noma. Another is the nature and source of the *materies morbi*, which vary greatly.—*Med. Times and Gaz.*, March 2, 1867.

ART. IV.— *Foreign Bodies in the Air Passages:* By M. H. SHAW, M. D.

INASMUCH as the removal of obstructions from the nasal passages of children by the usual mode, as described in our books, is many times attended with perplexing difficulty and chagrin to the surgeon, and intense anxiety to friends, I am induced to offer a few suggestions as to a mode of practice quite different, which I have pursued for over twenty-five years, obviating many objections to the usual plan. It entirely obviates the use of chloroform, as the efforts and struggles of the patient rather facilitate the operation than otherwise.

The instrument consists of six or eight inches of fine wire, bent in the form of a hair-pin; indeed I have several times used a common hair-pin with very good results; yet a finer unannealed wire is better. The doubled end of the wire should be larger or smaller, to correspond to the size of the nostril of the patient. The patient,

(usually a small child) seated in a male assistant's lap, with his extremities secured, the surgeon can, with a good degree of confidence, thrust the bent end of the wire into the nostril above the obstruction, and withdraw it, or partially withdraw it, and in most instances the patient is immediately relieved. If not by the first effort, try again, as the plan is sure to succeed; at least it always has in my hands.

By the usual operation, before the age of chloroform, while in my pupilage, I saw this trifling accident several times by respectable surgeons converted into a protracted and tedious operation, which in all probability might have been done in a few moments with the bent wire. The safety in the use of the instrument without chloroform, and the dispatch attending it, render it, in the opinion of the writer, the best possible mode for this purpose.

I have several times, before the introduction of chloroform into practice, used the same instrument to remove foreign bodies from the internal ear, with good results. Yet I now usually administer chloroform and use forceps as a better mode.

I am of the opinion, the same principle applied to obstructions of the œsophagus might give satisfactory results. The wire should be larger and longer, and the double at the end should be made to correspond to the size of the orifice. I can see no good reason why this plan might not be resorted to in the absence of other instruments, with a reasonable prospect of success.— *Buffalo Med. and Surg. Jour.*, Feb., 1867.

Medical Pathology and Practical Medicine.

Art. V.— *Limosis and Parageusis:* By W. Marsden, M. D., of Quebec, Canada;

Ex-President and Governor Col. Phys. and Surg., L. C. Corresponding Fel. Med. S., London. Hon. Fel. Medico-Bot. Soc., London. Fel. Pathological Soc., Montreal. Hon. Fel. M. Soc. and Lyc. Natural Hist., Berks. Hon. Fel. Medico-Chirg. Soc., New York, etc., etc., etc.

THE general pathologist is sometimes embarrassed to find a significant term or name for certain morbid conditions of the human economy, or perplexed to find a system of nosology, to which to refer certain cases of diseased action, and such is my position in the present instance.

In the case I am about to narrate, there is morbid taste, as well as a morbid appetite, which renders a classification more difficult or complex. It will at any rate be conceded, that it is entitled to a place among the *cas rares.*

Many persons from birth, or some after period of life, are capable of taking an enormous quantity of food into the stomach, without any habit of indulgence, but who do not increase in bulk in proportion to the quantity taken; on the contrary, are often meagre and emaciated. Others, from mere habit, eat very much more than is necessary to carry on healthy vital action, and suffer corresponding-

ly. Others again live on an inconceivably small quantity of food, and enjoy perfect health. Others live and thrive upon a solitary article of food, constituting a *monivorous* class, if I may be permitted to originate the term; and others live on fluids, and continue healthy. I am acquainted with a strong, healthy, active and lusty farmer, who resides in the District of Three Rivers, who has lived for very many years, entirely on milk, whose taste is perfect, and who enjoys his food exceedingly. I cannot at present (but may hereafter) refer to some interesting cases of this latter kind, for which I have been consulted; but will now confine myself to a solitary case, for which I am indebted to A. A. Andrews, M. A., M. D., of Windsor, Canada West, which I transcribe literally. It was addressed to me, dated August 26th, 1866, and is as follows:

"Engrossed as I know you are on the subject of cholera, I do not suppose that one disease wholly absorbs your study, but that matters of general interest in the profession obtain a share of your attention, and a very singular case having come under my notice yesterday, I have determined to transmit you an account of it.

"I was requested to see and prescribe for a patient of my friend, Dr. Donnelly. It was a well-marked case of jaundice. The patient informed me that she had never eaten in her life. 'Je n'ai jamais mangé de ma vie.' Taking this to be a mere *façon de parler*, and to signify merely that she had habitually a poor appetite, and for as long as she could remember had never made a hearty meal, I paid no particular regard to the statement; but closer investigation elucidated the following relation, which I have every reason to believe literally correct.

"Clothilde Chauvin, ætat. 25; married four years since, to Joseph Mayeux; both parties born and residing at Pointe des Roches, in this county. When she was almost three months old, she had whooping-cough very severely, and the vomiting that attended it was protracted, and brought her to death's door. On weaning, every attempt to give her solid food, even in the most trifling quantity, and in the most attenuated form, was invariably followed by immediate vomiting. Bread, crackers, flour or arrowroot in the *smallest* quantity, added to her milk, never failed to be at once rejected. Her death from inanition was expected from day to day, and from week to week, but instead of dying, she throve wonderfully. It was then confidently predicted she could not survive her seventh year, but she passed that period without any sickness worth a moment's care. The age of puberty was then allotted as the utmost possible limit of her life, but she attained full womanhood without knowing what it was to be sick. Her (would be savant) friends now assigned her majority as the period of assured death, but she preferred marriage, and at twenty-one was married to the aforesaid Mayeux, and at twenty-three became a mother. She is now far advanced in her second pregnancy—the first time she remembers ever to have been sick. I asked her what her weight was, and she appealed to her husband, who said he believed it was one hundred and forty pounds. I am inclined, from the size and solidity of her arm, to believe he underrates it. Working in the harvest field, she says, no girl ever went before her; playing on the hay-mow, neither boy nor girl could

handle her. 'What do you live on?' I asked. 'A bowl of milk, with two tablespoonfuls of molasses, three times a day, and sometimes a lump of sugar, which I suck.' I observed to her, that if she had not tried to eat, she could not tell whether she could swallow or no. She said she had tried again and again, and that she *could swallow very well.* 'Then it seems you *do* eat, only you reject what you have eaten.' 'Instantly,' was the reply. 'How long is it since you made the last attempt to eat?' 'Seven or eight years.' 'Have you eaten nothing since you were married?' 'No, nor for many years before —no kind of solid food has gone inside my lips; nothing but milk, molasses and sugar.' 'Fruit, raspberries, or strawberries?' 'I have put them on my tongue to see if I could taste them, but never attempted to swallow one; *but I have no taste, I can taste nothing.*' Whether this last statement is *absolutely* true, I did not ascertain by special inquiries, but she led me to suppose that salt, vinegar, or gall, alike failed to produce any impression; in fact, that the gustatory nerve was paralysed or wanting.

"I would have pursued my inquiries further, but she had twenty-four miles to ride, and I did not feel warranted in taking up more of her time.

"The mere fact that existence has been maintained for twenty-five years on this diet, is not so amazing as the large amount of physical strength developed under it. Of the truth of the whole narration I have not the least doubt, and I think it a really surprising case. In appearance she resembles a stout, well developed French 'Habitant' woman." The Doctor adds: "I begin her history as she gave it to me, with the whooping-cough, though how far (if at all) that is connected with the case, I am not prepared to say."

Such cases as the foregoing are very interesting, and show how much more important a part fluids play in the economy of nutrition than solids. Here we see milk doing the work of nutrition, as well as bread, beef and potatoes; and why not? Milk appears to partake of the nature of both animal and vegetable food. Milk contains casein, fat and sugar; and we have the casein or curd, and the fat or butter, representing the fibrin or fat of the beef, and, at the same time, a large proportion of sugar, which is much increased in Mayeux's case by "molasses, and sometimes a large lump of sugar," which represents the starch of wheaten bread.

I hope soon to be able to return to this subject.—(Phil.) *Med. and Surg. Rep.*, May 4, 1867.

Art. VI.—*Experiments on Cutaneous Absorption:* By M. Ch. Hoffmann.

FEVER, or thermal excitement, always manifesting itself only after a number of baths more or less prolonged, and being, as we know, only the effect of a slow and continued absorption, through the skin, of some of the most active principles of mineral waters, I have thought that, placing myself in the situation of a patient sub-

jected for several days to a thermal treatment, I might succeed in throwing new light upon the disputed question of cutaneous absorption.

The substances on which my experiments were tried, are digitalis, iodide of potassium and chloride of sodium.

For several weeks, but with intervals of two to four days, I took baths medicated with these substances, and after each bath I took care to wash my whole body with ordinary tepid water. This precaution was indispensable, for every one knows that the skin easily absorbs certain highly reduced powders, and carries them into the torrent of the circulation, as if they were diluted in a fatty body. The numerous cases of poisoning related in the old works on toxicology, and the frequent accidents which medicine has every day to record in the manufacture of chemical products by the subjection of workmen to an atmosphere charged with deleterious powders, are no longer a matter of doubt. In short, during the whole time of my experiments, my epidermis presented no excoriation able to afford an absorption, either special or more ready than usual.

(1) During 44 days I took 16 baths, each composed of 300 *litres* of water with 250 *grammes* of the leaves of digitalis. After the third bath only, I began to feel a peculiar *malaise*, characteristic of the action of the remedy; at the same time my pulse diminished 4 or 5 pulsations a minute, and this lasted several hours. At the eighth bath the *malaise* increased, and my pulse, which ordinarily had a rate of 68 beats a minute, showed only 61. At length, after the 16th bath, my pulse had descended to 48 beats a minute. Then the absorption of the active principles of the digitalis had taken place, but in a slow and progressive manner.

(2) Every three days, for a month and a half, I took a bath, to which I added 50 *grammes* of iodide of potassium. From the fifth bath I easily recognized the presence of the iodide in my urine, and this condition even lasted 12 days after all treatment. Evidently if the absorption had been slow of production, the excretion was made not less slowly.

(3) After repeated doses, during 4 successive days, my urine by day and by night contained an average of chlorides corresponding to 2.15 gr. of chlorine to the *litre* of liquid. For a month I took, every third day, a bath made with 5 *kilogrammes* of sea salt. After the third bath the quantity of chlorine was already 2.58 gr; after the seventh, it rose to 2.98 gr; and at length, after my sixteenth and last bath, it was at 3.47 gr. After this, can we deny the absorption of the chlorides by the skin, when patients are subjected to baths either of mineral or sea waters?

These experiments, which I pursued with other organic substances and with mineral salts, led me to the following conclusions: first, chemical and other agents, dissolved in water, very slowly, but sensibly, enter the animal economy by means of the external integument; and it is only when the blood and other fluids are saturated, that the organism rejects them. Secondly, all remedial agents are not absorbed by the skin in equal degree. Thirdly, the contradictory results hitherto obtained arise solely from the experiments not having been continued long enough.—*Gaz. Méd.*, April 13, 1867.

Art. VII.—*Diphtheria followed by Amblyopia and Paralysis, treated by Phosphorus.*

A LADY, 26 years old, recovers from diphtheria. Three weeks or a month subsequently, she presents paralytic symptoms, which are developed in the following order: At first, paralysis of the soft palate, manifested by dysphagia and reflux of liquids by the nose; then loss of sensation and motion in the whole left side of the face, with very marked deflection of the mouth to the right; amblyopia of the left eye, supervening at the same time as the anæsthesia of the face; later an amelioration of the preceding symptoms, but on the other side, and at the same time, anæsthesia of the upper extremities to the wrist and of the lower to the knee; general health fair.

M. Tavignot saw the patient at this second period. The treatment had consisted hitherto in some simple collyrium, and the administration of wine of cinchona. The left eye was still very weak. It presented no lesion through the ophthalmoscope; but its pupil, which contracted when the right eye was open, dilated notably, and even became wholly fixed, when the right eye was closed. The patient was placed on treatment by phosphorus. She took two, then three *milligrammes* of phosphorus daily in pills; and at night inunctions of phosphorated oil were made on the insensible parts. Complete cure resulted after a month of this treatment.

According to M. Tavignot, who for ten years has often employed the phosphorus medication, the mode of preparing this remedy has much to do with its action, and generally is very faulty. Thus phosphorus is often combined with magnesia in a medicinal soap: the metalloid then passes to the state of phosphuret, and becomes wholly or nearly inert. The following are the two formulas adopted by M. Tavignot:

Phosphorus.....0.10 *grammes;*
Oil of sweet almonds..8.00 "

Dissolve by means of a water-bath in a close and full vessel, and add

Cacao butter.....8.40 *grammes;*
Powder of marshmallows.18.00 "

Make into 100 pills, and cover with gelatin or sugar, when cold.

Sometimes he adds to the phosphorated mass 5 *grammes* of subcarbonate of iron. Thus prepared, the pills of phosphorus keep well for several months.

For external use M. Tavignot prescribes the following liniment:

Oil of sweet almonds ..100 *grammes;*
Oil of naphtha..... 25 "
Phosphorus..... 00.25 "

Dissolve by water-bath in a close and full vessel.

This condition is very important, in order to have the phosphorus well dissolved; if not, it is only divided, and the inunctions then cause a more or less extensive burning of the skin.—*Gaz. Méd. de Paris*, Nov. 24, 1867.

ART. VIII.— *Influence of Climate on Venereal Diseases.*

THE evolution of syphilis, according to M. Lagneau, would be less rapid in cold than in warm countries, at Christiana than in France, in France than in the tropical regions. Gonorrhœa, very common in the United States, less so in China, would scarcely manifest itself among the natives of Algeria and the Levant, except those in contact with Europeans. Syphilitic maladies should be cured less readily in cold than in warm countries, and easily with the negroes.

When two races come in contact in the same country, syphilis falls more severely on that which previously had been least subject to it.

Individuals who contract syphilis in any country, would find its effects to amend in a warmer climate, and to be aggravated in a colder one.

Syphilis, though universally diffused, would seem unable to establish itself permanently in Iceland, situated almost under the polar circle. According to Livingstone, it would be spontaneously cured in the interior of Southern Africa.

Syphilis has a direct relation with inefficiency of prophylactic measures. In England, where these measures are nearly null, the annual proportion of the infected is 318 to 1,000 of the effective military force; in France it is 113, and in Belgium only 90, where these measures are very strict.— *Jour. de Med. et de Chir. Prat.*, Feb., 1867.

Midwifery and Diseases of Women.

ART. IX.— *Medicated Pessaries.*

DR. KIDD exhibited a new form of medicated pessary, made for him by Mr. Pakenham, of Henry street, since he had last brought the subject before the society. Dr. Kidd begged to remind the members that, on the 13th January last, he exhibited some pessaries made in Edinburgh, for Sir James Simpson's use, and some of the same description made by Mr. Pakenham. These were composed of cocoa-nut butter, a substance sufficiently firm at low temperatures to allow of the pessary being introduced into the vagina by the patient herself, but which melted very rapidly at the temperature of her body; but he then said that, in practice, he had found these pessaries were often objected to by patients, because, as the cocoa-nut butter melted, it escaped from the vagina, and soiled the clothes in a very offensive manner, and that, to obviate this difficulty, he had latterly got the pessaries made as small as suppositories, so that, instead of containing 120 or 150 grains of cocoa-nut butter, they contained only five or ten. But a pessary of this size would not contain a sufficient dose of the medicinal agents that may be

applied to the uterus with advantage, and it is difficult to properly introduce such small pessaries into the vagina; so that it becomes necessary for the medical man to apply them himself, by means of the speculum. This latter objection, Dr. Kidd said, applied also to another means of applying medicinal substances directly to the uterus, viz., that suggested by Dr. Tilt, by wrapping them up in cotton, and introducing it into the vagina, as this can only be done rightly by means of the speculum.

The requisites, Dr. Kidd said, for a good form of medicated pessary are—

1st. That it can be introduced by the patient herself.

2nd. That it will bring the medicinal agent into contact with the mucous membrane of the vagina and uterus, and retain it there sufficiently long to allow of absorption, or of such local action as may be required.

3rd. That it will not be offensive to the patient, soil her clothes, or prevent the medicine having due effect, by allowing it to escape from the vagina.

The pessary now exhibited by Dr. Kidd complied with all these requisites, and had none of the disadvantages of the other forms, nor did it require the use of an instrument for its introduction into the vagina, like that recently suggested by Professor Racciborski. It was composed of cotton, coated with an exceedingly thin layer of cocoa-nut butter, so thin and so small in quantity as to be unobjectionable. In manufacturing this pessary, Mr. Packenham rolls a small portion of cotton, to which a thread has been attached, on the end of a glass rod, giving it the form and size of the ordinary conical medicated pessary. He now dips it rapidly into melted cocoa-nut butter, so as to give it a uniform thin coat, to preserve its shape, and give it firmness. As soon as the cocoa-nut butter is cool, the glass rod is withdrawn, and the pessary now resembles an empty cartridge case, which may be charged for use by introducing into it the medicinal agent to be employed, and which may be used either in the state of dry powder, or mixed with glycerine or water. The end of the charged cartridge is now plugged with cotton and cocoa-nut butter, and it is ready for use.

It has now a form and consistence to allow of its easy introduction into the vagina by the patient herself. The layer of cocoa-nut butter soon melts, and mingles with the cotton, serving to bring the drug, with which the cartridge is charged, into contact with the vaginal mucous membrane, and allow of its action on it. When the pessary is introduced, the thread, which had been attached to the cotton, is allowed to hang out of the vagina, and serves as an easy means of withdrawing the cotton, when a sufficient time had elapsed for the action of the medicine.

Dr. Kidd stated that he had used these pessaries, charged with various substances, such as tannin, alum, iodides and bromides of potassium, iodine dissolved in glycerine, acetate of lead, opium, morphia, etc., and has found them most satisfactory; but he had learned that active preparations, such as tannin, which may irritate the mucous membrane, or morphia, should be used in smaller doses than in the old form of pessaries.—*Dublin Quart. Jour. of Med. Sc.*, Nov., 1866.

ART. X.— *Tedious Labor in the Second Stage:* By J. THORBURN, M. D. Manchester.

THE author first referred to the strong denunciations of "meddlesome midwifery" contained in all modern British text-books. These, the natural reaction from an opposite state of things, had in many points been carried too far, and had led to a discrepancy between the practice and preaching of eminent accoucheurs. For the sake of testing this, he discussed the appropriate treatment of a case where the presentation is natural, the os well dilated, the head begun its descent, there is no manifest obstacle and the parts seem apt for delivery, the uterine pains are of average strength and frequency, and there is no constitutional disturbance, but matters have been *in statu quo* for a couple of hours or thereabouts, and there is a strong probability of lingering labor, though it may ultimately terminate naturally. Such cases occurring frequently, there are three courses open — to trust entirely to nature, to give ergot, or to use the forceps. The first course is authoritatively laid down by all British writers as the most natural, and therefore the safest. To set against this view, there is the certainty of much longer suffering, the possibility of exhaustion, which may be suddenly developed, increased risk of metritis from over-exertion, of sloughing of the soft parts, hæmorrhage from inertia, of rupture of the uterus, and the possibility of having to fall back on one of the other plans under less favorable conditions. None of these events may be very likely, but they are all possible; and any procedure which will diminish one or all of these dangers without substituting equal risks should be adopted. Ergot does not, in the author's opinion, fulfil this condition; for, although it may succeed in speedily terminating the labor, it may also fail, and involves a greater risk to the child from spasmodic or unintermitting pressure, or from its poisonous action (?), and it greatly increases the danger of rupture of the uterus and retained placenta. By forceps, speedy delivery is certain, undue uterine fatigue is obviated, and all chance of rupture from straining is abolished. The author endeavored to show that, in proper hands, there is no corresponding disadvantage; that sloughing of the soft parts and torn perineum, so far from being more, are less probable; that there is no risk in thus carefully and slowly emptying the uterus; that the pain of labor is diminished; and that the risks to the child are lessened in such a case. He protested against the invariable rule of arguing the question on the ground that the operator may be unskilful; such an argument never being used in discussing the general advisability of any other surgical proceeding. He concluded that, contrary to the opinion of Murphy and others, there are cases in which it is advisable to interfere merely for the purpose of abbreviating labor, and that the practitioner is not liable, in such a case, for any consequences that ensue, except such as are clearly traceable to his own neglect or maladroitness; and agrees with the American accoucheur, Hodge, in emphatically condemning the "practice which permits the agonies of labor to be unnecessarily prolonged, or the safety of the mother or child to be jeopardized, from the timidity or ignorance of the accoucheur respecting an agent whose employment necessarily involves no danger.— *Med. Times and Gaz.* Sept. 1, 1866.

Art. XI.—*Hydatidiform Degeneration of the Fœtus:* By John K. Spender, M. B., London.

A RECENT contributor to the *Medical Times and Gazette* (Mr. Ley, of South Molton) solicits information on this rather rare degeneration of the fœtal structures. He relates a noteworthy case, and the following is an outline of another case which came under my observation a few years ago:

On Sunday afternoon, June 21, 1863, I was asked to visit a young married woman supposed to be in labor at the full term, whose medical attendant (Mr. Chilton) was otherwise engaged at the time she required his services. On visiting her I found that a copious flooding was going on, and a vaginal examination led me to imagine that I had to deal with an ordinary illustration of placenta prævia. I plugged the vagina with the best material at hand, ordered the patient an ample supply of nourishment, and promised to call again in an hour. Within that time I was again summoned, and found that the renewal of the flooding had forced out the plug; but a fresh examination did not lead me to alter my diagnosis, and I handed the case over to Mr. Chilton at this moment, as an undoubted example of placental presentation. I was obliged to leave altogether, in order to attend an urgent medical case, but I gave a warning of danger to to the husband before departing from the house.

At ten o'clock the same night I learnt that the woman was dead. I went down to the house once more, and there the following particulars were told me: Soon after I left in the afternoon Mr. Chilton discovered that the case was not one of placenta prævia, and that there was about it something altogether unusual. He was unable to arrest the flooding, and therefore he sought the help of a highly skilled obstetric friend. To empty the uterus of its contents, whatever they were, was a clear necessity, and with much labor this was accomplished. A large chamber-vessel was filled with hydatidiform substance, which was kept for my inspection. Death appeared to have resulted from shock and from the exhaustion produced by loss of blood. Everything was done for the patient that obstetric science could devise.

It is possible that, if this woman had been examined in the last month of pregnancy with special reference to hydatidiform degeneration of the ovum, a refined diagnosis might have announced the fact. The principles of this diagnosis are well given in Dr. Tyler Smith's text-book of midwifery, but any practitioner may be forgiven for being unprepared for a pathological emergency which is happily so rare.—*Med. Times and Gaz.*, March 23, 1867.

Materia Medica and Pharmacy.

Art. XII.—*Action of Digitalis.*

IT has been thought that the lowering of the pulse in persons under the influence of digitalis, was owing to the direct hyposthenic action of this remedy on the muscular fibres of the heart. According to M. Bouillaud, it exerts a sedative action on the heart, whilst

very distinguished physicians, as Beau, for instance, regard it as a heart stimulant.

These conflicting views of such able men are ascribed by M. Legroux, in a recent thesis, as due to erroneous impressions of its mode of action. "Experience," says Legroux, "has shown us that digitalis is of but little or no benefit in acute affections of the heart, and in purely nervous palpitations; whilst it is highly beneficial in organic affections of the same viscus, and particularly in those depending on a contracted state of the orifices, which produces in a greater degree derangement of the peripheral circulation." It is indeed on the capillary vessels that digitalis acts primarily as a stimulant, through the vaso-motor filaments of the sympathetic. Moreover every substance which increases the contractility of the capillary vessels, through the ganglionic nervous system, increases the arterial tension and occasions slowness of the pulse. M. Marey has established the fact, that the frequency of the heart's movements is in inverse ratio with the arterial tension.

This depression of the pulse is not produced immediately, and does not become apparent until twelve, twenty-four, or thirty-six hours after the administration of the remedy, being sometimes preceded by an acceleration of short duration, due to the efforts of the muscular structure of the heart in overcoming the resistance offered by the contracted capillaries. This theory explains how remedies, and particularly digitalis, which are improperly termed arterial sedatives, are at the same time diuretic. In increasing the contractility of the capillaries and the arterial tension, they diminish the capacity of the vessels which, becoming insufficient to circulate the entire mass of blood, are relieved by the increased activity of the kidneys. In order to confirm his view, the author refers to the uterine contractions from the use of digitalis. Is not the uterus exclusively supplied with filaments of the sympathetic (Longet)? Digitalis exerts the same action upon it, therefore, as on the vessels, and in case of necessity might prove a valuable hæmostatic.

To recapitulate, digitalis being absorbed, and its active principle, digitalin, circulating in the blood, exerts a primary action, so to speak, on the motor elements of the capillary vessels which it stimulates, thereby restoring the normal equilibrium of the circulation. It acts in no other manner in mitigating the accidents of epilepsy, of delerium tremens, of chronic alcoholism, of acute mania; of all affections in fact, in which active congestions of the brain and spinal cord form an important feature. In dropsies it exerts a direct influence on the cause of dropsy, the circulatory trouble. Hæmorrhages (epistaxis hæmoptysis, metrorrhagia) are happily controlled by digitalis, and this influence cannot be ascribed to the mere depression of the circulation, but chiefly to the contracted state of the capillaries.

M. Legroux is disposed to attribute the marked action of digitalis in fevers to its influence on the great sympathetic. It is for the same reason that pneumonia, tubercles, hemicrania from menstrual trouble, asthma, and other maladies accompanied by a more or less intense congestion are equally benefited by digitalis.

Let us add, in conclusion, that if this remedy is contra-indicated in acute affections of the heart, it is also inadmissible in cases of

deficiency of contractility of the muscles of the heart from fatty degeneration; for the heart, already weak, can no longer overcome capillary resistance, which is increased by its administration, and death may result.—*Jour. de Méd. et de Chir. Prat.*, Feb., 1867.

Art. XIII.—*Hydrated Silicate of Magnesia.*

FOR this discovery the profession is indebted to M. Petrequin. He proposes its use as a substitute for the bismuth, not only on account of its existing abundantly in a natural state and of the facility of its preparation artificially, but also on account of its cheapness. This substance is white, insoluble and insipid. M. Petrequin has used this salt with success in chronic diarrhœas, in intestinal fluxes of various kinds, and particularly in the diarrhœas produced in dyspeptics by the use of fruits. Observation teaches us, moreover, that the silicated mineral waters exert a beneficial influence in digestion, which may be owing to the silicate of magnesia they contain. As to the action of the two salts, they are not exactly the same, it must be admitted. It is evident that, in certain forms of dyspepsia, where the sub-nitrate of bismuth is beneficial, the silicate of magnesia may fail; but in passive diarrhœas, on account of its absorbent and protective powers, it acts like prepared chalk and is highly useful. Such is the opinion also of M. Brassac, physician of the first rank in the navy.—*Journal de Méd. et de Chir. Prat.*, Feb., 1867.

Art. XIV.—*Milk Diet in Diseases of the Heart.*

ACCORDING to M. Pécholier, in active hypertrophy of the heart, or near its beginning, the milk diet, aided by digitalis, is most beneficial. It is, though, difficult to find a patient that will, at the beginning of the disease, submit to such a treatment, which may after a time bring a cure; but when the disease is advanced, especially if the patient has had some phenomena of congestion of the brain or lungs, he will more readily submit to it. In this latter case and under the influence of the milk diet, there is a diminution of the palpitations and impulse of the heart, of the sanguineous turgescence of the face, brain and lungs, and the patient is unexpectedly relieved. Whenever any interruption of this regimen brings a return of the alarming symptoms, if the patient is put again under the treatment, he will again be much relieved. By this means life is prolonged and more supportable.

Perhaps M. Pécholier exaggerates the influence of his remedy, but he relates interesting facts confirming his declaration to a certain extent.—*Jour. de Méd. et de Chir. Prat.*, Nov., 1866.

ART. XV.— *Capsicum in Delirium Tremens.*

THE following case is related by Dr. Lyons, in illustration of the efficacy of capiscum in the treatment of delirium tremens: A tavern-waiter of chronically intemperate habits, was admitted to the Whitworth Hospital in the first stage of this morbid condition. The patient exhibited tremor in almost all the muscles of the body, chilliness, debility, sleeplessness, foul tongue, severe and general uneasiness, but there was a total absence of illusions, horrors, or delirium to any degree. He got a single dose of capsicum, twenty grains in a bolus, after which he slept and fully convalesced, the disease having been thus peremptorily cut short. Dr. Lyons remarks on the great importance of this early phase of the disease being recognized and promptly treated. The patient is in that condition in which he may be by but slight further indiscretion plunged suddenly into all the horrors and moral degradation of the state of fully developed delirium tremens, with all its consequent loss of character with others, and loss to the patient himself of that last barrier against utter abandonment, the sense of shame and remorse.

As Dr. Lyons observes, a brief but variable period often precedes the fully developed attack of delirium tremens, especially in first cases, in which the patient presents anomalous symptoms unintelligible to himself, and not always read aright by his attendant. This stage is in some patients marked by the occurrence of tremor, sleeplessness, and general distress and anxiety, without a trace of delirium. In other instances slight illusions prevail without tremor, from which the patient can by an effort arouse himself, and under strong self-directed exertions of the will even command his faculties for a time, and pursue avocations of business, to break down, it may be, hopelessly, a few hours subsequently, if his condition is neglected, misunderstood, or mistreated. Under these circumstances the treatment by capiscum comes in very opportunely, and by its employment we may, as in the case just cited, cut short the disease, and so save the patient from the consequence of his imprudence, and possibly restore him to reformed life. Another case well illustrates the success of this drug when opium had completely failed to alleviate the symptoms, and seemed on the contrary in many respects to aggravate the patient's condition. The case was that of an individual who had taken six grains of opium within a period of two or three days without sleep being procured, or any relief to the illusions, tremor, and distress under which the patient labored. After a twenty-grain dose of capsicum in bolus, profound and refreshing sleep for twelve hours was induced, and the patient awoke conscious and restored. In an almost precisely similar instance occurring about the same period, a thirty-grain does of the drug had to be given a second time before full relief was procured. In one or two instances of individuals of confirmed and extremely intemperate habits, it was found necessary to repeat the dose some three or four times.

As to the physiological action of the remedy, Dr. Lyons's explanation is that already given in a former communication—namely, that it produces a powerful stimulant and sedative influence by its direct action on the gastric filaments of the vagi. Slight uneasiness of the stomach has been complained of in one instance only after its use,

and in two instances somewhat smart purgation was noticed, but without any evidence of intestinal or other irritation.

As at present employed, the drug is administered in bolus made up of honey of roses; but Dr. Lyons suggests the feasibility of its being conveyed to the stomach in the more agreeable form of a capsule.—*Ranking's Abstract*, Jan., 1867.

Bibliographical Record.

Why Not? A Book for every Woman. The Prize Essay to which the American Medical Association awarded the Gold Medal for 1865. *Issued for General Circulation by order of the American Medical Association.* Published by Lee & Sheppard, Boston.

Such are the remarkable title and claims to attention of a book written by H. R. Storer, M. D., of Boston, as a diatribe against abortion, but which the American Medical Association, by the action of its Boston session, has converted into an official "deliverance" on this subject. However, it is only to the title and official "declaration and testimony" concerning the book that we apply the term "remarkable;" for there is now prevalent, to a lamentable extent in our profession, a prurient ambition to be regarded high authorities on subjects connected in some shape or other with the relations of the sexes, which is wonderfully prolific in breeding monographs and tracts for the enlightenment of either physicians or the general population. How can we explain this fact? Did the professional mind derive its impulse in this direction from changes in society, either physical or moral, which created a necessity for the more special study of such subjects; or has a perversion of objects and morals so lowered the tone of the medical profession itself, that many of its members choose this field of investigation in gratification of licentious tastes? We incline to think the former inference tenable; but while we accord it a due amount of influence, we know the latter to be equally true concerning some professional examples of whom we wot.

An author who has obtained general celebrity by several works upon subjects growing out of the relations of the sexes, makes this singular statement: "Each century is characterised by its great malady. The thirteenth was that of leprosy; the fourteenth, of the

plague; the sixteenth of syphilis; the nineteenth is stricken at the two extremities of nervous life—the intellect and the affections—as shown in the man by the enervated, vacillating, paralytic brain; in the woman, by the painfully ulcerated matrix."

Whether we are to charge the production of this treatise to the social evils of the writer's population, which rendered counteracting efforts on his part both a necessity and a duty, or whether we must ascribe its appearance to the fact that his genius sprouted in this direction, is not easy to determine. From the best evidence attainable, we think both causes had share in the conception and execution of the work, making it therefore, in one aspect, a tract designed to correct a widespread and atrocious crime; in another aspect, constituting it a part of the flash medical literature of the day, written in gratification of censurable taste. It is, we acknowledge, scarcely in keeping with a becoming humility, to raise such a question in connection with the laurel-wreathed, anti-abortion apostle of the American Medical Association; and it may do him injustice, upon advisement of which fact we shall rejoice, while we hasten to make reparation. If, however, he is the same "H. R. Storer" who contributed an article to the *American Medical Journal* for October, 1856, on "Nymphomania," he must confess that it exhibits an adeptness on the part of its author for investigating such subjects, and for extorting confessions from female patients which pander to prurient sensations much more than they advance the cause of science — an adeptness that clearly indicates an agreement between talents and tastes.

While we admit the general incumbency upon writers for a medical journal to avoid all disparaging personal allusions to authors whose works are being reviewed, our sense of duty leads us, in this instance, to a different course. We honestly believe that, if we can, by truthful statements or well-sustained suspicions disparaging to this book or its author, counteract its general circulation, we shall thereby subserve the cause of virtue and morality.

The title of the book is, in itself, such an offence against public decorum and good manners, that it justifies a relentless crusade for its expulsion from general marts of literature. It presents obtrusive and immodest claims for general notice; it is not a book for some women, for certain women, for those women whom it may concern, but it is "a book for *every* woman" (so-called). No lady can enter a book store which tolerates such literature upon its shelves, without danger of being victimized by the Yankee ingenuity of the title, so

prettily printed in gilt letters upon the cover. "A book for every woman:" "What can it be," says the married woman, "but some useful addition to my domestic formulary?" "It may be a treatise on cosmetics, or dressing, or the art of preserving beauty; it surely must be something valuable, or it could not appeal to *every* woman, and therefore I'll buy it," saith the maiden, as well as the married woman. Thus is the cheek of many an innocent-hearted woman made to tingle with shame and mortification, when upon reaching her chamber she finds herself in possession of a tract unsuited to her wants and offensive to her modesty. We do not hesitate, therefore, to charge that the title of the book is a gross fraud, and calculated, if not intended, to deceive.

This however, may be, in the estimation of the author, a very venial sin. Whatever tributes of admiration are due to the New England people for their high intellectual cultivation, their wonderful contributions to art and science, their superhuman energy and industry, the fact cannot be disputed, that their dominant philosophy begets, encourages and exculpates all forms of deception and fraud, which have the effect to secure the given end. Their "Higher Law," indefinitely plastic, sanctions all tricks and strategies which are clothed with the sin-exempting element of success. This cultivation of the intellect upwards, and of the morals downwards, on the part of a people who at this moment furnish the civilized world its ruling sentiment, is a lamentable truth, and one that gives but little presage of a speedy dawning of the millennium.

But to return to "Why Not?" The author does not limit himself to the subject of abortion solely, but includes in his purview inculcations upon certain other points, whose intended import is somewhat equivocal. On the eighth page of his prefatory remarks, in answer to many inquiries, he gives his fair readers the benefit of his opinions in respect to the existence of an inter-menstrual period of infecundity. He informs them that, "during the central ten days or fortnight, the risk is but comparatively slight." The term risk, in its personal application, is customarily employed to denote exposure or liability to something at enmity with life, health or happiness. How many women have pondered over this sentence, or to what extent it has influenced their conduct, is known only to themselves and their God. Whatever the author's real meaning was in employing such language, we shall not cast so great a slur upon his Yankee astuteness,

as to suppose he did not know that such a hint would not be altogether unappropriated by his brilliant, subtle and "strong-minded" countrywomen.

But it is not always safe to trust to plain, old-fashioned interpretation of our mother tongue, to set forth the real meaning of a New England writer. They are a people who have arrived at a perfection of philological expertness, such as the world has rarely witnessed. They have produced a highly artistic phraseology which passes current through all Christendom, and "befuddles" mankind as to the true sentiments and character of its authors. They boast largely of their "philanthropy," and "humanity;" and in their name wage a savage and bloody war, and call their success "extending the area of civilization and freedom." They employ in speaking of negroes the tender epithets of "friend and brother;" while, between enthetic diseases and enthetic morals, they have in four years, time diminished the numbers of their new *protégés* by at least one third. They speak in their newspapers and "Pilgrim Societies" of the "great educated conscience of the North;" while they are, at this moment, obliged to call in aid all the enginery of the pulpit and press, as well as more rigorous state enactments, to repress the indecent and wicked crime of abortion. To keep themselves in power, they industriously foment discord and bloody contentions between the white and colored races at the South, and call it "evangelizing four millions of freedmen." Our author is not exempt from this disposition to resort to high-sounding terms, whose very extravagance would prevent some shallow readers from questioning the truth of his pretentious allegations. He speaks on page 85, of "the South, now disenthralled and first made habitable by freedmen." This is surely a very reckless application of language, in description of a country first made desolate by a war, whose injustice and cruelty will not always pass unchallenged, and in which civil government is afterwards subverted and military despotism substituted.

We are painfully aware that, whatever we may say in censure of the spirit which animated either the writer of the book or his coadjutors of the American Medical Association, in distributing it in such a manner will, for the present at least, be of but little avail. We discern no point of refuge from the coming cataclysm of New England sentiment and philosophy, which, like a huge crevasse, threatens to submerge all that we have held dear in Christianity, good morals or social usages—a thousand-fold worse fate than the physical conquest

we have just undergone. But we shall not be the less earnest and indefatigable in endeavoring to prevent the circulation of this book among the ladies of the South. It is not applicable either to their tastes, morals or wants; and when New England habits and morals have so encroached upon us, as to render this book a proper or necessary part of female education, we shall have lost every particle of hope for the future of our stricken land.

Treatment of Fracture of the Lower Jaw by Interdental Splints. By Thomas Brain Gunning, New York. Pamphlet, pp. 39.

The bony frame-work of the human body, and of all animals, is the structure upon which is built, or attached, the beautiful superstructure of muscles and their accompaniments, the cartilages, ligaments, synovial membranes, bursæ, vessels, nerves, etc. The bones are the fulcra, and the muscles acting on various points of these are the motor powers, through innervation, which set the entire mechanism into symmetrical, useful and graceful motion. Thus we have levers of the first, second and third degrees, the mechanical principles governing which account for the various movements and adaptations of the body and its parts. It is by knowing the force of muscles, their actions and attachments, that we are enabled to reduce and treat judiciously dislocations and fractures of different parts.

The chief trouble we have in obtaining straight limbs and good results in fractures, is in knowing the attachments, force and functions of the muscles concerned, and in counteracting excessive or inefficient action in morbid conditions. To treat successfully fractures of the under jaw, we have simply to be governed by the same principle—to know the mechanism of the bones, the functions and force of the levers (the muscles), and make due allowance for the abnormal action of the latter when morbidly sensitive, or in the absence of volition. The chief motors of the under jaw are the masseters, the temporals and the pterygoids; the internal and external, two on either side. They carry the under jaw powerfully against the upper, and rotate it also. The digastricus, mylo-hyoid, genio-hyoid and genio-hyo-glossus, taking their fixed points from below, depress the under jaw, and in fractures of this bone we have, by mechanical means, to counterbalance action in the muscles in their morbid condition. The best means to do this, and with the

greatest convenience and comfort to the patient, is the best treatment.

We at once recognize the ready and comparatively comfortable adaptability of Dr. Gunning's splints. Their object is to coaptate and keep in position the bones, with the least possible disturbance of the circulation and nervous *influence* by pressure, and at the same time permit the necessary motion in taking food and speaking, which is a desideratum in this fracture. It is rather a troublesome apparatus to get up, especially with the great mass of physicians and surgeons in the country, which is its most serious objection, because they are not often accessible to scientific dentists. With their aid and with all the material necessary, it is certainly a great improvement in the treatment of fractures of the under jaw, especially when comminuted.

Dr. Warren Stone, Jr., of New Orleans, treated a case of comminuted fracture of the under jaw in May, 1866, with the vulcanized splint of Dr. J. B. Bean, of Atlanta, Ga., and reported the case in the "New Orleans Medical and Surgical Journal" in November following. In this report he attributed the discovery and application of the splint altogether to Dr. Bean, and so far as Dr. Stone and the profession here knew, this was true. The case was satisfactorily and successfully treated, and the result, considering the complications, so good, that an instructive report was made.

Since that time Dr. Gunning's report of the treatment of this fracture with the same apparatus, or a similar one, came to hand in pamphlet form, detailing cases as far back as 1861, and the splint was exhibited to the New York Academy of Medicine. We would be pleased to know to whom priority in the discovery and application of the vulcanized splint to the jaw is due. The contrivance may have been original with both the gentlemen, as there was no communication during the war; but however this may be, it is a good invention, and suffering humanity, physicians and surgeons, are pleased and grateful for this additional adjuvant in the treatment of the painful accidents to the under jaw.

Idiocy and its Treatment by the Physiological Method. By EDWARD SEGUIN, M. D. 8vo., pp. 457. New York: Wm. Wood & Co. 1866. AMONG the latest fruits of our Christian civilization is the education of deaf mutes, the blind and idiots, and their elevation from the condition of helpless burdens to that of useful members of society.

In the education of the first two classes of unfortunates some progress had been made during the last century, but the education of idiots does not seem to have been contemplated till early in the present century, nor to have attracted any considerable attention till within the last forty years. The author of the work before us appears to have been one of the earliest writers on this subject, and this is the last of several contributions which he has made public since 1839.

Though this matter belongs rather to the philanthropist, its relation to the physiology of the nervous system brings it within the sphere of medical investigation; and medical men are rendered, by their peculiar studies, best qualified to apprehend its nature and adapt the means to the end. It has therefore naturally fallen to the profession to direct these benevolent efforts for the amelioration of this most unfortunate class.

After a brief historical sketch of the subject in the introduction, he proceeds to treat it under five different heads: (1) Idiocy, its nature, symptoms, necessities, etc. (2) He treats of education, the proper method of which he styles *physiological*. This is both physical and intellectual, should be adapted to the particular deficiencies of each subject, and must therefore be as diversified in plan as are the different phases of imbecility. (3) This part he devotes to the moral treatment, which has special reference to social relations, and includes the consideration of the various influences brought to bear upon the minds of idiots. (4) Under the caption of Institution, he gives his views in regard to location, buildings, internal arrangements, out-door resorts, regulations for pupils, officers, attendants, teachers, etc. (5) In the appendix are subjoined historical sketches of fifty-seven cases of idiocy, collected from various sources, some illustrating the causes of the infirmity and others the effects of treatment.

Of the aim and general merits of the work, we feel bound to express approval, and to those interested in the subject, we would reccommend it as a convenient and reliable guide.

Fault-finding, though sometimes a necessary duty for a candid critic, is not a pleasant task, and to us least of all when involving matters of political or sectional dispute. But when a writer upon a grave subject, having no necessary connection with such issues, so far forgets propriety, to say nothing of truth and justice, as to cast a slur upon the collective people of great states, we cannot hold our peace. We quote from his introduction: "If we believe in the signs

nearest to us, we should think that, supposing the American teachers only equal in point of learning to their European brethren, they have shown themselves so superior in point of understanding of philosophical questions, and of devotion to the down-trodden of our race (when hundreds of them have left home and comfort, and foregone the protection of civilization to teach freedom to freedmen), that it is impossible to deny them the virtues necessary to carry into our schools the means of signal improvement in our race; unless we are greatly mistaken, our teachers are ready to spread civilization, not by the old process of overculture of a few, but by the philosophical elevation of the masses."

By "American teachers," he obviously means those of the Puritanic stamp, who are fond of talking about morality and conscience; and are chiefly distinguished for their skill in discerning the motes in their brother's eyes and their disinterested attention to their neighbor's business.

We have no disposition to discuss those teachers' "understanding of philosophical questions," inasmuch as might is sure to make it right for the present; but it is worthy of remark that, from unmistakable indications, their "devotion to the down-trodden of our race" is resulting in the rapid extermination of those *protégés*, who neither sought nor needed their benevolent interference. If he means that they have "foregone the protection of civilization" by teaching freedom to freedmen under the auspices of the "Freedmen's Bureau," we are content to leave this point for him to adjust with that amiable body; but it is hardly possible for him to doubt that "the powers that be are ordained of God," nor that he should fail "to pay respect to the higher powers." No, the obvious implication is, that those "teachers are ready to spread civilization" in the benighted Southern States, where it has never yet existed.

There are those who are bold in the belief that the Southern lion is now so feeble and friendless that any ass may kick him with impunity. Let the base herd be advised that his voice, once so awful in their ears, is not yet hushed, and may still be provoked by insult to repeat its bygone roar.

Visitors of the Celestial Empire, even the Puritanic lights of civilization, acknowledge with a smile the appellation of "outside barbarians;" but this illustration is to be used in a negative sense. Dr. Seguin has probably heard of the Decalogue, and for aught we know may himself profess to be a Christian; but certain it is that Sinai's

thunder finds no echo in his memory, nor his heart bears the impress of those tables graven by Jehovah's hand, which inscribed thereon for all time "*Thou shalt not bear false witness against thy neighbor.*"

Obstetrics; the Science and the Art. By Charles D. Meigs, M. D., lately Professor of Midwifery and the Diseases of Women and Children in Jefferson Medical College, etc. 5th edition, revised, with 130 illustrations. 8vo., pp. 760. Philadelphia: Henry C. Lea. 1867.

This work has so often and so recently been before the public (the fourth edition having appeared in 1863), and its merits and reputation are so well known, as to render any extended notice superfluous. Though sensible of the advances made in the obstetrical art, and ready generally to admit their value, it is noticeable that he still adheres to the Davis forceps, notwithstanding they have been generally discarded, in this country, in favor of the improved Hodge instrument. While it would be useless, and perhaps worse, for one of Prof. Meigs's skill and experience to abandon an imperfect instrument, with which he had long been familiar, we are quite satisfied that a beginner would find the "Eclectic Forceps" far more efficient and satisfactory to himself.

With regard to anæsthetics, he takes high conservative ground, adhering to his old convictions of the impropriety of their general use. Chloroform he would discard altogether from obstetrical practice, and ether he would admit in exceptional cases. Let his own words speak: "I am still quite convinced that the discovery of anæsthesia in midwifery has done more harm than good, and I believe its use will decline, and not increase. I think it is declining already. Now, in December, 1866, having declined for the short remainder of my life the business of a physician, and regarding that circumstance as liberating me from many of the mental bonds that qualify more or less every medical man engaged in the active pursuits of the profession, I distinctly express my regret for the introduction of the anæsthetic methods into the practice of midwifery. I consider that, notwithstanding there may be some instances in which parturient women should be benefited by the use of ether, yet such cases are extremely rare; whereas the mischiefs arising from the lavish and indiscriminate use of anæsthesia, so tempting as it is, are very numerous and serious." The ground he occupies on this question

is safe, prudent and, in our opinion, decidedly preferable to the position held by those who pride themselves on being "progressive."

In remarking that Dr. Meigs retains his old fondness for new words, we disclaim the utterance of an Hibernicism; as also in accounting for the fact upon the supposition of a conservative adherence to a youthful ardor in the invention of terms suitable for the attire of original ideas. *Endangium* no longer requires his apology, being now recognized by the dictionary-makers. A casual examination of the volume has brought to our notice several intruders, for which no leave of introduction is asked. As *Ovaric*, *Mensual*, *Hypogaster*, *Germiferous*, and *Hila* in the singular number, are not known by Webster, Worcester and Dunglison, we are sorry that he should present his own illegitimate children as the lawfully born offspring of our mother English. No asylum has yet been chartered in the republic of letters for such foundlings, and we apprehend that, when turned loose on the cold charities of the world to beg from door to door, most of them must perish of neglect.

Paris Correspondence.

Campaign Notes on the German War. [Continued from the May Number.]

Paris, May, 1867.

Rapid communication with concentration, through the agency of steam and electricity, have changed to a great extent the duration of war; modifications at the same time in modern missiles have produced a marked effect in the character of wounds and in mortality. Steam vessels, railroads and telegraphs, have supplanted the slow means formerly used for conducting campaigns; and in place of the smooth-bore and round shot, there exists the rifle with cylindro-conical ball, of larger calibre, greater accuracy and longer range. Evidence of the better care needed for the wounded by these changes in modern warfare, was first evinced in the Crimean and Italian wars, and became developed to a high state of perfection in the American. The magnitude of the struggle and the material of the armies, especially in the South, called forth the necessity of those humanitarian societies, which sprang up over the whole country and contributed greatly to increase comfort and to

lessen loss of life. In permitting these organizations to act with the regular medical department of their armies, the Confederate and Federal governments pursued a wise course. The civilized world was aroused to the great benefit effected by these societies, to the necessity in the short and bloody campaigns now conducted for their existence, and to the impossibility of any army medical department attending fully to the sick and wounded without such assistance. Two governments only did not recognize the spirit in which the Geneva Congress was called, and the purposes for which it was convened. Prussia was not one of these, and the first fruit gathered, was the admirable manner in which her sanitary commissions attended to the wants of her own wounded, as well as those of an enemy, who was not represented at this international conference. The sum of $500,000 was given in this short war, independent of the varied gifts which were freely contributed by all classes. A citizen of Berlin gave wine to the amount of $2,000. Convoys twice weekly were forwarded from the central bureau in charge of committees, who distributed the articles to sub-committees at various hospitals. This late experience and the further improvements in arms to heighten the number wounded in a short time, has called forth a lively interest throughout Europe to organize societies for assisting the medical departments of their respective governments. All nationalities are now interested; and Russia, the only remaining power which has not recognized the necessity of these organizations, will be ready, let us hope, in her next war, to set an example with her Empress, as Prussia did with her Queen, who was the first to put on the Geneva badge, to wear it during the war and to take an active part in the work of the commission. As she visited daily the hospitals, the soldier, friend or enemy, felt the consolation that she gave in kind words and in the gifts she made to supply his wants. Six hundred ladies in Berlin were engaged in similar duties, and many left to give their services to the Austrians in the hospitals of the second line, nearer the field. Wherever the international flag of white with the red cross was found, there a veritable charity was performed for the sick and wounded it protected, and upon neutral ground a common good was fraternally effected. The publications detailing the stupendous amount of money and material furnished by the Sanitary Commission of the United States; the public and private enterprise and generosity shown; the organization of the Medical Department, by the improvement in the construction of

field and general hospitals, in the transportation of wounded by the ambulance system of railway cars, transports and wagons, in the equipment, dressings and medicines, in the hygienic measures of food and clothing, have been given to the world. Data have been furnished, upon which improvements in old systems can be formed, and which deservedly call forth admiration.

The important, zealous and liberal part taken in this humane work by the women of the North is generally known; but the part enacted by our Southern women is a tale yet untold, save in their own land. There it is known, that by them relief societies, way-side homes and hospitals were established, organized and supplied. In our pinched necessity our women, to furnish our half-fed, half-clothed and ill-shod men, sold their jewelry to provide food and shoes, stripped their houses of curtains and carpetings to give covering, and robbed their wardrobes of linen to bind up wounds. Luxury, ornament and ease were sacrificed to patriotism, which cheerfully adopted privation, discomfort and work. Our relief societies were under the control of the mothers of our soldiers; our hospital wards were in charge of matrons, whom the fortunes of war had driven from homes of wealth and refinement; our way-side homes were attended by young ladies, who served the way-worn soldier with food, or supplied him with clothing stitched by their own hands. The wounded soldier could always find an open door, a mother or sister to give welcome, to nurse with care, and to hasten him to his command when healed. Our whole country was a net-work of public and private charities; and notwithstanding the difficulties which surrounded the government, the hospital organization was admirable. Essential material and supplies never failed; ventilation, cleanliness, cubic space, location, construction, were duly considered and well exemplified in the large hospitals found in the several military departments, with capacity varying from 1,000 to 3,000 beds. The medical staff was efficient, the attendance ample, and successful results will challenge competition with any other military hospitals. An estimate can best be formed of the good effected by way-side homes kept up from private sources under the management of ladies, when with figures at hand, I can state that, during the existence of the home at Columbia, S. C., over 70,000 men were fed and lodged in passing through the city. In the other States similar institutions have effected equal good. Medicines made contraband were difficult to procure, yet ladies on the borders would risk imprisonment and

brave danger to furnish them concealed in their clothing; and even the little girl, not forgetting the necessity of the hour, has been known to bring her doll not a useless puppet, but well stuffed with morphine and quinine. The watchful care and interest taken to supply the wants of the soldier, and the intelligent nursing by our women, produced in great degree the success of treatment in our hospitals, and diminished the sufferings of four years of war with its attendant horrors.

To compare the arms and missiles in wars is of interest to the military surgeon, as bearing an influence on the character of wounds, the treatment adopted and the results obtained. The rifle gun was universal to the Prussians, the Austrians and their allies; modified forms of guns and the projectiles existed, but the differences in injuries, *cæteris paribus*, were not to be distinguished. Rapidity in loading from the breech enabled the Prussians, with the needle gun, to fire at close range in making or receiving an attack, and thus in a shorter time more wounds were inflicted. The undiminished velocity would also, under this condition, produce proportionate effects; but, unless at the distance of a few paces, could not be recognized. I hold in mind two cases in the Confederate service, a General and a Major; the former wounded at Chickamauga, the latter at a gap in the Blue Ridge; both received comminuted fractures of the thigh, inflicted at a distance of over 600 yards; in the one, amputation high in the upper third preserved life and furnished a specimen of fractured bone five inches in length; in the other, a ball from a sharp-shooter impinging on a line inferior to the great trochanter, passed through the limb from before backwards, splitting off the trochanter and producing fracture of the neck, from which, in the effort to preserve the limb, death resulted. The wounds inflicted by the Enfield, Springfield, Austrian, Belgian, Saxon and Prussian gun at 100 paces or 500, present little practical difference to the surgeon, as under similar circumstances the injury is of corresponding severity and gravity. In a report of a late trial of rifled guns at target practice, the needle gun holds a place as high as the Sharp for penetration, and stands only second to any other breech-loader of equal calibre; the Roberts gun of more recent invention was superior. The Spencer fires more rapidly, and in lightness and finish is far superior, but inferior in calibre and more liable to get out of order. Great weight with clumsiness of style are the objections to the needle gun of the Prussians, but in this age of rapid improve-

ment for the destruction of life by fire-arms, these conditions will be changed. The ball differs from the Saxon, Austrian, Enfield, Springfield and other specimens of rifle missiles in my collection, which are cylindro-conoidal, with the apices more or less ovoid, with the bases hollowed into deeper or more shallow depressions, and the cylindrical portion surrounded by one or more grooves. In length, these projectiles vary from two to the fractional part of a line, and by weight, from 450 to 500 grains. The apex of the Saxon bullet is clipped off, and differs also from the Austrian in having the depression deeper and more narrow, and one instead of two grooves. The Saxon is two or three grains heavier than the Enfield of 450 grains, and the Austrian is from fifteen to twenty grains lighter than the Springfield of 500 grains. Of the round ball used by us in the first year of the war, and weighing from 60 to 75 grains less than our smooth Enfield, I met no examples. The Prussian ball, smooth and solid, without depression or groove, and weighing between 485 and 490 grains, may be described as two cones united at their bases. One cone is truncated, and as far as the base is fitted into a resisting paper capsule of thick pasteboard; the other is left exposed in the receptacle, from apex to base. An egg elongated towards the smaller end, with the point cut off and placed into an egg-cup, will convey the idea. In diameter, the ball is less than the bore of the gun, whilst the paper capsule corresponds to it, and when propelled fills the rifles, thus preventing fouling and loss of force. When projected, the larger and heavier portion of the ball moves forward, and it may be that this condition produces less tendency for revolution on the long axis, and greater for striking in an oblique direction. If the flight is thus influenced, loss of impetus from more resisting surface, decreasing the velocity, would cause more frequent lodgment of this projectile than with those which move with the smaller end forward, and this appeared to be the case. Change in the form of this ball when lodged is of interest; and the striking in an oblique direction, which has been given as a cause, does not, in my opinion, serve as the explanation. In my private collection of extracted missiles, and in the many instances in which I have examined cylindro-conoidal projectiles which have been lodged, no matter how great the deformity produced, or how great the irregularity, the departure from the original form was never such as to efface recognition. Some characteristic trait remains to the Enfield or Austrian ball, whether it has impinged directly upon the long axis, from apex to

base, or upon its circumferential portion; with the Prussian ball, changes occur so great, that there is no resemblance to original form, and against bone I have seen specimens so flattened as to be readily mistaken for the round ball under similar circumstances.

The *borer* was found highly useful for extraction in these cases. This instrument is a modified gimlet with metallic slide, which serves to protect the soft tissues by being placed over the screw-point in the course to the ball; as the screw enters the lead, the slide moves upwards, marking the degree of penetration. The forceps known as American, so extensively employed in our war, was generally used and found efficient. My experience with this instrument showed two inconveniences in the introduction—the points often became engaged in the tissues, thus producing difficulty of entrance and destroying sense of touch; the oblique direction of the prongs to the blades causes the points to diverge, and, when engaging a peripheral portion of the metal, gives rise to frequent slippings in the combined traction and rotatory movement made to extract the ball by rolling it from its bed. To obviate these difficulties, I modified the instrument after the manner of the lion forceps, by placing two prongs directly at right angles to each blade, so that on closing the handles, which are made shorter, the four points came directly in contact (instead of passing), and a blunt round extremity is made by the two prongs at the end, which do not engage the tissues and well serve the use of a probe. The shorter and stronger prongs, immediately below the longer, which form the bulbous extremity, serve as additional attachments into the metal and produce less liability to slipping and twisting of the handles; and at the same time more power can be exerted in the line of traction, as power is lost in divergence and obliquity, the four points acting on opposite surfaces in a line perpendicular with the blades. In the erratic and eccentric course made often by the round ball from the smooth-bore, the older surgeons had more extraction to perform than those of later years; yet in what consisted the utility of the long and heavy ball-forceps left by them to still fill up important space in a field-case, it is difficult to explain. When a ball is imbedded over four inches, unless penetrating the head, abdomen, pelvis or thorax, it is an exception, and then *extraction* is not often the rule. The scalpel used with discreet boldness, and the sharp-pointed short forceps found in every pocket-case, will in far the majority of cases be the most useful instruments for the extraction of balls. In such instan-

ces, where iron balls or fragments of shell are lodged, forceps with very broad duck-bill beak, or the elevator and scoop, with judicious discretion, will be found the readiest means to accomplish the end. Search for balls should be made as early as possible, when clothing, position and evidence of the wounded can be given to assist, and when the wound is not inflamed and nervous shock dulls sensibility. When the possibility arises in the necessity which always exists for the extraction of balls, delay presents difficulties to the surgeon in the swollen, painful and irritable part, and danger to the patient in the suppuration, ulceration and nervous exhaustion. Imbedded balls are seldom innocuous in any tissue and in any lapse of time; fatty tissue perhaps presenting the least evil effects from lodgement. The statistics of M. Hutin, of 4,000 cases at the "Hotel des Invalides," show only twelve cases exempt from trouble. My own experience does not recall an example of no inconvenience arising from the cylindro-conoidal ball, and two only from the round; the greater angularity of the former over the latter, produces greater irritation to surrounding tissues and less tendency to become encysted. The search for balls in bone, or in their vicinity, presents often great difficulty; in detecting the metallic from osseous substance the probe of Nélaton, with its unglazed porcelain bulb, will show the difference by the leaden mark. When the usual means have failed in cancellated bone substance, such as in the foot and pelvis, and in the articulating surfaces of the knee and ankle, in my hands this probe has been of great service, and similar experience on the part of German and American surgeons verifies the utility of this little instrument, which should occupy a place in every military field-case.

Injuries from shell, solid shot, canister and other projectiles of field artillery, did not differ in type or trait from those so often described. The field pieces were not generally so heavy as those used in our war, and the magnitude of wounds from the missiles was proportionately less; and the terrible mutilation inflicted by the use of heavy guns, such as was seen at Charleston, Vicksburg, Richmond and Petersburg, did not occur. Wounds by bayonet and sabre in modern battles have been in small proportion to others, and the improvements in long-range guns have more recently given further decrease to this class of injuries. Breech-loaders, from the facility of firing at very close quarters, will still further diminish the number. In assaults upon entrenchments, these wounds at times occur, as seen at Jonesboro', Georgia, and Nashville, Tennessee; but in open

field such injuries are rare, and in the German war only one example came to my knowledge. Circular No. 6, issued from the Surgeon-General's office of the United States, giving a record of these wounds for a period of three years, shows 105 by sabre and 143 by bayonet, and of this very small number, one-third did not occur in battle.

The examination of a gun-shot wound should always be complete, that another may be prevented; the first examination, if possible, should be the last. Bandages and dressings on the field are generally useless, serving often to cover a lesion which careful examination at the Field Infirmary would not have passed to the General Hospital as a dangerous injury. Frequent dressings on the field are objections to the Prussian system; and to avoid hereafter the evils of these hurried applications, note-books will be furnished to the medical officers, upon a leaf of which, attached to the clothing of the wounded, will be recorded what has been laready done or what may be further necessary at the Infirmary. There a more detailed history will be added and forwarded with the cases, to assist the surgeon at the General Hospital. This regulation can be made practical, and should be adopted by all army medical departments, for the good of the service in saving time and material upon the field, for the benefit which will be derived by the soldier in the more judicious treatment of his wounds, and for the more full data which will be given to base the history of important cases.

The direct course pursued by the modern missile operates favorably in the exploration of wounds, and the track, made less frequently sinuous than with the older form, gives more rapid healing and more free exit to pus. Suppurative action of contused wounds is ample without increasing it by irritant dressings, and the old practice of placing pledgets and meshes, to cause free drainage and "healing from the bottom," was too much in vogue with German surgeons. Authorities have written too much upon the necessity of healing by granulation; too little upon treatment by first intention. My belief is, that more injury is produced by the former than the latter, and whilst irritation and inflammation were induced by local means, the bleeding, purging, sweating and vomiting used to subdue it, certainly made the "healing from the bottom," so much spoken of, slow and sure, if the patient survived the means of cure.

Suppuration in a gun-shot wound should be made to cease as early as possible, by the withdrawal of all substances and material which provoke it, and by the use of those remedies which relieve

pain and give support. The prejudices and doctrines of the olden school linger still, and the pathological ideas in which Germany has effected so much to light up the principles of inflammation with others, appear more frequently lost sight of by her own surgeons. General bleeding was not employed, but purgatives were too frequently used when mild aperients and enemata would have better fulfilled indications. When large granulating surfaces are exposed, or where an amputation of a limb has destroyed a large part of the excretory functions of the skin, the kidneys should be most carefully watched. As in burns and scalds diuretics exert a most beneficial effect in controlling febrile action, so does this class of remedies effect great service, combined with the use of mild diaphoretics. Dangerous internal congestions occurring less often, the administration of arterial sedatives can be greatly avoided. Nervous sedatives should be freely given, whenever pain provokes local or general irritation, and the influences of these agents in procuring physical and mental rest should always be regarded by the military surgeon of primary importance. Resolution is brought about sooner by stimulating than depressing agencies, and those remedies should be used which will contribute least to deprive the economy of the support it needs.

Success was principally due to following this mode of treating inflammation in our war; and had stimulating treatment been less feared by the German surgeons, the low energies which the few days of suffering on the battle-fields had produced, could have been aroused to greater reparative power. The physical forces in so short a war had not been reduced, as in ours, by the influence of climate, food and clothing; and where at times intense heat and cold, insufficiency of rations and want of equipment operated in this respect. In profuse suppuration, gangrenous inflammation and low forms of disease, if spirit and generous diet had been given, as with us, healthy action could have been more speedily restored, and results would have been more successful. As it was, wine in small quantity (claret or German) was the rule; and low dieting, from the abundance which was supplied, was a preference rather than a necessity. The dressings contributed also to prolong suppuration, by increasing local irritation, and were the sources from which sprang the low forms of inflammation so frequent in their hospitals. The bed of charpie, lint and bandages, in which Continental surgeons, civil and military, still envelope fevered and festering surfaces, serves to increase ulcerative action, gangrenous inflammation and secondary hemmorhage.

Infection is promoted from the uncleanliness produced by ointments and poultices, and in military hospitals these applications should be discarded. Cleanliness should hold the highest grade in the treatment of wounds, and when to this simplicity, dispatch, neatness and efficiency, can be added the facility of being always able to apply the the water dressing, the late classical remedies should be laid aside. This treatment was tested in our war, and the experience of every surgeon who used it judiciously will verify the utility. The cold-water dressing was applied to a limited extent in the German war, reliance being placed in the older methods; the use of warm water was far more general, and the application from novelty and usefulness merits description. This mode I would call the *treatment* by *submersion*, and consists in submerging in warm water for a continued period the part subjected to acute inflammation. Bath-tubs of sheet zinc, of different sizes, are used for the application of the dressing, and straps across support the limb when necessary. Two forms are principally made: One oblong, similar to a fracture-box, with an end cut off sufficiently oblique to permit it being placed as high as the armpit or buttock; the other triangular, six or eight inches in width and ten or fourteen in height, with the apex attached to a board stand by a hinge joint, so as to allow the base to be elevated at any angle which may be required to give comfort. This latter form is used in injuries of the foot, ankle and elbow, and by the stand giving firmness can be placed in the bed or at the bedside, without fear of being turned over. Both forms are fitted with lids, into which is an opening sufficient to allow ready adjustment, without producing pressure upon the limb when submerged. By means of a stop-cock the water is readily withdrawn, and a new supply added in such quantity and of such temperature as may be desired, without disturbing the position of the patient by moving the apparatus. In phlegmonous inflammation, in synovitis, in adenitis, in injuries of joints and sheaths of tendons, great service is rendered. I have seen the good effects exerted in subduing inflammation in twenty-four hours, and in wounds of the foot and hand implicating bone and serous tissues no evil results from the continuous application for as many days. The sedative action of the water in these conditions, the absolute rest of the parts, and by far the most important effect, in my opinion, the exclusion of air, renders this system of great utility. Frequent changes of dressings are not needed by the water retaining temperature for several hours, and other evil effects are avoided by this clean

and ready method. In burns and scalds the remedy has been used with decided advantage for several years in Germany, and has been especially employed at Vienna. By adding to the water such sedatives, stimulants, tonics, antiseptics and other agents as may be needed for particular conditions, we secure great assistance in carrying out the indications which may be presented. In recent wounds, where the effect of reaction is to be held in bounds by the constringing effect of cold water, and by the depressing power induced, no other means now known bear comparison. On the battle-field and infirmary, where evaporation is needed to bring about the good effect of the cold-water dressing, the system by *submersion* would not be applicable; but in those conditions where inflammation may be said to be subacute, and reaction less violent, cold water, substituted for warm, would serve an important end. The application of ice too freely to that form of inflammation which has existed for some time after reaction, such as seen in wounds sent from the infirmary to the general hospital, was a fault in the treatment made by the Austrians at Prague; and, I have been informed, was also committed at Vienna. Ice applied in india-rubber bags to an extent such as was used, must in frequent instances have produced depression, which resulted in loss of vitality. The employment of hot-water compresses enveloped in air-tight material, when fomentations were needed, was not resorted to near so frequently as with us. Poultices were more often applied, and, to retain heat and moisture, paper made impervious as oil-cloth was substituted as a wrapper, and by cheapness could be replaced at each dressing. This method prevented the fœtor which, even with great cleanliness, always clings to material that has been retained for several days. As in cold-water dressing injudicious use can over-do good influences by producing too much depression, so with the *treatment by submersion;* I have seen the pale, spongy granulations, and sodden tissues which retard healing, occur by unguarded application. The surgeon must watch the changes he produces even by simple measures, for the poultice can become so powerful an instrument in careless hands, as to destroy the limb or life he has attempted to save.

[It affords us great pleasure to announce that Dr. Jno. T. Darby, now in Paris, has been recently appointed to a Professor's Chair, probably that of Surgery, in the Medical Department of the University of South Carolina at Columbia. By a recent enactment of the Legislature, the old College of Arts and Sciences at that place,

known and honored throughout the South, has been constituted part of a State University, which is to be completed by the establishment of the various other departments requisite to a University. One principle seems to have been recognized by the Legislature, which receives our highest approbation, and deserves general imitation, viz., the Professors of the University are to be salaried officers, and thus enabled to exalt the standard of medical education, freed from all pecuniary fears as to the number of their classes, and dependent for their reputation on the *quality*, rather than the quantity, of their graduates.

Prof. Darby promises a third and concluding letter for the next number of this journal.]

London Correspondence.

Lewis' Library, 136 Gower St., London,
May 21st, 1867.

The greatest event in the medical world during the past two months, which has been canvassed at all the coteries of medical men in the United Kingdom, and which doubtless will cause some little conversation across the Atlantic, has been the expulsion of Mr. Isaac Baker Brown, Fellow of the Royal College of Surgeons of England, from the Obstetrical Society of London. Your readers will probably be better judges of the merits of this case than the medical men who are concerned in it, and I feel that it would be out of place in me to attempt to bias by any statement of mine your readers' calm and dispassionate judgment. It will not, however, be out of place for me to give you an outline of the affair, and to tell you the rumors and facts that are canvassed by the profession. I may mention that the *Lancet* seemed all along to have espousud the cause of the prosecutors of Mr. Isaac Baker Brown, viz., the Council of the Obstetrical Society. The *British Medical Journal*, which is now edited by Ernest Hart (who has left the *Lancet*), seemed also to side with the Council. The *Medical Times and Gazette*, which is edited by Dr. Druitt, whose *Surgeon's Vade Mecum* is a monument of industry and ability, took a less prominent side, but still leaned somewhat to the side of the prosecutors of Mr. Baker Brown.

The *Medical Mirror*, which is edited by your present correspond-

cnt, while condemning any operation on any individual without the consent of the said individual, stated that, in its opinion, it could not be *proved* that Mr. Baker Brown had ever performed clitoridectomy without the consent of a patient. It also argued that, even if such a thing had taken place, and allowing that this would have been a breach of the liberty of the subject, to be expiated by a legal action for damages against the operator, it considered that the matter was entirely beyond the jurisdiction of the Obstetrical Society, which society is simply a confederation of gentlemen interested in the practice of obstetrics. It stated that Mr. Baker Brown had made a name for himself second to none in the field of surgery, that his reputation had been made by his skill in the performance of ovariotomy, and that, considering his long surgical service, it was unmanly and unbrotherly of his brother obstetricians to attempt to do him an evil turn. It seems, however, to bear out the truth of the old saying, "Save me from my friends!" for while one would not have been astonished at a *clitoridectomized* woman striving to obtain damages for the loss of her "unruly member," if she had been deprived of said member against her will, one certainly hears with astonishment that his brothers were the first to pick up and cast stones at the enthusiastic operator.

The *Medical Press and Circular* seemed to hold the same views as the *Medical Mirror*, but the great body of the profession did not seem to see that a person might be strongly imbued with the feeling that the liberty of the subject was the highest consideration, yet that, to prove this, it was not necessary to expel Mr. Baker Brown from the Obstetrical Society.

In my opinion, Mr. Baker Brown has been an ill-used man in this matter; but I am glad to say that medical opinion is assuming a healthier tone, and that it is beginning to dawn upon the minds of the profession that one may object to clitoridectomy being performed without leave, and not require to attempt the ruin of a professional brother to vindicate one's opinions.

I will conclude my remarks on this "Baker Brown" controversy, by simply stating that a testimonial has has been presented to him by 300 medical men, noblemen and gentlemen, as a token of esteem and as an acknowledgment of his great surgical talent as an ovariotomist.

Medical opinion in London is beginning to kick at the trammels placed upon medical education. It is felt that the teachers at a

"school" are not the only individuals in the profession who are able to instruct, and that there are many men dotted here and there among the profession, who could give much sound information on many subjects. An influential section of the profession would like to see private lecturers' certificates taken at our examining boards, so that a healthy competition of educational talent might be the result. The lecturers at public schools go on for life—or until they become worn out—in the same old track, giving the same lectures year by year. It is felt that, in this age of scientific progress, more celerity is required in thought and opinion. Competition between teachers would bring science more quickly to a "head;" and if young men, instead of entering at a particular institution and sitting under its professors—be they hum-drum or threadbare—were allowed to enter at one hospital for one subject, at another institution for a different, and at a private lecturer's for a third—it is felt that our rising medical men would skim the cream of the medical intellect of the metropolis and go well armed and well prepared for the medical battle of life. Medical thought cannot be said to centre in any particular locality; and the newspaper press and the cheap postage have done so much in giving publicity to the opinions of the *savans* of all countries, and have permitted such an interchange of medical thought and such a comparison of facts, that no solitary town or province, by virtue of a venerable pile of bricks and mortar in the shape of a medical college or school, can regard itself as, *par excellence*, the leader of medical opinion and the only fountain where knowledge springs pure and undefiled.

Dr. Richardson, the inventor of the method of hindering pain, called "local anæsthesia," by the congelation of the tissues by the evaporation of ether, is now giving a course of lecturss at his house on the value of certain pharmaceutical preparations. This is a step in the right direction in two ways: 1st, it is the beginning of other lectures by doctors unconnected with "recognized schools;" 2d, it is well that pharmacy and its progress should not be lost sight of by our highly educated physicians and surgeons of the present day.

Everybody in the medical profession in England is more or less "above the shop." The smell of the drug-room is objectionable to them, and the compounding of their own physic is a thing not to be endured. When their practice permits of it, they quit dispensing their own medicines, leaving all this sort of thing to the apothecary and the chemist. Some doctors begin as "pure" physi-

cians, and never do anything with drugs, but write prescriptions. It thus happens that not a few prescriptions go to our pharmaceutical chemists, which are, to say the least, "eccentric." Chemical decomposition and foul mixtures may be nasty, yet wholesome; but, as a rule, patients won't take nauseous medicines. Thus the most ingenious prescriptions, matured by considerable physiological knowledge, may be worthless to the patient, owing to the want of practical knowledge of the decompositions, the taste and the appearance of the mixtures prescribed. If, however, the practical knowledge of drugs may be dying out among our highly educated "Jack of all trades and Master of none"—the modern medical student—I am glad to say that, in addition to a certain few among the medical profession, there are a great mass of hard-working *Pharmaceutical Chemists* who formed themselves some years since into a powerful society, and who give a license as pharmaceutical chemists. These gentlemen control the education of the dispensing chemists and the druggists of England and Wales. I cannot speak too highly of their industrious energy. Their course of study is exceedingly good. Botany, Chemistry and Materia Medica are their great *fortes*, and to this rising body we owe *all our practical improvements* in Pharmacy. These gentlemen have appreciated the fact, that drugs must be prepared for the public in the same way that food must be well cooked for the table. Good cooking hastens digestion, and good pharmacy expedites the cure.

A brilliant *conversazione* was given the other evening at the Pharmaceutical Society's rooms, in Bloomsbury Square, at which many *savans* were present, and at which the newest chemical and pharmaceutical preparations were shewn, besides a beautiful selection of growing medicinal plants. I may tell you as a fact, that our *British Pharmacopœia* that is just out, which is supposed to be the bantling of our highly paid Medical Council, is nothing more nor less than the child of the Pharmaceutical Society. The Professors of the Pharmaceutical Society have worked at the Pharmacopœia, and the conglomerate wisdom of the Medical Council reaps the credit, which credit ought, at any rate, to be subdivided among many individuals not on the august Medical Parliament.

Our Medical Council was formed in 1858, in the following manner: Eighteen delegates were appointed to it from the various universities and corporations, and six crown nominees were also added. The delegates from the corporations are sent by the governing bodies,

and not by the great body of the graduates or licentiates of the corporations, and the crown nominees are certain picked men, who hold some of the highest positions in the profession. The Council looks after the education of the medical student, and supervises the examinations for diplomas and degrees. It keeps a register of duly qualified medical men, which register is supplied to all law courts. This register is the legal voucher for a man's qualifications as a legitimate practitioner, and unless a man's name appears on the register, the usual fees cannot be legally recovered. Quacks and people without degrees or diplomas can still practice, but they cannot assume any medical title without being liable to punishment. The Medical Register is therefore a simple list of duly qualified medical men, and it enables the public to find out without difficulty whether the doctor they are employing is qualified, or is simply an impostor. For the trouble and expense consequent on keeping these books of registration and seeing to the various duties imposed by the Medical Act upon the Council, certain fees are levied by the said Council, and these fees are levied on the doctors. The fee is £5 for primary registration and five shillings for every extra diploma. Some of our medical men have half a dozen diplomas. Four are common, and three are almost usual. The Council is a very highly paid body. It sits for a few weeks each year, and each member receives about ten guineas a day. I cannot say much for their debates. They may have interested themselves, but the great body of the profession has not been satisfied with the doings of the Council. It has been felt that the Council does not represent the working practitioners, but simply the *élite* of the profession. I have therefore proposed that twelve additional members shall be elected by the votes of constituencies of the registered practitioners throughout the Kingdom, and I have had a petition prepared for presentation to Parliament, asking for such representation. This petition has met with considerable favor with the profession, and I trust that a reformed Medical Council may eventually be the result.

I omitted to mention, when speaking of Mr. Baker Brown's expulsion from the Obstetrical Society, that rumor says that the Fellows of the Society were canvassed to vote against Mr. B. Brown, and that voters against Mr. B. B. were *fêted* by the party adverse to him, and lionized during their short visit to the metropolis from their provincial homes. I suppose this must be taken "*cum grano salis*," but it displays in a marked manner, the excitement and the feeling that this affair has caused in London medical circles.

Local anæsthesia has been very much lauded, and some people here thought that it would do away with the necessity for chloroform; but, in my opinion, men's minds are changing somewhat in their estimation of the value of local anæsthesia, and chloroform is better appreciated than ever. In some little operations, the freezing by means of ether may all be very well; but for large operations it is a doubtful agent. Even in teeth-drawing, local anæsthesia is not thought much of by a very eminent surgeon dentist whom I could name, and whose opinion is a most valuable one. The freezing of the gum is exceedingly painful, and it would appear that between the pain of extraction and of local anæsthesia, there is not much to choose. Some people are afraid to give chloroform for such a simple affair as tooth extraction, on the ground that it is not right to risk the loss of life for so trivial an operation. Then there are others who do not fear, and who give chloroform, even in tooth-extraction, to a very considerable condition of narcotism. I personally contend that, with the rarest exceptions, such as heart disease *et hoc genus omne*, chloroform should be given, but to a rational extent and according to the nature of the operation. I have known of dentists who have given, for the extraction of an odd tooth or so, as much chloroform as ought to be given for an amputation. This is not only absurd, but it betrays ignorance of the use of chloroform, which arises from a faulty system of medical education. The medical student is crammed with all sorts of book learning, but he is taught nothing practical; or if he is, he is taught five per cent. of practical matter and ninety-five per cent. of book rubbish. This is my experience of London Medical education, and having undergone my curriculum for diplomas in a London college, I am a competent witness. I have found out that one's real medical education commences when one has obtained one's degree or diploma, and that the old maxim "Practice makes perfect," holds nowhere else so good as in the medical profession. At college I used to witness each Saturday great operations, and the late celebrated Dr. Snow used very frequently to administer the chloroform; but all that we students used to see, and all we could possibly learn was, that an apparatus was placed before a person's mouth, that the temporal artery was felt by the chloroform-giver, and that the patient went off into a heavy, death-like sleep, which was kept up by the administration of more chloroform. I never heard a lecture, as a student, on the method of administering chloroform, or giving any idea how many stages there appeared to

be in its effects. I have since learnt that one can take a few sniffs of chloroform and retain one's faculties and never go into any sleep at all, and yet be quite insensible to the pain of tooth-drawing, for example. This is a great point. Then again, a few sniffs of chloroform during labor, without any dangerous narcotism, relieves to a miraculous extent the pain of labor. A great deal has been said about mixed vapors, but the long and short of most mixed vapors is simply that some innocuous vapor is mixed with chloroform, and the combination is given to a large extent. The first effects of chloroform take place, and the *mixed* vapors get the credit that the chloroform alone possesses. The vapor of prussic acid is a deadly poison that cannot be inhaled with impunity. About the mixture of chloroform with prussic acid, I therefore am not speaking in the above remarks. The best dentists in London know full well the value of the first effects of chloroform, and, as one distinguished dentist observed, "the sensation of having a tooth taken out under the *first influence* of chloroform is just the same as one experiences in *taking off a glove* from one's finger. Dr. Kidd's work on chloroform is, in my opinion, the best book on chloroform, and as patients usually pay by results, it behoves every practitioner to make himself master of the use of such a magnificently soothing and pain-killing drug as chloroform.

Dr. Forbes Winslow, the eminent "alienist" whose work on "Obscure Diseases of the Brain and Mind" is so well known, has recently issued a little volume on the effects of light on the human system. In England no one gets too much light, but there are countries where one may be rather oppressed with the powerful rays of the sun. While therefore every one will endorse Dr. Winslow's tribute to the value of light as an agent for health, both of mind and body, one will also remember that there may be too much of even a good thing.

It seems pretty certain, from recent lectures and experiments, that tubercle is capable of being inoculated with the vaccine lymph. While therefore one steers clear of the frying-pan, in the shape of small-pox, one has a chance of getting into the fire of phthisis, unless our vaccinators are careful about the pedigree of their lymph. Vaccinators in England are underpaid, as indeed most medical men are, except those in the very highest practice; but I certainly consider it to be an unwise economy, to prune the salaries of the individuals upon whose care and attention the constitutions of the future race depend. It strikes me that the quality of the lymph employed

ought to receive greater attention than it does from our doctors The entire medical profession in Great Britain is suffering from the incubus of unpaid medical labor. It is worth the while of certain medical men in London and elsewhere, to take the medical appointments at certain leading charities without payment, as it has been found that such appointments lead to business. In consequence of this answering at certain places, a perfect deluge of imitators have arisen, and now-a-days a medical man has to slave away at public appointments for nothing, with the vague and indefinite idea of getting into notice. As so much work is done for nothing, the pay of doctors is measured accordingly, and the selfishness of the few causes the ruin of the many. I hope some day medical men will awake to the fact, that the laborer is worthy of his hire. In conclusion I will only remark, that I trust some liberal postal arrangement may be adopted between Great Britian and the United States. M.S. for press in this country goes by book post; while, to send M.S. for press to America, the very expensive letter post must be used.

A. T. M.

Communicated.

Messrs. Editors:—I have been reading the proceedings of the American Medical Association, and find that a hyperborean "friend and brother" has placed the medical profession of this city under so much obligation, that it would be superlative rudeness on our part to fail in *expressing our appreciation of his conduct.* This gentleman "chanced to be" one of the Committee on Nominations, and became sponsor for New Orleans in the matter of extending an invitation to the Association to hold its next meeting here. He announced a sort of claim of paternity (jointly with his "excellent father") over many of the physicians of this city, by virtue of former relation of preceptor, and was so struck with the beauty or appositeness of the arrangement for "honoring New Orleans," that he shed tears. He tells us that these lost globules were "tears of joy," but for all that, their escape must have been accompanied by a certain degree of inconvenience or embarrassment to himself: at least, my boyish reminiscences so teach me to think, for of late years my eyes have been as rainless as Egypt. This gentleman likewise made in his

"eloquent speech" allusions: first, to a part of our population who have not yet so far "emancipated" themselves from true feminine delicacy as to feel flattered by public encomiums; secondly, to our "flowers and mocking-birds." The former are worthy of all praise; the latter, in my opinion, possess no more claim to consideration in point of personal character, than those human analogues, whose ears turn to every point of the compass to catch and re-echo the notes of others. Let us then thank Dr. Yandell for his remembrances of, and his interest in us, as indicated in his speech; for his "o'er true" allusions to our empty pockets; for the sacrifices he must have made in hob-nobbing with "Massachusetts and Michigan," that "honor" and good might accrue to us in the matter of entertaining Massachusetts and Michigan in our humble abodes.

Let us also, when the proper time arrives, extend to the American Medical Association a cordial invitation to meet here; but let us all not forget, that no invitation can be cordial unless it is *spontaneous*.

New Orleans, June 6, 1867.

Legal Investigations.

On the 18th of April, the Coroner was notified to hold an inquest on the body of a colored woman, supposed to have been poisoned by a woman, also of color. The examination of the *cadaver* was made by Dr. Nichols, the City Physician, and the organs to be subjected to a chemical analysis deposited in a vessel and conveyed to the University. The Coroner, perplexed to know what disposition to make of them, as the city does not employ a chemist, represented the case to the Attorney General, who, having no legal authority to defray the expenses attendant upon the necessary investigation from the City or State treasury, proposed to go with him and consult the Auditor of Public Accounts. That official, a man of sense and sound judgment, deeming the matter of interest to the State, consented, at the request of the Attorney General, to pay the cost of a legal investigation.

These preliminaries settled, the Coroner had an interview with Mr. Laster, the able chemist at the Charity Hospital, who consented to make an analysis of the suspected organs for the small sum of two hundred dollars. Such are the facts as they happened, upon which we would comment, and to which we would direct the serious attention of the public.

As similar cases have occurred before, perplexing the Attorney General, the City Physicians and the Coroner; Drs. Bayon, Caire and myself petitioned the City Council to appoint an expert chemist, suggesting Mr. Laster for the position, with the moderate salary of six hundred dollars per annum. Our petition was supported by arguments which we supposed were sufficiently convincing, but it was not even taken into consideration, though it was reasonable to conclude that a matter of such vital importance to the public would have enlisted the serious attention of the City Council.

Though not inclined to censure, I deem it my duty, as a public officer, to inform the people of New Orleans of this culpable indifference of the city fathers, regarding a matter so highly important in the administration of criminal justice. Had the Auditor refused to defray the expenses of a legal investigation with the funds of the State, what would have been the result? That no clue would have been obtained for the crimination of the accused, and her immediate release would have followed. What security to society, and what encouragement to poisoners, is thus offered!

Let me add a few words on the manner of conducting legal investigations in our State, reiterating that my object is not to throw blame on any one, nor to make *unprofitable*, and still less malicious criticisms, but to deprecate a principle which I regard as pernicious. At the time I was City Physician, I had frequent opportunities of assisting in the chemical analysis of organs of persons suspected of having been poisoned. My attention was first attracted by the carelessness with which these operations were conducted. Persons were allowed in the room, with no better object in view than to satisfy their curiosity, some standing over the boiler in which the organs were macerating during the repeated, though brief, absence of the operator, whose professional duties called him frequently to his drug store. Under such grave circumstances, involving not only the life of the accused but also his honor and that of his family, no precautions taken can be too great, in order that justice be properly administered, and that no scruples arise in the minds of the jurors for imposing the just penalty due to a crime so atrocious as to admit of no extenuation.

It is the duty of the Legislature, when it meets again, to bring this important and grave subject under consideration; and, taking the advice of competent men, to determine what rules should govern the expert chemist in the performance of a task so delicate and so

full of *responsibility*. It would also be desirable for the press, so powerful when unanimous, to add its weight to the call which we here make to our legislators.

C. Delery, D. M. P.

Obituary.

The Late Dr. Thomas Hunt.

Dr. Thomas Hunt, President of the University of Louisiana, died in the city of New Orleans on the 20th of March last. In announcing this event at the time, the whole press and the various associations with which he was connected, vied with each other in expressing regrets for his death, and passing high encomiums upon his character. But these notices are usually brief. It is due to the memory of a man so distinguished and so useful, to the profession of which he was so conspicuous an ornament, and to the community in which he was held in such universal esteem, that a more enduring record of his life should be preserved.

The family of Dr. Hunt came into the United States from the British West Indies. His immediate ancestor, also named Thomas Hunt, who settled early in life in Charleston, S. C., was a son of Robert Hunt, who had been twice Governor of the Bahama Islands, and President of the King's Council, at Nassau, in the island of New Providence, when these were important possessions of the British Crown. The first Thomas Hunt became a lawyer of distinction, a planter, and a member of the Legislature of South Carolina. He was father of five sons, of whom Dr. Thomas Hunt was the third. Four of the brothers emigrated to New Orleans, and for more than a third of a century have been among the leading citizens here; the subject of this memoir as a physician, and Theodore, Randell and William as eminent members of the bar.

Dr. Thomas Hunt was born in the city of Charleston, on the 18th of May, 1808. His mother was Louisa Gailliard, of a distinguished family in that State. Her brother, John Gailliard, was for a long period Senator in Congress from the State of South Carolina, and for six successive Congresses, from the 13th to the 18th, inclusive, was chosen President pro. tem. of that body.

It was a great advantage to the boy that his early education was

under the care of so accomplished a scholar as Bishop England. His studies were early directed to the law, and he attained a thorough knowledge of the principles and history of the American Constitution; but his readings embraced all branches of literature and science. Among his tastes first developed was a love for the classics, which adhered to him through life. He was particularly noted as a Greek scholar, an accomplishment rarely possessed by any whose lives are not exclusively devoted to classical pursuits. Having selected medicine as his profession, he prepared himself by a course of study in the University of Pennsylvania, from which he received his degree of Doctor of Medicine in 1829. Returning to Charleston, at first with a view to practice, he decided on completing his education abroad, and accordingly went to Paris, the most renowned seat then, as now, of medical science.

He remained there about eighteen months, when the death of his father recalled him to Charleston, where he entered at once upon the practice of his profession. At the early age of twenty-three he lectured on anatomy and operative surgery, and taught practical anatomy. He was thus laying the foundation of a solid reputation, when one of those opportunities occurred which are seized upon by men of high order of minds, fix public attention upon them, and raise them at once to distinction. That opportunity was the wreck of the brig Amelia on Folly Island, off Charleston harbor, in November, 1832, after the breaking out on board of the Asiatic cholera, which was then for the first time spreading itself along the western shores of the Atlantic. The Amelia was bound from New York to New Orleans with a large lot of passengers. Among these, by a noteworthy coincidence, was Dr. Warren Stone, since so distinguished in the medical profession of New Orleans. The first acquaintance of Dr. Hunt with Dr. Stone grew out of their meeting among the sick on Folly Island, to be continued by an unbroken friendship through nearly thirty-five years, after they had come together again in the distant Crescent City.

The Amelia stranded on the 30th of October. The cholera had appeared on board after she left New York. She encountered tempestuous weather, and on attempting to make the harbor of Charleston, was run on shore to prevent her sinking. The number of her crew and passengers was 108, and their condition was deplorable. They were in want of almost everything, and attacked by a disease, new and the subject of great popular alarm. The crew and passen-

gers were landed, and immediate communication was made with the city. The first steps were, to direct absolute non-intercourse, except for physicians and supplies. Some of the wreckers who had boarded the vessel had gone up to the city, but were ordered back, and great numbers of this class were among the subsequent victims. The island was the private property of a planter, Mr. Alexander Milne, who opened his house and all the buildings to the sick, and furnished supplies most generously. He also suffered largely in the loss of his hands by the disease. The city authorities sent successively three physicians, Drs. Elfe, Pritchard and Jervey, who, in a few days, returned, exhausted by fatigue and labor, when Dr. Hunt was dispatched to take the entire charge. It was a highly responsible work conferred on so young a man, for Dr. Hunt was not then twenty-four years of age. It is a proof how highly he had already come to be esteemed in his profession; the result showed how well he deserved the trust, and how fortunate was the selection. A specific reason for his selection for this duty, is perhaps to be looked for in the attention he was known to have given to the subject of cholera. In the preceding July, when public apprehension was first awakened to the approach of the dreaded disease, Dr. Hunt had prepared a memoir on the subject, giving its history and all the facts known about it, and suggesting the expedient measures of precaution, to be laid before the South Carolina Medical Association. A number of gentlemen, elder in the profession, and quite eminent, had also prepared papers. That of Dr. Hunt was so full and so much approved, that it was immediately adopted. It was afterwards published by authority of the city, for distribution, and when the cholera reappeared in 1836, after Dr. Hunt had removed to New Orleans, it was again published and circulated by the same authorities, with honorable mention of the author, and references to his "intrepid" conduct at Folly Island.

He entered on the task with great energy, and went through it with unflinching constancy. It demanded incessant and painful attention, almost sleepless toil, and entailed a strain on mind and body, which after the task was over, and the responsibility ceased, materially affected his health. The scenes on the island during that pestilence were harrowing. The destitute emigrants of the brig and the outlying negroes of the place demanded hourly cares night and day. The watchfulness of Dr. Hunt was never remitted, and, with his success in the treatment of the disease, effected results which gained for

him the most grateful acknowledgements from the sufferers and his fellow-citizens, and established for him an extraordinary reputation for courage, humanity and skill. He counselled and superintended sanitary regulations, visited and prescribed for every person having any symptoms of the disease, and his methods were so successful that immediately after he took charge, the mortality among the sick fell off largely. He did this, not by the effects of medicine alone, but by winning confidence, and, by making patients more hopeful, encouraging them to take better care of themselves.

The infected brig and cargo, and all articles that were supposed capable of propagating disease, were burned by authority of the City Council, on the advice and under the superintendence of Dr. Hunt. On the 21st, most of the steerage passengers who had recovered, were, under the same counsel and care, sent forward by the liberality of the city of Charleston, in a vessel chartered for the purpose, to Mobile. The captain and cabin passengers were sent afterwards to New Orleans. The cholera was then considered to have disappeared, and Dr. Hunt returned to the city, much enfeebled by fatigue and exposure, which terminated in an attack of the disease on his own person. He was warmly welcomed by his townsmen, and received a public expression of the gratitude of the crew and passengers of the brig, "for his kind and judicious arrangements," his strict attention to prescriptions for such a multitude of patients, and the great success of his treatment, in diminishing the disease. They also presented to him a massive silver goblet, with suitable inscriptions, as a testimonial of their gratitude. It is preserved in his family as a cherished memorial of honor to their ancestor for a generous and heroic action in the cause of humanity, and a patient self-sacrifice for the cause of science.

He removed in 1833 to New Orleans. On his arrival, he found the cholera prevailing in parts of Louisiana. With unabated zeal, he went almost immediately to the Proctor Settlement, on Lake Borgne, below the city, to study and combat with the disease.

His reputation came with him to his new home, and he was shortly after elected Surgeon of the Charity Hospital. This position he held only for a brief period, having resigned it on the 1st of September on account of the inadequate compensation allowed, and the obstruction which the holding of it placed in the way of extended plans which filled his mind for the advance of medical science in Louisiana.

With this favorite purpose of his life, he entered actively into that enterprise with which his name has been inseparably connected in the history of medical science, of establishing a Medical Institute in Louisiana.

The predecessor of the present Medical Department of the University, and the germ of the University, so large in its organization and in its endowments now, was the Medical College of Louisiana, organized in September, 1834. The earliest and most active of its founders was Dr. Hunt. He was the author of the prospectus for organization, and when the Faculty was formed he was appointed Professor of Anatomy and Physiology, and elected Dean. The associate founders were Dr. Charles A. Luzenberg, Dr. J. M. Mackie, Dr. T. R. Ingalls, Dr. A. H. Cenas, Dr. E. B. Smith. Dr. Harrison, appointed Demonstrator of Anatomy, was prevented from serving by ill health, and Dr. Warren Stone, whose association with Dr. Hunt had been renewed during the first period of the previous connection of Dr. Hunt with the Charity Hospital, undertook the anatomical demonstrations as adjunct to Dr. Hunt. The introductory lecture was delivered by Dr. Hunt. It is in that clear, forcible style for which all his public efforts were remarkable, being lucid expressions of well condensed thoughts which the author, understanding distinctly himself, was seeking to make equally clear to others. The college, during its first session, matriculated only eleven students; but through the perseverence of its learned and able Faculty, it grew by private enterprise without a State endowment; until in 1843 it received from the State some direct assistance, but coupled with onerous conditions. During this period, Dr. Hunt gave up a great part of his time from a private practice that was growing large, to the duties of his various professorships, and to active efforts to have the college placed on a solid foundation as a permanent State institution.

In 1845, when the new constitution for the State was adopted, a clause was put into it establishing a State University, and constituting the Medical College then established, as a Medical Department of the University. This was followed by various endowments and grants which, besides the use of the lot and buildings, had amounted in 1861, in money, to about $83,000. These were subject to conditions, from which the State has received in return grand advantages, but it is not to be disputed, that it is from these impulses that the institution took the rapid rise which made it prosperous, until the

war supended its operations and laid waste so much of its property. It had then, in 1862, matriculated 4,024 students, and had at the closing session upwards of four hundred students in attendance.

The war broke up this prosperity, and snspended altogether the operations of the University. In the interim, Dr. Hunt had left the State and the United States; on his return the University was revived and he was elected its President. To the last he preserved his interests in its affairs, and it was from the bed, which proved his dying bed, that he wrote his last report—full of courage —recommending the same strenuous efforts to revive and extend its influences; and true to the scholarly instincts which he carried with him through life, urging the immediate organization of a Department of Letters. His was a mind, *adversis rerum immersabilis undis.*

The existence and growth of the University are, in a large degree, due to the zeal and wearied labors of Dr. Hunt, to his business energy and tact, in addition to his professional labors in the various chairships he has held. Previous to the suspension of 1862, he had held the following professorships: 1. Anatomy and Physiology. 2. Pathological Anatomy and Clinical Practice. 3. Physiology and Pathology and Special Pathological Anatomy. He had been Dean of the Faculty of Medicine, and after 1849, up to the suspension of the University, Professor of Physiology and Pathology.

While executing the duties of these professorships, Dr. Hunt took interest in the proceedings of the Physico-Medical Society, of which he was President for many years, and mixed largely in the discussion of scientific subjects. At one of the early meetings he delivered an address on his favorite theme of pathological anatomy, for which it voted him thanks.

In 1857 he was selected by the Mayor of the city of New Orleans as delegate to Philadelphia, as a member of the Convention on Quarantine, but was prevented by private reasons from accepting.

The medical profession have for more than a quarter of a century recognized an obligation to Dr. Hunt for the success with which he first introduced into the practice in this country the use of large doses of quinine as a remedial agent in yellow fever cases; and the discrimination with which he pointed out the condition and limitations for administering it. He was led to these investigations by the results of the use of quinine by French physicians in epidemics in the East, in which he discovered analogies to the yellow fever in

our Southern climate. After having, in association with Dr. Mackie, carefully tested its physiological action, he made a direct change in the application from that previously used, with such success as to establish it as one of the most useful agencies known for arresting the progress of yellow fever. The medical journals of the day conceded great credit to Dr. Hunt for the originating of this practice, which has had such satisfactory results.

In 1862 the health of Dr. Hunt became feeble. His occupation was gone in the destruction of the University—his fortunes were shattered, and the condition of his country weighed heavily on his spirits. He carried the burden of his sorrows into a foreign land to await there the restoration of the prosperity of the land of his love in which he never ceased to have a confident faith, although the time, near or remote, was shut out from his visions. He left in November of that year, and went first to Havana. His departure was at a period of deep distress in the history of Louisiana, when men's thoughts did not dwell long on the fortunes of mere citizens, or take heed of doing honor for men's civic virtues and personal worth in private stations. But after Dr. Hunt had left, the Board of Administrators of the Charity Hospital placed on their records, without ostentation, an expression of their regret at his departure, deploring that thereby the Hospital had lost his "eminent medical and surgical services, rendered through a long series of years so assiduously and with such consummate skill." That connection with the Charity Hospital had been almost continuous during his professional life. His resignation as House Surgeon, already mentioned, was but a brief separation. In the organization of the Medical College, and of the University, the care of the Charity Hospital devolved on the faculty of those institutions. Dr. Hunt's connection was thus officially renewed; and whenever in the various changes and interchanges, his official connection ceased, he continued a volunteer and welcome attendance for the sake of humanity and in the interests of science. He may be said to have had a connection with the hospital during the whole of his professional life; and his name is identified with the incalculable amount of good which it dispensed through a third of a century.

His reputation had preceded him to Havana and a large connection there were anxious for him to take up the practice of his profession. It was a bold undertaking for one not acquainted with the language, but his energy was equal to the undertaking of studying a new language in aid of his practice in a foreign country at the age of fifty-four. He concluded to undertake it. The rigidity of Spanish forms required an examination, and something of national feeling made the examination of Dr. Hunt, which was allowed to be carried on through an interpreter, uncommonly rigid, not to say, as some have said, inquisitorial in its temper. But science is cosmopolitan. The result was a great triumph to the friends of Dr. Hunt, and was, in the display of the exactness and universality of his knowledge, a surprise to the examiners, who granted him a degree in the name of the Royal University of Havana, and invested him therewith with uncommon marks of distinction, in August, 1863.

But the climate and his breaking health, combined with domestic considerations, prevented his carrying out that plan. In 1864 he was

found, still attended by his devoted wife, but separated from his children, in the Island of Nassau, the home of his grandfather, doing something in the practice of his profession, and successfully introducing the quinine practice into that island during an epidemic.

In the Spring of 1865 the war was practically over. Dr. Hunt seized the first prospect of peace and made haste homeward by the way of New York, tarrying a short time to recruit his health at St. Catherine's Spring, in Canada. In November he landed again in New Orleans, and the family circle was again reunited at home.

He immediately renewed his interest in the University.

Its operations had been discontinued during the war. In November, 1865, after the return of peace, it was resuscitated, but under very depressing circumstances. The building had been occupied by the United States military—one wing for a colored school, under charge of the Freedmen's Bureau—and all were very much dilapidated. The library, apparatus, etc., were greatly damaged, and the treasury was of course empty. Dr. Hunt was chosen President, and occupied himself successfully in obtaining from the Legislature of 1866, a new appropriation of $25,000 for the most necessary wants; and gave his attention, with his accustomed zeal, to the repairing of the fortunes of the institution. In April he delivered before the students and the faculty an address on the "Utility of Science," one of the very few productions of his pen which have been published.

In August, 1866, Dr. Hunt received an appointment from the Secretary of the Treasury of the United States to be Surgeon of the Marine Hospital in New Orleans. It was an employment suited to his tastes, and he had hopes that he might be able to accept it. But his disease increased upon him, and he never was able to take any steps in the matter.

His career was now drawing to a close. His constitution, originally robust, had been long undermined by frequent attacks of the gout; other diseases intervened, under which it finally gave way. His health had been so feeble, at times, during his residence abroad, as to give uneasiness to his family, and in the summer and fall of 1866, he became a confirmed invalid. For six months before his death, he was incapacitated from attending to business, and after a long and wasting sickness, died at the St. Charles Hotel, in the City of New Orleans, on the 20th of March, 1867, lacking about two months of being 59 years of age. The immediate cause of his death was an incurable dysentery.

He was entirely conscious of his condition, and met death with serenity, surrounded by his wife and children, to whom he gave, one by one, his parting counsels and blessings, strengthening them for their loss with words of loving advice, and consoling them with the hopes which Christian faith inspires. Then committing himself to the Divine mercy, he passed away.

The esteem in which he was held was exhibited in the unanimous expressions of the press, describing his death as a great loss to society and to science, and by the warm tributes paid to him in the unanimous resolutions passed by the University, of which he was President, the Faculty of Law and the Faculty of Medicine.

Those of the Law Faculty will most fitly describe the general estimate throughout the community of the virtues and talents of Dr.

Hunt. They describe him as "one who was among the brightest ornaments of science and letter in the country, a man of varied and extraordinary abilities, and of extensive, profound and accurate learning, an elegant and accomplished scholar, a zealous, persistent and efficient advocate and promoter of public education, the founder of the Medical College of Louisiana, an influential adviser and aider in the establishment of the University of this State, a lecturer unsurpassed for eloquence and didactic talent, a citizen of high spirit and exemplary worth, and a gentleman universally esteemed for his private virtues."

This is lofty eulogium, but in the consenting judgment of all who knew Dr. Hunt, it was well deserved.

The professional life of Dr. Hunt extended over about thirty-eight years, of which thirty-four were spent in the city of New Orleans. During that period he was identified with the public institutions of the State and city, and devoted himself to them with an ardor and zeal which had no taint of selfishness. It was the great purpose of his life to promote public education, and traces of his energy are to be found in every movement to enlarge the opportunities and elevate the standards for instruction. Especially in the cause of medicine his zeal was unflagging, and his personal exertions, outside of the line of his official connection, were unremitting and of valuable service. Enjoying much social influence, and esteemed by political men of all parties, he was very effective in securing the various appropriations by the Legislature which placed the University on its present basis. His influence on these matters was more effectual, because, though well known to entertain the strong conservative cast of political opinions of his family, and prompt and able in supporting them when brought into discussion in private circles, he never mingled in the strifes of party.

As a lecturer, his reputation is very great, but it is traditional. He prepared nothing for publication, although frequently called upon to furnish copies to be printed of his lectures, essays and other professional topics, he uniformly declined. This was partly from the practical character of his mind, which kept him constantly engaged in labors of action, and partly because he preferred and cultivated to a great degree of perfection the faculty of oral instruction. He was a lucid speaker, completely master of his topics, which he explained in a didactic manner, which made them seize at once on the understanding of the hearer. Sometimes warming with his own conviction of the innate greatness of the themes on which he was discoursing, he grew into eloquence. On these occasions he has been described by lecturers as a fascinating lecturer. Certainly he was immensely popular.

The same qualities of earnestness of convictions and thoroughness of knowledge made him a most agreeable associate in society. He was deeply imbued with classic lore, and happy in his recollections of the best passages in ancient literature; and he kept up with the latest steps of modern science and belles lettres. His conversation, which was touched with a little of that mannerism which is insensibly acquired by a public lecturer accustomed to assert and analyze his own thoughts as he goes along, was copious and full of interest, and therefore prized most highly by men of the best intellects. He had a taste for intellectual gladiatorship and delighted to measure

himself and his acquirements by the standard of others, and rarely came out of such tournaments discomfitted.

His private practice grew up soon to be as wide as he could find time to attend to, and but for his devotion to the university would have been still larger. He stood in the very first rank of his profession — it would be unfair to others to say, without rivals — it would be unjust to him not to say, that he was without superiors.

In his personal qualities and personal deportment, Dr. Hunt was irreproachable. His disinterestedness was proverbial. In his long attendance on the sick poor at the Charity Hospital, his demeanor — which to the general public had an air of reserve bordering on austerity — became gentle, almost tender. Charity patients by hundreds remember with gratitude his patient and skilful care of them. In his social relations, he was the well-bred gentleman, who supported his own dignity by refined respect for the rights of others. No man ever imputed to him unworthy motives or unworthy actions. His principles were rigidly just, and his friendships warm and constant.

It is not the province of this biographer to speak in detail of the domestic relations, where there are such tender survivors, whose devotion to the memory of the lost husband and father is the living testimony of how much and how warmly he was loved in life. His affection for his brothers, and their strong love for him and for each other, have been so noted for a third of a century in New Orleans, that vulgar minds, unable to appreciate the true beauty of the sentiment out of which it springs, have sometimes bestowed upon it the name of clannishness. But the retention in freshness for half a century of the most trusting affections of childhood, is too rare to be so misprized. It is rather the honorable proof of uncorrupted nature for which the deceased, and his surviving brothers, merit honor.

Dr. Hunt was twice married. His first wife was daughter of Judge Henry Carleton, formerly a distinguished citizen of Louisiana. By her, he had four children, of whom two daughters and one son, survive him. His second wife, now his widow, was daughter of Col. Pride of South Carolina.

The above memoir is from the pen of an eminent editor of this city, the friend of Dr. Hunt for many years.

When the death of Dr. Hunt became known, the following resolutions were adopted by the Administrators of the University, and by the Faculties of the Law and Medical Departments. They will be read with deep concern by his former pupils, who knew his great worth and abilities, as well as by all who respect learning.

IN MEMORIAM.

"University of Louisiana, March 23, 1867.

"At a special meeting of the Board of Administrators of the University of Louisiana, held this day at 6, p. m., the following resolutions were adopted:

"*Resolved*, That in the death of Dr. Thomas Hunt, President of the University of Louisiana, the Administrators of that Institution

have reason to deplore the loss of an able, learned and efficient officer. Cut off in the maturity of a large experience, and in the full vigour of his intellect, the cause of learning has been deprived of one of its most able supporters, and the Department of Medicine of one of its brightest ornaments.

"*Resolved*, That we tender to the family of the deceased our sympathy in their affliction, and recognize their loss as a bereavement alike to them and ourselves.

"*Resolved*, That these resolutions be entered upon the Records of the University, be published in the daily papers, and a copy thereof be sent to the family of the deceased.

"J. N. LEA,

"Chairman of the Board of Administration of the University of Louisiana.

"A true copy: J. R. Schmidt, Secretary."

"University of Louisiana, Law Department, March 25, 1867.

"At a special meeting of the Faculty of the Law Department of the University of Louisiana, held this day, the following resolutions were adopted:

"*Resolved*, That this Faculty deplores in the death of Dr. Thos. Hunt, President of the University of Louisiana, the loss of one who was among the brightest ornaments of science and of letters in this country—a man of varied and extraordinary abilities, and of extensive, profound and accurate learning, an elegant and accomplished scholar, a zealous, persistent and efficient advocate, a promoter of public education, the founder of the Medical College of Louisiana, an influential adviser and aider in the establishment of the University of this State, a lecturer unsurpassed for eloquence and didactic talent, a citizen of high spirit and exemplary worth, and a gentleman universally esteemed for his private virtues.

"*Resolved*, That we hereby tender to his family our heartfelt sympathy and condolence in their affliction.

"*Resolved*, That these resolutions be entered upon the records of the University, and be published in the daily papers of this city.

"A correct extract from the minutes.

"C. ROSELIUS.

"Dean of the Law Faculty."

"Resolutions of the Faculty of the Medical Department of the University of Louisiana, on the occasion of the death of Prof. Thos. Hunt, M. D.

"*Resolved*, That whereas Dr. Thomas Hunt, one of the founders of the Medical College of Louisiana in 1834, from which he resigned the professorship of Anatomy in 1837, and was again elected in 1849,

to the chair of Physiology and Pathologieal Anatomy in the Medical Department of the University, vacated by the demise of Professor John Harrison, was removed by death on the 20th of March, 1867, from his long association with this faculty; and, whereas, the talents, the qualifications and the extensive reputation of Prof. Hunt during his connection with this school, and his devotion to its interests during his long separation from it entitle him to a respectful and grateful memorial, registered and promulgated by his associates in the Faculty.

"*Resolved*, That in the death of Prof. Hunt, the University of Louisiana has to mourn the loss of its most eloquent and gifted teacher, the profession of medicine an accomplished, elevated and independent leader, and science an enthusiastic and untiring votary. He brought to his instructions in Physiology the resources of a cultivated and learned experience; and his practical demonstrations in Pathological Anatomy, repeated for years in the amphitheatre and dead-house of the Charity Hospital, conducted by a master imbued with a profound knowledge of the subject, remarkably graceful and skilful in the use of the knife, and possessed of a talent for didactic teaching rarely excelled, constituted a course the most perfect and unique ever delivered on this continent, and will be long held in remembrance by the graduates and pupils of this school.

"*Resolved*, That during his long and efficient services as presiding and executive officer of this Department, the Faculty willingly testify to the excellent administration of the late Professor Hunt; to the accuracy of his settlements, and to the large increase in the resources and the facilities of the Institution, obtained mainly by his energy and his influence with the Representatives of the State.

"*Resolved*, That in his plans for perfecting the library of this Department, and in his frequent and valuable donations to the same, the Faculty signalize the liberality so prominent as a characteristic of Professor Hunt, and they hereby determine to erect in the building a tablet commemorative of his connection with the school.

"*Resolved*, That the Dean be directed to transmit an authenticated copy of these Resolutions to the family of the deceased, and convey to them the sympathy of the Faculty, and their sense of the common loss sustained by all who by ties of consanguinity, of profession, or of public or personal association, were connected with the late eminent Professor Hunt.

"T. G. RICHARDSON, M. D., Dean.

"University of Louisiana, Medical Department, March 22, 1867."

Editorial.

An extraordinary press of original matter has imposed the necessity of presenting ten extra pages in this issue, and our readers will hardly complain that the usual editorial space is otherwise occupied, considering the excellence of the papers to which we give place.

We doubt not it will gratify the patrons of the *Journal*, as well as the other friends of our co-editor, Dr. Chaillé, to observe that he has been chosen as the successor of the lamented Prof. Hunt; especially as this will hasten his return from Paris, and enable him to give his personal attention here to the *Journal*.

We trust that the request made in the last No., for data upon the *Vital Statistics of the Colored Population*, will meet a response from large numbers of our friends. What we desire is accurate information, based upon actual observation and, if possible, exact figures, so as to enable us at the proper time to speak authoratatively.

Died

At Montgomery, Ala., June 6, 1867, Gustavus Adolphus Nott, M. D., Professor of Materia Medica and Therapeutics in the University of Louisiana.

[In a future No. we shall commemorate the life and services of this well known teacher and most estimable gentleman.—Eds.]

List of Journals Received.

The Medical Mirror (London)—April.
The London Lancet (reprint, N. Y.)—April and May.
Medical Times and Gazette (London)—April 13, 20, 27; May 4, 11, 18, 25; June 1, 8.
Gazette Médicale (Paris)—April 6, 13, 20, 27; May 4, 11, 18, 25; June 1.
Gazette Hebdomodaire de Méd. et de Chir.—March 22.
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Chemist and Druggist (London)—April 15; May 15.
Druggists' Circular (New York)—May, June.
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Medical and Surgical Reporter (Phila.)—April 20, 27; May 4, 11, 18, 25; June 1, 8, 15.
The Medical Reporter (St. Louis)—May 1, 15; June 1.
The New York Medical Journal—May, June.
The Richmond Medical Journal—May.

The Medical News and Library (Phila.)—May, June.
The Boston Medical and Surgical Journal—April 25; May 2, 16, 30; June 6, 13.
Buffalo Medical and Surgical Journal—April, May.
The Chicago Medical Examiner—May, June.
American Journal of Science and Art (Silliman's)—May.
The Galveston Medical Journal—April, May, June.
Nashville Journal of Medicine and Surgery—May, June.
Journal de L'Anatomie et de la Physiologie—May and June.
Southern Journal of the Medical Sciences—May.
The Dental Cosmos—May, June.
The American Naturalist (Salem, Mass.)—May, June.
The Leavenworth Medical Herald—June.
The American Journal of Dental Science (Baltimore)—May, June.
The Detroit Review of Medicine and Pharmacy—June.

CONTRIBUTIONS HAVE BEEN RECEIVED

Since last publication from Prof. T. G. Richardson, New Orleans; Dr. Thomas Layton, Paris; Dr. T. W. Baird, Point Jefferson, Morehouse Parish, La.; Dr. A. R. Kilpatrick, Navasota, Grimes Co., Texas; Dr. A. F. McLain, New Orleans; Dr. C. J. Bickham, New Orleans, which will receive place as early as our limits will allow.

Books and Pamphlets Received.

Obstetrics; The Science and the Art—By Charles D. Meigs, M. D., lately Prof. Midwifery and diseases of Women and Children, Jeff. Med. College, etc. Fifth Edition revised. 8vo., pp. 760. Philadelphia. Henry C. Lea. 1867. [From Krull & Dickey, booksellers, 106 Canal street.]

University of Nashville, Medical Department. Addresses delivered at the public Commencement, Feb. 28, 1867: By Hon. Thos. MENEES, M D., and JOHN W. MORTON, Jr., M. D.; *and Catalogue for the Session* 1866–7, *and Announcement for the Session* 1867–8.

Report to the International Sanitary Conference, of a Commission from that Body on the Origin, Endemicity, Transmissibility and Propagation of Asiatic Cholera. Translated by Sam. T. Abbot, M. D. Pamphlet, pp. 104. Boston. 1867.

Why Not? A Book for Every Woman. The Prize Essay to which the American Medical Association awarded the Gold Medal for 1865. By Horatio Robinson Storer, M. D., of Boston. Second Edition. 16mo, pp. 99. Boston: Lee & Shepard. 1867.

Ununited Fracture Successfully Treated, with Remarks on the Operation. By HENRY J. BIGELOW, M. D., Prof. Surgery, Harvard University. *With Abstract from Dr. Bigelow's Clinical Lectures on the Subject, and Cases.*

Dr. McDowell's Letter to the Assembly of Teachers at Cincinnati, Ohio, 1867. Pamphlet, pp. 14.

Notes of Observation to Ascertain the Ultimate Distribution of the Nerves of Gustation. Their Ultimate Distribution not Terminal. By Rufus King Browne, M. D., Prof. of Physic and Mic. Anat., N. Y. College Dent. Surg., in charge U. S. Marine Hospital, New Orleans. Pamplet, pp. 11.

THE

New Orleans Medical & Surgical Journal.

SEPTEMBER, 1867.

ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

ART. I.—ANEURISMS OF THE ARCH OF THE AORTA:

By EDMOND SOUCHON, M. D., New Orleans.

(Continued from the July No.)

SYMPTOMS.

KNOWING as well as possible the anatomy and the physiology of aneurisms of the arch, we are fully prepared to study their *Pathology Proper;* that is, the clinical phenomena by which they manifest their existence, or the signs by which the anatomical changes and the physiological disturbances are marked. This part of the history of the disease is certainly, practically, the most important, as it rules or contains the elements of the diagnosis, which, in its turn, leads the prognosis and the treatment. The method we shall follow is always the same division into four stages, with a few modifications of the sub-divisions, according as there are or are not symptoms corresponding to a class or group of anatomical changes or physiological disturbances.

1*st Stage.* The symptoms of the first or primitive stage, or the symptoms of the alterations of the parieties of the aorta, preceding the formation of the aneurism, are very obscure. Often this process is accompanied or followed by no signs whatever, and can only be suspected or anticipated, in some instances, from the age and the habits of the patient, which give rise to such alterations of the arteries in general. Sometimes, however, the alteration manifests itself

by a murmur more or less intense, with its maximum of intensity on the right of the sternum, and thus distinguishable from the heart.

2nd Stage. The second stage, or commencement of the aneurism, varies according to the species. In traumatic aneurism, the beginning is usually rapid and attended with more or less acute pain, difficulty of respiration and the appearance of the ordinary signs of aneurism of the arch, which are sometimes apparent as soon as the second day after the accident.[1] In spontaneous aneurisms, if it is a true aneurism or dilatation, as their development is slow and gradual, they may exist for a long time without being announced by any sign. If the aneurism is false, the first stage, corresponding to the formation of an incipient true aneurism or dilatation, is accompanied by no manifest signs; but the second stage, which coincides with the rupture of the internal coat and the distension of the others, presents the same phenomena as the traumatic aneurism. Whatever might be the signs accompanying or not the mode of formation, when that formation has taken place and the aneurism is only at the commencement of its growth, especially if it is small, we generally find no sign of any sort, or few and variable phenomena of compression only will accompany it.

3rd Stage. The third stage, or stage of developed aneurism, may exist under two most important clinical forms: a latent form and a revealed form.

A — The latent form presents two varieties: In the first variety there are no signs. Though the subject carries a large aneurism, he attends to his usual business, and complains of nothing that might prompt or suggest an examination of the chest. This latent state may exist in such a degree, that the rupture of the sac and generally immediate death may occur, without the aneurism having previously caused any disturbance whatever in the general health.[2] In the second variety,[3] the subjects not unfrequently complain of pain, oppression, vague feeling of pulsation in the chest, and other symptoms produced by their disease, but these symptoms are insufficient to excite alarm, and are usually referred to anything but the real cause.

The subjects of both varieties, always dying instantaneously, or nearly so,[4] are supposed to perish from apoplexy or disease of the

1 Valleix, *op. cit.*, p. 194.
2 See, in Dr. Lidell's paper, *op. cit.*, the history of nine cases.
3 Dr. Lidell, *op. cit.*, p. 49; and Wood, *op. cit.*, p. 233.
4 *Idem*, *id.* *id.*

heart, unless the real cause of death is ascertained by making an autopsy. The victims of these varieties of aortic aneurism are for the most part met with, not among the inmates of our general hospitals, but among those who, while engaged in their daily avocations, suddenly fall down and immediately expire, or are found lying dead in their work-shops or other places of business. They have generally been supposed to be in the enjoyment of a fair degree of health up to the time of their sudden demise. Such cases come under the administration of the coroner in this city, and are not likely to attract the surgeon's attention, unless specially engaged in ascertaining the causes of sudden death occurring among persons in usual health.

B — Revealed state. Whenever an aneurism has revealed its existence, or has been detected, it offers to study local and general symptoms.

(a) The local symptoms are divisible into two classes :

1st class of local symptoms. The first class of local symptoms comprises the symptoms derived from the alterations proper, or alterations of the formed aneurism, or, lastly, the symptoms presented by the tumor. They are all physical (many are positive signs), and are furnished by inspection, palpation, percussion and auscultation. They vary according as the aneurism is developed on the ascending, the transverse, or the descending arch.

(x) Aneurisms of the ascending arch present different cases, according as there is or is not an external tumor.

1*st Case.* In the first case, that is, when there is no external tumor, the proximity of the tumor will influence the signs. If the tumor is far from the parietes of the chest, inspection, palpation and percussion will give no result.

If the tumor is in contact only with the parietes,[1] there will will be found by inspection a projection, a relief animated with pulsations synchronous with the ventricular systole, and single or double as will be further explained. Sometimes, according to Dr. Greene,[2] when the pulsation is not plainly visible, if the eye be brought down to a level with the chest and looking across the thorax, we may perceive either a localized pulsation or a diffused but distinct throbbing in the upper sternal or infra-clavicular regions.[3] By

1 Nélaton, *op. cit.*, p. 477.

2 Stokes, *op. cit.*, p. 537.

3 Dr. Geo. Greene, *Researches on Symptoms and Diagnosis of Aneurisms and other Tumors of the Thorax*, in *Dublin Medical Journal*, 1846, Vol. 10.

palpation the same pulsations will be confirmed; they are felt external to those of the heart, and it seems, says Stokes, that there are two hearts in the chest. Sometimes, according to Dr. Greene, again, the hand perceives a diffused movement of expansion, before any distinct pulsation is perceptible to the hand. Moreover, by pressure with the palm of the hand anteriorly on the chest and with that of the other posteriorly, and by making the examination at the end of complete expiration, the pulsation, impulse or beating may sometimes be felt, when it would otherwise escape notice.[1] In some cases a more or less intense fremitus or thrill is perceived; yet that thrill is not always present, and, when present, not always constant, since it may disappear and reappear, rendering it thus a serious mistake to regard the thrill as the requisite sign of an aneurismal enlargement, although there is no mistake more common.[2]

The palpation is sometimes painful. By percussion there is a dullness of the sound, permitting to circumscribe the tumor, provided, according to Dr. Hope,[3] the tumor is larger than an egg; to operate also at the end of a complete expiration is a good condition.

Auscultation, provided the aneurism is not too deeply situated, will often, in these two last instances, give satisfactory results, even when inspection, palpation and percussion have proved useless. It will give us a good knowledge of the sounds. These sounds are of two distinct sorts:[4] first, the normal sounds or pulsations (aneurismal sounds of Dr. Bellingham, or impulse or beatings), which, like those of a healthy heart, occur without any form of bellows murmur; and, secondly, the abnormal sounds (Dr. Bellingham) or murmurs, or additional sounds, which in some cases attend or replace normal sounds, as in a diseased heart. As we have already said, the remarkable resemblance between the normal and abnormal sounds of aneurisms of the arch and the normal and abnormal sounds of the heart, renders it probable, says Dr. Bellingham, that the mechanism of their production is the same. Both the normal sounds or pulsations and the abnormal sounds or murmurs present to study their existence, their sounding, their number, their synchronism and their seat. Respecting the normal sounds or pulsations, their existence is sometimes wanting, as in a case related by

4 Stokes, *op. cit.*, or Wood, *op. cit.*, p. 235.

5 Da Costa, *Medical Diagnosis*, Philadelphia, 1864, p. 319.

1 Wood, *op. cit.*, p. 225.

2 Stokes, *op. cit.*, p. 541.

Dr. Barker.[1] Their sounding is strong and clear, and each pulsation or beating is accompanied by a peculiar jarring sensation, called the aneurismal thrill; in number they are single or double, for reasons we have already given (see *Pathological Physiology*); they are synchronous to the systole of the ventricle; their seat is at the right infra-clavicular region or sometimes supra-sternal region, and they are more or less close to the ear. The abnormal sounds or murmurs, as regards their existence, are also sometimes missing, as it happened in the very same case of Barker, where there was no pulsation.[2] They are usually heard, if the aneurism is small and contains but little coagulum; whilst in large aneurisms, filled with coagula, the murmer is often absent.[3] With respect to the occurrence or non-occurrence of the murmur, Stokes[4] divides aneurisms into aneurisms in which the murmur is absent, the auscultatory signs being those of a single or double pulsative sound; into aneurisms without any sound whatever; into aneurisms in which is found to exist a murmur produced by the disease itself (intrinsic murmur); and, lastly, into aneurisms in which the murmur is communicated from

1 Dr. T. A. Barker, *Med. Chirurg. Trans.*, 2d Series, Vol. 10, 1841, p. 598.

2 This case is important and interesting enough to justify our giving a detailed account of it. It is case 1st (John Moseley's) of an article entitled "*Two Cases of Aneurism, in which there was neither pulsation nor abnormal sounds, by T. A. Barker, M. D., Physician to St. Thomas' Hospital;* in *Med. Chirurg. Transact.*, Series 2nd, Vol. 10, 1841, pp. 597 and 598."

Symptoms. The heart, the course of the aorta and the large arteries above the clavicle presented no abnormal sound nor pulsation. By inspection, the upper part of the left side of the chest appears larger than on the right side; there is a considerable tumefaction along on each side of the course of the axillary artery, from the clavicle to the axilla; pulsations of the prominent parts are distinctly seen. By palpation, there is a strong thrilling pulsation; no defined tumor could be detected in the pulsating parts, but the hand had the impression that the artery was greatly dilated, from the clavicle to the lower edge of the pectoral muscle. Percussion gave only some dullness at the superior extremity of the sternum. By auscultation of the axillary artery, immediately below the clavicle, is detected a loud whizzing sound at the time of each pulsation, and distinct, though much fainter, even in the axilla. The repeated exploration of the superior sternal and inferior clavicular regions gave no results.

Post mortem examination. The aorta is a little dilated at its origin and for the first two inches of its course, and a sudden and greater dilatation then commenced and continued beyond the point where the left subclavian is given off. Throughout this space, the artery was at least three times its natural diameter. The dilatation, which was principally at its anterior and superior aspect, commenced and terminated abruptly. The innominate and left carotid are dilated at their origin. As for the subclavian and axillary, the left subclavian is dilated a little from its commencement to the thyroid axis, at which point it was contracted; but it dilated again, immediately below the clavicle, to at least twice its natural diameter, and continued of the same size beyond the origin of the subscapular artery. There can be little doubt that the dilatation, during life, of the axillary artery must have been much greater than it appeared after death. The absence of murmur along the aorta, we are at a loss for.

3 Dr. Lidell, *op. cit.*, p. 75.

4 Stokes, *op. cit.*, p. 541.

the heart (extrinsic murmur), this arising when there is a complication of disease of the aortic valves. Their sounding is a more or less harsh, blowing, filing or sawing sound. It is, according to Hope, "as a deep, hoarse tone, of short duration, with an abrupt commencement and termination;" and, sometimes louder than any of the most considerable murmurs of the heart.[1] With respect to their number, they are also single or double, and for the reasons explained above (Grisolle, Dubois d'Amiens). They are synchronous to the ventricular systole, and have their seat or maximum of intensity at the same points as the normal sounds or pulsations.

2*nd Case.* In the second case, that is, when there is an external tumor, by inspection we shall see a projection, a relief formed by the tumor, marked by pulsations and expansion, more limited, more circumscribed, more visible, single or double and synchronous with the beatings of the ventricle. By palpation we observe first a tumor, soft, fluctuating, marked by pulsations and expansion. It diminishes by compression, but when the pressure is removed, the tumor returns, and that with an active, rapid, lively movement, which is generally very distinctive. It is reducible according to the quantity of fibrinous clots it contains. Secondly, there is a border hard and irregular, formed by the ribs and the sternum, perforated, and circumscribing the base of the tumor. By percussion and auscultation the same phenomena as in the above case are apparent, but still more accentuated.

(y) Aneurisms of the transverse arch[2] present only a difference of seat, all the phenomena being located at the root of the neck, in the supra-sternal fossa, sometimes behind the superior extremity of the sternum, and, in a few instances, a little to the left. In the exploration with the finger and the stethoscope, it will be well to flex the head, so as to relax the tissues, and muscles specially, and permit the finger and the stethoscope to penetrate deeper.

(x) Aneurism of the descending arch[3] presents two groups of symptoms. The first group is offered by the exploration of the front

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1 *Idem, id. id.*

2 See a case by Dr. O. B. Bellingham, in *Dublin Med. Press*, may, 1849; or in *Arch. de Médecine* 4*e Série*, Vol. 21, 1849, p. 391. Also, Dr. Raycharles Golding, on Physical Diagnosis of Thoracic Aneurism, in *London Med. Gaz.*, February, 1848, or in *Arch. de Médecine*, 4*e Série*, Vol. 18, 1848, p. 210.

3 See a remakrable case by Dr. Gigon, in *Arch. Méd.*, 4*e Série*, Vol. 10, 1848, p. 522; also Erichsen's Surgery, p. 619; also Magne et Piorry, *Anévrysme de l'Aorte Descendante trouvé en faisant la recherche d'une névralgie intercostale*, in *Arch. de Medecine*, 1840, 3*e Série*, Vol. 9, p. 70; also, Lenoble of Versailles, cited by Nélaton, *op. cit.*, p. 375.

of the chest. By inspection, palpation and auscultation, it will be found that the heart, besides its normal beatings, presents a general movement of elevation "*en masse*," or abnormal beatings, impressed by the aneurism. Hope[1] calls it a double or jugging impulse (similar to that produced when the heart is thrown in front of the spine or is bound down by pericardial adhesions). When it is accompanied by a murmur which can be clearly determined not to be valvular, the diagnosis of an aneurismal tumor lying behind the heart may be made.

The 2nd group of symptoms is offered by the exploration of the dorsal region of the chest, between the spinous process of the dorsal vertebræ and the border of the left scapula. These symptoms are altogether like those of aneurisms of the ascending arch. They are the same furnished by inspection, palpation, percussion, auscultation, and may be also without an external tumor (which may be far from the parietes or in contact with them, and from which the patients feel distinct pulsations on pressing the spine against a hard substance), or with an external tumor, which sometimes lifts the scapula and throws it on one side, or bores a hole through it or along its border.

2nd Class of local symptoms. The second class of local symptoms comprises the symptoms resulting from the alterations consecutive to the development of the aneurism, or appearing as the aneurism grows. Some of these symptoms are physical and others are functional, but all are only rational and not positive signs. They are divisible into symptoms not resulting from pressure, and symptoms resulting from pressure.

(x) The symptoms not resulting from pressure, but from alterations in the anatomical characters of the organs of circulation, are all physical, and are offered by the heart and by the arteries arising from the arch.

(1) The symptoms presented by the heart are those of hypertrophy, of insufficiency of the aortic valves and of fatty degeneration. Hypertrophy is characterized, on inspection, by a relief and a lifting of the pericardial region; on palpation, by an increased impulse; on percussion, by an extension of the dullness; on auscultation, by a diffusion and prolongation of the normal sounds of the heart, sometimes accompanied by a metallic tinkling.

1 Stokes, *op. cit.*, p. 544.

The symptoms of insufficiency of the aortic valves are the same as in all other cases of insufficiency of those valves: a generally well-marked blowing sound at the base of the heart and corresponding with the second sound, and a jerking and bounding pulse, so well described by Corrigan and Hope. The symptoms of fatty degeneration are most obscure. We may suppose that such is the case, when the impulse of the heart is weakened, especially if the heart is hypertrophied.

(2) The arteries arising from the arch, if dilated and if the dilatation be propagated to some distance, will present an increased pulsation at the root of the neck and supra-clavicular region; and the more so if there is, at the same time, an insufficiency of the aortic valves. It will be then rather difficult to determine the share of each.

(z) The mechanical symptoms, resulting from the pressure of the aneurism on the surrounding organs, or symptoms of compression, are some physical and others functional, and vary in their expression according to the structure impaired.

(1) The bones, when pressed upon and absorbed, present, according to Dr. Law,[1] two distinct forms of pain: one a lancinating, paroxysmal and remitting pain; the other a constant, dull, boring sensation, confined to a certain locality, according to the bone altered. When the bodies of the vertebræ are destroyed to a great extent, the patient may sometimes suffer from pressure exercised on the aneurismal tumor by the superincumbent weight.[2] In some instances, for the same cause, the usual symptoms of internal pressure, such as dysphagia, dyspnœa and cough, are absent while the patient is supported on crutches; but the attempt to stand without the crutches brings on these symptoms.[3] Lastly, we may find a gibbosity on examining the dorsal region. When the clavicle, sternum, ribs or scapulæ are destroyed, they form that hard and irregular border which we have seen circumscribing the base of the tumor when it is external.

(2) As for compression of the nervous structures, the compression of the spinal cord is followed by paraplegia; the compression of the phrenic nerve is accompanied by paralysis of the diaphragm, and consequently asphyxia; the compression of the recurrent or inferior laryngeal nerve gives rise to alteration of the voice, which

1 Stokes, *op. cit.*, p. 556.
2 *Idem*, *id.*, p. 561.
3 *Idem*, *id.*, *id.*

is hoarse or piercing, or sometimes smothered or extinguished; there are sometimes spasms of the laryngeal muscles,[1] which so closely resemble those of laryngitis, that the operation of tracheotomy has, in some cases, been resorted to, from the supposition that disease existed in the larynx (the laryngoscope shows the vocal cord on one side to be paralyzed and motionless, while the inspiratory movements of the other cord continued);[2] lastly, there is sometimes a whizzing expiration (but more often inspiration), which Stokes calls *laryngeal stridor*, or *stridor from above.*

The intercostal nerves, when compressed against the bone, are accompanied by a pain existing in the back or chest, and usually radiating from the spine around the left side. This pain is almost a characteristic symptom of aneurisms of the descending arch of the aorta.[4]

The brachial plexus (usually the left), if compressed, is affected with numbness, with formication or pricking like the stinging of ants, with pains, and sometimes paralysis[5] of the neck, superior extremity and parietes of the chest.

Compression of the pneumo-gastric nerves is the cause of intense pains, and sometimes of real attacks of angina pectoris.[6] Dyspeptic symptoms, such as flatulence, gastrodynia, acidity, eructations and vomiting, are present, and numerous patients, affected with aneurism, have been treated for indigestion.[7] In cases of compression of the sympathetic, intense pains are produced; also gastric troubles,[7] of the same kind and origin as above. Permanent contraction of the pupil of the affected side is, in some cases, a sign of aneurism, which Drs. Reid, Gairdner, Oglé and others have clearly demonstrated;[8] but the obvious inequality of the pupils is of little aid in the differential diagnosis, for a thoracic cancer has been noted to occasion the same.[9]

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1 Dr. Lidell, *op. cit.*, p. 70.

2 Flint, *Practice of Medicine*, p. 336.

3 See Dr. Lidell, *op. cit.*, p. 71; and Magne and Piorry, *obs. cit.*

4 W. T. Gairdner, M. D., *Clinical Medicine*, p. 526.

5 Nélaton, *op. cit.*; and Flint, *op. cit.*, p. 336.

6 Dr. Lidell, *op. cit.*, p. 73.

7 Prof. McCreody, in Flint, *op. cit.*, p. 336.

8 See Dr. Aitken, *Sc. and Prac. of Med.*, London, 1866, Vol. 2nd, p. 729; also, Da Costa, *op. cit*, p. 320.

9 See DaCosta, *op. cit.*, p. 321; also, McDonnell, *Montreal Med. Chronicle*, June, 1858; also. Gairdner, *op. cit.*; also, Ogle, *Med. Chir. Trans*, Vol. xli.

(3) The cavities, diminished in their capacity, give rise to no very special signs but a more extensive dulness on percussion, or a dulness in place of the normal clear sound.

(4) The heart, pushed out of its situation, presents its beatings in an abnormal place, sometimes in the axilla.[1] Pressed upon by the aneurism so as to be altered in its volume, it will present the characters described in connection with aneurisms of the descending arch, and often, moreover, fearful accesses of dyspnœa, faintness and fainting.

(5) The lung, altered in its volume, gives rise to the absence of the respiratory murmur in a region where it is normally heard (infra-clavicular, the lung being often pushed away from the parietes of the chest by the tumor). If the lung does not yield to the pressure, there is often cough, dyspnœa, occasional hemoptysis, and sometimes a rusty sputum, very like that of pneumonia.[3] The alterations of structure and consistency (gangrene, chronic inflammation and non-tuberculous cavities, etc.) are accompanied by their respective symptoms.

(6) The channels, when compressed, are attended with various disorders, according to the channel. Compression of the bronchi is followed by cough and dyspnœa, and moreover by a diminution of the respiratory murmur in a lesser or greater extent of the corresponding lung; and this is considered by Dr. Stokes, when not explicable by the presence of foreign bodies in the air-passages, as a sign of great importance.[4] There is sometimes a whistling sound, called by Stokes[5] a *bronchial stridor;* in some cases there is an absence of murmur in the lung during the first half of the period of inspiration, but an increase of the respiratory murmur of the second half, as if a valve had been forced;[3] in other instances there is a comparative fixity of one side of the chest during inspiration, with increased expansion on the opposite side.[6] Stokes[7] says there is an absence of vocal vibrations, according to the bronchus or division of bronchus compressed, and an increase on the opposite side. It has been determined that the collapse of the lung, caused by the compression of the bronchus, has been followed by a contraction of the

1 Stokes, *op. cit.*, p. 566.
2 Gairdner, *op cit.*, p. 521.
3 Wood, *op. cit.*, p. 234.
4 Stokes, *op. cit.*, p. 556.
5 *Idem*, *Idem*, p. 565.
6 *Idem*, *Idem*, *Idem*.
7 *Idem*, *Idem*, p. 560.

side similar to that following the absorption of an empyema; and sometimes by an emphysematous swelling of the chest, sternum, arms, abdomen and back.[1] Compression of the trachea is followed by cough, dyspnœa, and moreover by a diminution of the respiratory murmur in a lesser or greater extent of both lungs. Sometimes there is a sort of whistling sound at the expiration,[2] called by Stokes[3] a *stridor from below*, in contradistinction to the stridor from the larynx, or stridor from above. Lastly, in some cases, there is an alteration of the voice (metaphonia); but the voice is seldom wholly extinct (aphonia).[4]

Compression of the œsophagus is attended with dysphagia, with accesses of dyspnea provoked by deglutition and simulating strictures of that tube.[5]

Compression of the pulmonary artery is accompanied by frightful accesses of dyspnea, with faintness and fainting, according to Louis.

The bronchial or nutrient arteries of the lung, when compressed, are followed by symptoms of pulmonary gangrene.[6]

The innominate and subclavian arteries, when obliterated by coagula of blood, by fibrinous plugs[7] or by dissection of the coats by a dissecting aneurism, are followed by loss of power, atrophy, gangrene of the depending parts.[8] When they are only partially obliterated or pressed upon by the aneurism, there are alterations in the pulse at the wrist: it is smaller and is often not synchronous with the heart, and sometimes is not perceptible. The pulse at the wrist presents other remarkable alterations: it is sometimes normal on both sides; in some cases, according to Thurnam and Valleix,[9] it is more or less modified on the left side and is bounding on the right side; when the aneurism intervenes between the heart and the arteries of the arm, the vibratory motion received by the blood in its passage must be extended more or less to the artery at the wrist, and hence the thrill so often observable in the pulse, in aneurisms of the chest;[10] sometimes the pulse at the wrist is considerably later than that of the

1 Dr. Greene, in Stokes, *op. cit*, p. 671; or in *Transact. of Path. Soc., Dublin Jour. of Med. Sc.*, Vol. 17, p. 522.
2 Corvisart, in *Dre. de Médecine en 30 Vol., Art. Anevrysme*, p. 409.
3 Stokes, *op. cit.*
4 *Idem*, *Idem*, p. 598.
5 Dr. Lidell, *op. cit.*, p. 73.
6 Dr. Carswell, in Stokes, *op. cit.*, p. 571; and Dr. Greene, also in Stokes, *op. et loc. cit;* or in *Transact. Path. Soc. Dublin Jour., of Med. Sc.*, Vol. 17, p. 522.
7 Dr. Lidell, *op. cit.*, pp. 71, 74.
8 Wood, *op. cit.*, p. 230.
9 Valleix, *op. cit.*, p. 198.
10 Wood, *op. cit.*, p. 231; see also *Tweedie's Syst. of Prat. Med.*

heart.[1] Dr. Billing [2] has indicated a "resilience" of the pulse depending on that of the aneurismal tumor, after each beating of the heart, as a means of detecting aneurism in its earliest stage, and considers it to be characteristic of aortic aneurism. [3] Dr. Joy [4] has suggested that the simultaneous presence of this character in the pulse of the upper and lower extremities, as its presence in the latter and its absence in the former, might be an index of the position of the affection, in the one instance near the origin of the aorta, and in the other, at some point of the vessel below the origin of the left subclavian. Dr. Marey [5] relates a case of aneurism of the origin of the aorta, in which the pulse of all the arteries was annihilated at the same time.

The carotid artery, compressed or obliterated, is accompanied by giddiness, pain in the head, flashes of light before the eyes,[6] and sometimes symptoms of white softening of the brain or softening without discoloration.[7]

The compression of the superior or descending cava vein is attended with, first, an œdema of the neck and superior limbs (in place of which there is sometimes a puffy, elastic swelling, to which, Stokes says, may be given the name of "tippet-like" swelling of the neck), and a dilatation of the veins of the same parts; secondly, with symptoms of passive congestion of the brain and serous diffusion, that is, a comatose state.

Compresison of the innominate and subclavian veins presents œdema and dilatation of the veins on one side only.

As for compression of the internal mammary veins, Valleix [8] says that he has seen a case, followed by dilatation of veins of the anterior aspect of the chest and left shoulder.

The compression of the pulmonary veins is accompanied with hemoptysis [9]

Lastly, the compression of the thoracic duct is thought and taught to produce debility, emaciation, and ultimately death by inanition.[10]

(7) (8) (9) Compression of the cellular tissue, muscles and skin presents nothing specially important.

C.—The general symptoms of aneurisms of the arch vary according to the period at which the disease has arrived.

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1 *Idem*, *Id. Id.*
2 *Idem*, *Id. Id.*
3 Dr. Lidell, *op. cit.*, p. 74.
4 Wood, *op. cit.*, p. 235.
5 Dr. Marey *On Circulation*, cited by Valleix, *op. cit.*, p. 199.
6 Da Costa, *opera cit.*, p. 320.
7 See *A Case*, by Dr. Robt. Bently Todd, in *Med. Chir. Transact.*, Series 2nd, Vol. 9, 1844, p. 301.
8 Valleix, *op. cit.*, p. 199.
9 Gairdner, *op. cit.*
10 Dr. Lidell, *op. cit.*, p. 73.

(1) At the beginning, or when the aneurism is small and compresses no important organs, the general state of the patient is usually good; some patients, though, exhibit an anxious countenance and are troubled by frightful dreams, startings from sleeps, etc.[1]

(2) At the confirmed state, or when the tumor is voluminous or compresses important organs, the general state of the patient is, as a rule, impaired and presents to study the external appearance and the general nutrition. The external appearance or attitude is remarkable. For the purpose of alleviating by position, as much as possible, the pressure of the tumor upon the respiratory organs, the patient generally prefers some one posture to which, though he may frequently change it from restlessness, he is always disposed to return. The most common attitude is that of sitting, with the head bent forward or to one side, and often the legs hanging from off the bed and resting on a chair. The necessity for giving free scope for expansion of the chest, in consequence of effusion or the cause of embarrassment to the respiration, is probably a more urgent reason for the erect position. Some patients will prefer lying down, and some find greater ease on one side than the other; some even incline the body backward.[2]

The general nutrition is more or less languid, on account of the pains and functional disturbances from compression.

(3) At an advanced period, or towards the end, all the signs of cardiac cachexia (œdema, dropsy, etc.) appear, if they have not manifested themselves before that time; they are caused partly by the concommittant affection of the heart.

4th. Stage. The symptoms of the fourth stage, or stage of termination, vary, of course, with the termination itself.

A—In termination by stationary state, the usual symptoms of aneurisms of the arch are perceived, but with this capital and characteristic peculiarity, that they do not increase; on the contrary, from the moment the tendency to a stationary state manifests itself, they will diminish in intensity, especially the impulse or pulsations and the murmurs, as there are often in these cases, as we have already said, thick deposits of fibrinous clots or transformations of the parietes, which account for it.

B—Termination by cure is a very rare one. Corvisart says he has witnessed a case of cure by fibrinous coagulation, but Grisolle and

1 *Idem.*, *Id.*, *Id.*
2 Wood, *op. cit.*, p. 235.

Bizot both doubt it. According to observations related by Dusol and Legroux [1] and by Albertini, the cure, moreover, may take place even when there is an external tumor. However, when cure has taken place, the symptoms will all, or almost all, disappear, and generally totally. The dulness on percussion and the absence of the respiratory murmur, with sometimes few signs of compression, are all the symptoms that will remain; and yet we suppose that the tumor, after its contraction upon itself, is still of a certain bulk.

C —The symptoms of termination by death vary according to the cause.

The symptoms preceding or announcing and accompanying death from rupture, vary with the seat of the rupture.

(1) In cases of rupture in a vascular cavity or channel, that is, in cases of spontaneous varicose aneurisms, we have symptoms rational and common to all cases of that variety of aneurism, and symptoms physical and special, or proper to each case, according to to the seat of rupture. The symptoms rational, [2] and common to all cases of spontaneous varicose aneurism appear, in a group almost instantly, in consequence of some more or less unusual exertion: a sensation of something giving away in the chest, faintness or oppression, suffocation, dyspnea, and palpitations; sometimes pain, cough and bloody expectoration (all more marked in cases of rupture in the pulmonary artery), and after a short time, dilatation of veins and anasarca, severe and rapidly advancing, of such portions of the body as are below, or the venous system which is distal to the varicose orifice. When the varicose aneurism is between the ascending aorta and superior cava, the arms, face and upper half of the body are the seat of dropsical effusion; and when between the ascending aorta and one of the right or left cavities of the heart and pulmonary artery, the whole of the body is so.

The symptoms physical and proper or special to each case, vary according to different authors. According to Thurnam,[3] auscultation in general will detect a superficial, harsh and peculiarly intense sawing or blowing sound, accompanied by an equally well-marked thrill or purring tremor (the most important sign), heard over the varicose orifice and in the current of circulation beyond it. This sound is continuous, but is loudest during the systole, less

1 Dr. John Thurnam, "On Spontaneous Varicose Aneurism of the Ascending Aorta," in *Med. Chirurg. Transact.*, Series 2nd, Vol. 5, 1840, pp. 361, 373.
2 Idem, *op. cit.*, p. 373.
3 Thurnam, *op. cit.*, p. 374.

loud during the diastole, and still less so during the interval. In particular, first, should the varicose communication exist between the aorta and superior cava or right auricle, when there is no displacement of the heart, the sound will be heard, and the tremor felt, along the right border of the sternum, and will generally be the loudest about the right second intercostal space. Secondly, when the aneurism opens in the pulmonary artery or summit of the right ventricle, the same corresponding points on the left side will be the seat of the murmur, though it may probably sometimes be heard more distinctly nearer to, though still to the left of, the sternum. Thirdly, as for the communication between the aorta and the left cavities of the heart,[1] there is no clinical description of such cases, but the pathological effects would only partially correspond with those of a similar rupture into the right; they would, likely, be resolvable into those produced by the abstraction of a certain quantity of blood from the arterial system, and the circulation of such current through the left cavities of the heart, which would act as a powerful impediment to the return of the blood from the lungs. The effects thus produced need not here be particularly pointed out: they would consist in great dyspnœa, hemoptysis, etc., and they would have considerable analogy with those occasioned by an extremely patulous condition of the mitral valve. The dropsical symptom would appear later in the course of the disease, and then only as a consequence of the retarded pulmonary circulation. The essential characters of the pulse and the physical signs would not vary from those of spontaneous varicose aneurism. The situation of the murmur, however, would doubtless be different: the sounds would be heard most distinctly lower down the precordial region, and probably in the neighborhood of the left nipple.

According to Valleix,[2] first, in rupture in the pulmonary artery, the impulse and blowing sound correspond principally to the middle of the sternum. Secondly, the rupture in the right auricle is accompanied by a blowing sound, intense, with the maximum corresponding to the superior region of the sternum; it is continuous, prolonged during the systole of the ventricle, and is more acute and shorter during the diastole. Thirdly, should the communication take place with the apex of the right ventricle, there will be a sawing sound, continuous, intense, sparkling, especially during the sys-

1 Thurnam's *Spont. Var. An., loc. cit.*, p. 383.
2 Valleix, *op. cit.*, p. 221.

tole. Fourthly and lastly, if rupture took place in the descending cava-vein, there is an impulse and a loud murmur in the right infra-clavicular region.

(2) In cases of rupture in a non-vascular cavity, the symptoms will vary according as the cavity in which the rupture has taken place communicates or not with the exterior, and according as the rupture is large or small. (y) If the rupture is in a cavity without communication with the exterior, the nature of the organ will influence the symptoms. Rupture into the pericardium, if sudden and large, will be followed by death occurring almost instantly, without giving time to manifest any sign of the rupture; and the disease, if not suspected before, will be discovered only at the autopsy. If the rupture is small or narrow, we shall have, as rational symptoms, increasing dyspnœa, fainting and faintness, and the general symptoms of internal hemorrhage; and, by physical examination, the symptoms of diffusion into the pericardium. Death often follows, but sometimes not for a certain period, especially if partial adhesions exist. We have already stated the case of Marjolin, who saw an old aneurismal tumor which had opened into the pericardium, and which had there given rise to a well-organized fistulous opening, establishing a communication between the sac of the pericardium and the sac of the aneurism.

Rupture into the pleura is attended with similar phenomena.

Rupture into the mediastinum has this peculiarity, that it never presents any physical signs, and can only be suspected from the rational and general symptoms presented by the patient.

Rupture into the spinal canal, when the vertebræ have been destroyed, is followed by paraplegia, either sudden or slow, complete or partial, according as the rupture is large or small, and, in this latter case, as the blood diffused is in a large or small quantity.

Rupture between the coats of the aorta itself, or, in other words, dissecting aneurism, is attended with symptoms not very easy to be distinguished from those of other ruptures. However, we shall report the following case,[1] but it should be well understood that it is of a type not very often met with.

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1 See *Holmes's Surgery*, Vol. 3, p. 462; or Dr. Swayne and Mr. Reyworth, in *Pathol. Soc. Transact.*, Vol. 7, p. 106.

See also "A case by Robert Bentley Todd," *op. cit., loc. cit.*

See also "Cases by Dr. Peacock," in *Edinburgh Med. and Surg. Jour.*, Oct., 1843.

See, lastly, "A Case by Dr. Pennock," in his edition of Dr. Hope's *Treatise of Diseases of the Heart and Large Vessels*, American Edition, 1842, p. 402.

"The symptoms of dissecting aneurism are best illustrated by a very interesting case reported by Dr. Swayne and Mr. Keyworth, of York, in which the diagnosis was accurately made during life, and confirmed by dissection. In this case a man aged 51, who had suffered for some time under symptoms referred to a diseased heart with aortic regurgitation (to which diagnosis one of his medical attendants, Dr. Latham, had added disease of the aorta), was seized suddenly one evening, as he was returning from a day of some exertion and excitement, with a severe tearing pain in the chest, instantly followed by a second agonizing pain, which seemed to dart from the middle of the sternum down the left of the spinal column, and terminating only a few fingers' breadth below and to the left of the umbilicus, at which point of arrest the patient thought he heard a distinct crack. He lost power in both lower extremities almost immediately, and the pulse became imperceptible in all the arteries of the lower limbs. A bellows murmur was heard below and to the left of the umbilicus. The 'tearing' pain recurred, and he then passed into a state of syncope, followed by great exhaustion and distress. Reaction set in the next day with much congestion, greatly relieved by bleeding. He survived about three months, dying of dropsy and hydrothorax. The pulse had recurred feebly in the right femoral artery before death. The diagnosis of dissecting aneurism, originating near the root of the aorta and passing down so far as to compress the true channel of the vessel near its bifurcation, was made at the time of the seizure and confirmed by dissection. A transverse rent was found in the arch of the aorta, just below its three large branches; a clot of blood was impacted near the bifurcation of the artery, obstructing the left common iliac completely and the right partially. The old canal of the aorta seems to have been disused, and the arteries to have communicated with the new channel. This case will serve to illustrate the usual run of the cases of dissecting aneurisms, though it is rare for the symptoms to be so well observed or so well marked (especially if the rupture is small and narrow, and the diffusion of blood and the dissection of the coats by it is slow in its progress); therefore the disease is seldom recognized, or even guessed at, during life. The patient is usually

1 See *Holmes's Surgery*, Vol. 3, p. 462; or Dr. Swayne and Mr. Keyworth, in *Pathol. Soc. Transact.*, Vol. 7, p. 106.

See also "A case by Robert Bentley Todd," *op. cit., loc. cit.*

See also "Cases by Dr. Peacock," in *Edinburgh Med. and Surg. Jour.*, Oct., 1843.

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advanced in life and suffering from hypertrophy or other disease of the heart. The first symptom is a lancinating pain at the seat of the rupture, and therefore usually in the chest, followed by syncope, perhaps by pain where the blood reënters the artery or where the tumor ceases. And this may be accompanied by cessation of the pulse from impaction of clot in the old channel of the artery, aided by pressure of the blood in the unnatural channel. This stoppage of the pulse of course causes more or less complete loss of power. In other cases, where the rupture occurs near the heart and the blood falls back into the pericardium, death is sudden; but this is not always the case (see McDonnell's case, mentioned above)."

(z) If the rupture takes place in a cavity communicating with the exterior, the phenomena will vary according to the cavity. Should it be the lung or bronchi or trachea, there is an hemoptysis, which may be sudden and furious or slow, and continuous or intermittent. Dr. Aitken[1] observes that aneurisms opening upon mucous membranes, especially upon the air-passages, are generally attended with small and irregularly repeated hemorrhages. The persistence of these trifling amounts of blood in the expectoration, justifies suspicion of aneurism, in the absence of any other circumstance to account for it. In some cases[2] there is, for weeks together, perhaps for months, an inconsiderable leakage in the air-passages, assuming the form, first of a frothy bronchitic sputum streaked with blood (more frequent when the tumor presses upon and leaks into the bronchi); secondly, of a rusty sputum, very like that of pneumonia, but usually more abundant, more frothy and less viscid; thirdly, of a deeply dyed purple, or brownish purple sputum, like the so-called prune-juice expectoration (more frequent when the tumor presses upon and leaks into the lung); fourthly and lastly, of any of the preceding, alternating with small discharges of pure, unmixed, but generally imperfectly coagulated blood.

Dr. Wood[3] relates a singular mode of fatal termination of an aneurism of the aorta, on a patient in the Pennsylvania Hospital. A large collection of pus had formed in the aneurismal sac, and was discharged into the trachea, suffocating the patient without any hemorrhage, which was prevented by adhesions to the walls of the sac of the coagulum by which it was filled below the abscess.

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1 Aitken, *Science and Practice of Medicine*, London, 1866, Vol. 2, p., 728.

2 Gairdner, *op. cit.*, p. 520.

3 Wood, *op. cit.*, p. 231; or *Amer. Med. and Surg. Jour.*, July, 1858.

If the rupture takes place in the œsophagus, there will be vomiting of blood or hematemesis, which may be sudden and furious or slow, and continuous or intermittent. The rupture may take place at the same time into the œsophagus and the trachea.[1] The symptoms then consist in hematemesis and hemoptysis, either at the same time or separately, according as the rupture in both channels is simultaneous, or takes place first in one and then in the other.

Rupture of the surface of the skin is also attended with hemorrhage, the peculiarities of which are all easily seen.

(b) Death by the incessant progress of the phenomena of compression and of the alterations consecutive to the aneurism, is attended with the usual symptoms of alteration of general nutrition, of slow and gradual asphyxia, and of exhaustion. Exhaustion and asphyxia, caused, as we have seen, by many circumstances, are, we think, more than to anything else, due to coexisting alterations of the heart and to obstruction of the circulation. Bouillaud[2] has given a most beautiful, admirable and true description of the last moments and struggles of these unfortunate victims. It runs thus: "Who can trace, in all its sad reality, the heart-rending picture of the poor unfortunate laboring under the dreadful pangs of a considerable obstruction of the cardiac circulation? Anxiety, fear, despair, breathe in all his features; his eyes are projecting, haggard, wild; his brows are elevated, his nostrils dilated, his mouth opened, as if to express instinctively the want of air and to assist his efforts in attempting to satisfy that imperious want. Unable to keep the horizontal position, sitting on the edge of the bed, his legs stretching out, his arms grasping the bedstead to furnish a fixed point to the respiratory muscles, his body inclined forward, he is in a continuous state of restlessness; he seeks for fresh air, murmuring plaintive groans, and, with an expiring voice and in broken words, often accuses science of impotency; he implores death, and would sometimes himself put a term to his life, if his fainting strength did not betray him, and if his circumstances permitted him to do so. He knows not the sweetness of sleep, or, if he happens to fall asleep, he is tormented by laborious dreams and is soon started awake. In some instances he has short moments of rest, and in that sort of truce, delicious indeed, he flatters himself of a prompt recovery. Vain hope,

1 Dr. H. W. Fuller, in *London Med. Gaz.*, Jan., 1847; or in *Arch. de Méd.*, 4e *Série*, Vol. 14, 1847, p. 87.

2 Bouillaud, *Maladies du Cœur*. Paris, 1835. Vol. 2. p. 219.

though, that a new attack will soon dissipate! However, after the most strenuous efforts of which instinct of self-preservation alone is capable, the respiratory muscles themselves participate in the common exhaustion of all the others. The patient has no longer strength to maintain himself; his head rolls on the pillow, and his body glides to the bottom of the bed, to rise up ever no more again. A sub-apoplectic drowsiness, sort of sleep that nature grants him at his last moments, sets on him; he recognizes none that surround his death-bed; his voice dies away; his breath becomes cold; his eyes lose their brilliancy; his face changes in expression; he expires — only too happy if a sudden death had spared him such agonizing pangs."

(c) and (d) Death by spontaneous syncope and by various complications, is too well known to receive here a long enumeration of the symptoms.

[TO BE CONTINUED.]

ART. II. — CAUSES OF DECAY IN THE HUMAN TEETH: Read before the New Orleans Dental Association, By A. F. McLAIN, M. D., D. D. S.

Mr. President and Gentlemen:

IN view of a physiological fact, that the organization of teeth in the younger generations is becoming more imperfect every day, or rather that a gradual deterioration in quality is taking place in each succeeding generation, and the consequent prevalency of decay in these organs, which obtains in almost every class of society, especially among the inhabitants of large cities, it behooves all intelligent practitioners of dental surgery to inquire into the cause or causes which tend to produce these lamentable results. By calling to their aid the knowledge furnished by anatomy, physiology and chemistry, they might thus be enabled to give such advice and instructions to their patients, in regard to the management and hygienic treatment of their teeth, as very much to mitigate the evils just mentioned, if not actually to arrest or prevent them. That

such deterioration in tooth structure obtains, cannot be disproved by any one who is conversant with the teeth, or who is in the habit of examining the mouths of children, particularly of those who have been bred and continue to live in densely populated communities; for, according to my observations, not more than from thirty to forty per cent. retain the temporary teeth in a healthy, sound condition until the appearance of the permanent ones; the crowns being decomposed or broken off, exposing an arch of diseased unsightly stumps, or perhaps fits of tooth-ache or a succession of abscesses may have necessitated their removal long before the proper period prescribed by nature. So common indeed is this among young subjects, that not only the temporary are found completely destroyed, but the permanent teeth are frequently affected by decay, when they have scarcely more than commenced emerging through the gums.

There are several hypotheses advanced to account for the disease of the dental organs, technically termed caries, but only two of them deserve special mention. One ascribes it to a chemical action purely, while the other attributes the process to constitutional tendencies, and to physical defects existing in their structure. Logically speaking, there can be but one theory in relation to the subject of decay, the physico-vital being entirely dependent upon the action of external agents; for who among dentists has not observed teeth which have had large portions of their substance removed by filing or accidental fracture, or which were naturally defective in their enamel covering, and yet continued indefinitely in a healthy state, unless some exciting cause supervened to call forth decomposition?

As to the alkaline hypothesis, which has been so strenuously advocated by a few gentlemen of the profession, that the preparations of soda and of potassa, as ordinarily used for culinary purposes, are the leading cause of decay in the teeth, it is simply too absurd to require more than a passing notice. It is, however, perfectly true that these alkalies, when concentrated, are capable of decomposing the animal tissues of bones; and I would here state, that I was formerly of the opinion that the same effect would take place with reference to the teeth; but a fact came to my knowledge some time since, which has completely dissipated the idea that any preparation, either of soda or potassa, is capable of any decided action upon the enamel; for, while visiting a soap-boiling establishment last year, I learned that, a hog being thrown whole into a strong solution of

the silicate of soda, the entire animal—muscles, fat, hair, hoofs and bones—will be converted into soap—all, with the exception of the *teeth*, which will remain apparently intact at the bottom of the kettle. This has been observed repeatedly in this manufactory.

Although chemical affinity is rendered inoperative in organs endowed with a high degree of vitality, being subordinate to and under the controlling influence of a law of life, the *vis medicatrix naturæ*, the principle does not hold good in all cases; for some chemical agents will frequently enter into combination with the organic tissues of the system, and still more readily with the inorganic portions, whether living or dead, when brought into contact with them. The enamel, and even the bony structure of the teeth, is acted upon quite readily by many acids,* both vegetable and mineral, through the elective affinity they have for the earthy base, lime, forming new compounds with it, resulting of course in the

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* In the Journal of Dental Science, of September, 1843, will be found the published results of some interesting experiments made by Dr. Wescott, for the purpose of testing the activity of certain chemical agents upon the teeth. The mode of these experiments was as follows:

A water bath was prepared, and kept constantly at a temperature of 98 degrees by a spirit lamp and regulated by a thermometer. In this were placed vials containing the substances to be tested In each of these was placed a human tooth, care being taken to select those of as similar organization as possible, and whose enamel was perfect. A hundred articles, such as are most commonly used as food, condiments or medicines, were thus tested, and uncommon care was taken to watch the progress of the chemical action upon the teeth subjected to such application. The results of these experiments are summed up by Dr. Wescott in the following declarations:

(1) Both vegetable and mineral acids act readily upon the bone and enamel of the teeth.

(2) Alkalies do not act upon the enamel of the teeth. The caustic potash will, however, destroy the bone, by uniting with its animal matter.

(3) Salts, whose acids have a stronger affinity for the lime of the tooth than for the base with which they are combined, are decomposed, the acids acting upon the teeth.

(4) Vegetable substances have no effect upon the teeth, until after fermentation takes place, but all of them capable of acetic fermentation act readily, after this acid is formed.

(5) Animal substances, even while in a state of putrefaction, act very tardily, if at all, upon either bone or enamel. On examining the teeth subjected to such influence, the twentieth day after experiment, no visible phenomena were presented, except a slight deposit upon the surface of a greenish, slimy matter, somewhat resembling the green tartar often found upon the teeth in the mouth.

Acetic and citric acids so corroded the enamel in forty-eight hours, that much of it was easily removed with the finger nail. Acetic acid, or common vinegar, is not only in common use as a condiment, but is formed in the mouth, whenever substances liable to fermentation are suffered to remain about the teeth for any considerable length of time. Citric acid, or lemon juice, though less frequently brought in contact with the teeth, acted upon them yet more readily. Malic acid, the acid of apples, in its concentrated state, also acted promptly upon the teeth. Muriatic, sulphuric and nitric acids, though largely diluted, soon decomposed the teeth. Sulphuric and nitric ethers had a similarly deleterious effect. Super-tartrate of potash, or cream of tartar, destroyed the enamel very readily. Raisins so corroded the enamel in twenty-four hours, that its surface presented the appearance and consistency of chalk. Sugar had no effect, until it had undergone acetous fermentation.

complete disintegration of the organ. The crystalline mineral substance of the enamel possesses no vital organization, consequently it is just as liable to be acted upon by chemical agents, while in its normal place, as it would be when separated from the body.

The chemical hypothesis being now well nigh generally admitted by all correct observers, the physico-defective theory can be considered only as one of the proximate or predisposing causes, inasmuch as, without the subsequent chemical action, no organic change is possible. If this were not so, it would be worse than useless—in short, it would be perfect folly—to attempt the arrest of incipient decay by merely removing it by filing, polishing, or by such other means as are usually pursued, and, I would add, so successfully too, in many cases. Therefore imperfections favor decomposition, only by affording lodgment for alimentary matters, which are rapidly converted, through the warmth and moisture of the mouth, into an acid product; or acids already formed may be taken into it, which are held in contact with the dentine, and even with the enamel, and the constant action of these agents by frequent repetition eventually terminates in decay.

Defects may be congenital or accidental, but, aside from them, one of the prolific causes of decay consists in the profuse use of acid food and drinks; for the teeth, especially the enamel, being so largely composed of the alkaline earths, their frequent exposure to the action of the juice of lemons, oranges, strong vinegar and acid fruits, may induce disease, even in parts more perfect in their organization. And when it is considered to what extent this habit or acquired taste prevails among young people, especially females, it will not be wondered at that their teeth, subjected as they are continually to the action of those deleterious agents, should fall early a prey to such influences. These effects would be still more marked and rapid in their course, were it not for the counteracting effect of the saliva which, in its normal condition, possesses for a wise purpose a slight degree of alkalinity.

As great a difference exists in the quality of teeth in different individuals, as there is in the *physique* of the possessors themselves; hence their power of resistance to deteriorating agents depends materially upon the difference of their density. That a tendency to bad or imperfect teeth is transmitted from parents to offspring cannot be questioned, for it is not an unfrequent occurrence for several members of the same family to have an exact similarity in the form,

size and position of their teeth, as well as to have corresponding teeth affected in a similar manner. In those persons who have inherited, as it were, such predisposition, it will be observed that deficiency of enamel exists, or that it is irregularly or imperfectly diffused on their teeth, exhibiting on the crowns, particularly of the *molares*, great depressions or deep lines, and sometimes small pits, which places, being but poorly protected, become the seat of disease. These imperfections are very often the *sequelæ* of exanthematous, febrile and other diseases, which commonly occur in childhood, during the formative process of their crowns. They are attributable to an arrest of developement or to some irregularity in the deposit of bony matter in the growing teeth, causing permanent defects which are sometimes discernable in the external appearance of the organs. Measles and Scarlatina, for instance, often leave evidences of an attack upon the enamel of the teeth, in the pitted appearance which they present.

The *incisores* and *canini* of a lady for whom I operated lately, are the subject, in both maxillæ, of this species of malformation, to such an extent that the cusps presented an irregular, jagged, honeycombed appearance. All were more or less decayed on their ends, requiring fillings. On inquiry I learned that, during infancy, she had had a severe attack of scarlatina, and that both the temporary and permanent teeth were similarly affected.

Rickets very much delay the course of dentition, and frequently so impair the structure of the teeth that, when protruded, they are liable to decay. The enamel of the teeth formed under the influence of this constitutional vice, often appears craggy and worm eaten. Though sufficiently hard, the roots, during the progress of the disease, have been found softer than natural.

Scrofula is an affection which interferes with assimilation, and consequently with perfect nutrition and growth. Being often inherited early in life, the developement of its mischievous nature takes place, influencing the teeth during the period of their formation; and, by preventing their proper organization, renders them feeble to resist the action of morbific causes.

Another prominent cause of decay arises from the abuse to which the stomach is subjected, by the erroneous habit most people indulge in, of eating at irregular hours and at too short intervals. This organ, like others, requires rest; and the constant stimulation received by the introduction of food into it, taxes the secreting power

of the glands to an undue degree, thus favoring the formation of an acid product inimical to the health of the organ. Naturally, in the quiet state, the stomach contains nothing save a little mucus, which serves the purpose of lubrication; but the gastric juice is never found in it, except when the nerves are excited by the presence of food, or other matters calling it forth, and is capable of being secreted only in a given quantity. Now, if food be taken too frequently, or too much be introduced into it, the gastric juice failing in quantity or in its solvent powers, the food remains too long in the organ and an acidulous fermentation is produced, which becomes capable of reacting chemically upon the teeth, at the same time causing considerable disturbance in the digestive apparatus. Repeated violations of the laws which govern this portion of the organism, result finally in functional derangement, which, by interfering with digestion, impairs nutrition; for imperfect chymification makes bad chyle, and bad chyle becomes poor blood. Consequently the teeth, in common with every portion of the system, deriving their nourishment from a common circulating medium, suffer proportionably for the want of sufficient nutriment for structural replenishment.

This brings us to the consideration of the proposition with which we started, that of the gradual degeneration in quality of the teeth at the present day. This determination no doubt is due to the common abuse of the digestive organs, and to the highly artificial mode of bringing up children, whose diet, instead of being plain and substantial, consists mostly of that which is rich, luxurious and indigestible. In fact, the customs and fashions of the age are at war with every principle of life and health. The system becoming enfeebled, the teeth of necessity come in for their share of imperfect nutrition. Furthermore, the teeth require to be duly exercised by the act of mastication, obeying as they do the physiological law, that an organ or a member which is not used perishes from inanition. The blood, from which all nutrient elements are derived, as before alluded to, failing to go in sufficient force or quantity to the parts for the want of the proper amount of stimulation, the waste which is going on continually throughout the economy is not replaced by the requisite *quantum* of new materials; therefore deterioration of structure must ensue. Who does not know that, if an arm be tied up for a length of time, it will wither and finally become useless

from loss of muscular power? Strength and vigor then, for the same reason, are imparted to the teeth by their use in masticating, besides increasing their density by the friction thus received. This is well exemplified in the case of cows which are fed exclusively on slops, by their teeth from disuse becoming loosened and encrusted with calculi, and at length dropping out.

Likewise, a marked difference in hardness may be observed to exist between the teeth of one side of the mouth and those of the other, in those persons who have been for a long time in the habit of masticating exclusively on the same side. Hence the frequent use of the brush is of paramount necessity in civilized life, particularly among fashionable people—females especially—whose diet is composed of soft, fluid substances, deficent in a great degree in all those elements, such as silex, lime, etc., which go to make up bones and teeth.

A fruitful cause also of decay may be traced to *dyspepsia*, the bane of the American people, deriving its origin from the violation of the dietary laws. This arises, in the first place, from their unscientific and erroneous modes of cookery; and secondly, from the habit they have of eating in a hurry, bolting down large quantities of food but imperfectly masticated, and perhaps more than the nutritive system requires. The gastric juice may be deficient in quantity, or fail to dissolve such crude masses, for want of sufficient comminution, so that they often give rise to the generation and liberation of gases, with perhaps acid eructations, the tendencies of which are not only to neutralize and vitiate the quality of the saliva, but to react injuriously on the dental organs, and thereby pave the way for subsequent decay. When the teeth have resisted for a time the destructive effects of dyspepsia, it may be attributed principally to their original hardy constitution.

An exciting cause of caries, in the teeth of a certain portion of females, may be traced to pregnancy, in which condition a superabundance of gastric acid is almost always found existing, due undoubtedly to the pressure exerted by the gravid uterus upon the other abdominal viscera, or through the sympathy which exists between those organs. The popularly received opinion, that the birth of each child costs the mother a tooth, is not entirely without foundation, for the rapid dissolution of the teeth and the erosions so frequently met with during gestation indicate the existence of a

preternatural quantity of acid in the stomach, as evidenced also by the morbid appetite which generally obtains for chalk, magnesia and other alkaline substances.

While speaking of abnormal secretions peculiar to certain conditions, as being detrimental to the health of the teeth, it may not be improper, I trust, to advert to a peculiarly disagreeable acid odor of the saliva, observed in the mouths of many subjects, irrespective of sex, the smell and effects of which indicate the presence of sulphocyanic acid. So corrosive indeed are these fluids, that I have known cases in which not only silver plates have been oxidized and destroyed in an exceedingly short space of time, but even gold plates, of the fineness usually worn in the mouth, were very much injured, if not completely dissolved in the course of a few years. It will be readily conceived that, in such cases, the natural teeth are utterly incapable of resisting substances of so destructive a nature. Observation may possibly confirm as a fact, that the teeth of persons who have this quality of saliva, are particularly more susceptible to the action of such chemical agents, and are less amenable to the usual treatment from having been originally badly constituted. This is seen by their opaque, deathly color, differing from the ordinary or general appearance of decay, and in which the abstraction of the earthy matters seems to be complete. The solutions, having expended their force on the inorganic portion of the teeth, leave behind the animal tissues in the form of a leathery substance. Whether the same condition obtains with regard to the bones generally, we have no means of judging; but it is presumable that, in a system where such secretions are found, although the bony structure is not exposed to them, there must be some lack, if not a wasting, of the earthy base.

Much stress has been, and is, laid, but I conceive erroneously, upon the effects produced on the human teeth by one of the most valuable therapeutical agents known in the materia medica—I mean mercury in its various forms. That it is capable of exerting a marked influence upon the system, cannot be controverted, but to ascribe to this drug any direct chemical action, could not be entertained for an instant, nor should the abuse of an article condemn its employment, when the indications seem to warrant it. The direct action which the medicine under consideration has upon the teeth being then null, it may be well to inquire into the physiological or pathological effects it is capable of exerting secondarily

upon these important organs, through sympathetic influences. The relationship subsisting between the mouth, stomach and other organs, is so intimate, that an agent which is capable of changing the quality of their secretions, is also susceptible of affecting similarly those of the mouth. Thus is produced a reaction more or less deleterious, according to the effect of such secretions upon the teeth, connected as they are with the mouth by means of the mucous membrane that is continuous with that which lines the pharynx, œsophagus, stomach and intestines. Consequently the fluids of the mouth, owing to this reciprocity, frequently become changed from their normal condition, either from functional derangement of the stomach, or from the determative action which some medicines have for mucous membranes generally. Now the various preparations of mercury act so decidedly upon the mucous membranes, the glands, lymphatics and periosteum, nay, even the whole mass of blood, that morbid impressions, aside from the effects of sickness and hereditary causes, must be communicated to the teeth, as may be witnessed after profuse ptyalism caused by its administration, in which they become loosened and sometimes fall out by the consequent inflammation and absorption of the alveoli.

The effects of mercury, when administered to persons in health, are striking. They vary indeed, in different cases, and under different circumstances; but its exhibition, in any of its usual forms, is followed by increased watery evacuations from the intestines, by an increased discharge of bile, or by an increased flow of saliva. In short, there is a determination to certain secretory organs—the mucous membranes of the bowels, the liver, salivary glands, etc.—thus augmenting their secretions, carrying in this augmentation an afflux of blood to the parts, and probably altering the condition of the capillary circulation throughout. When pushed in these same persons, inflammatory symptoms are actually produced; the gums become tender, red and œdematous; at length they ulcerate; and in extreme cases, in young children especially, the inflamed parts may perish, giving rise finally to sloughings of the throat, gums, fauces, and sometimes the cheeks internally. Not unfrequently the aveoli are absorbed, or perhaps portions of the maxillary bones become necrosed, followed by exfoliations.

Of the different processes going on in the ulcerated surfaces, that of absorption is predominant; so that in this local affection, the subjects get rapidly thin, their fat disappears, and they become ema-

ciated. In such cases, the absorption of the materials of the body far exceeds the deposit of new matter.

Observation establishes the fact, that mercury given therapeutically or injuriously destroys red blood as effectually as it may be by venesection. Then viewing the subject in this light, may not the *teeth* participate in this abnormal condition, by defective nutrition, derived from impoverished circulating fluids, as well as suffer from the external influences exerted upon them by the vitiating and corroding secretions of the mouth, in which they may be continually bathed?

Syphilis also may produce a state of the buccal fluids inimical to the structure of the teeth, by vitiating the general glandular and secreting systems. This, however, is more apt to occur in the constitutional forms of the malady.

Having detailed at length some of the principal causes of decay in the teeth, it will naturally be expected that something should be said in reference to their prophylactic and therapeutical treatment. Unfortunately, in the present state of society, dental hygiene is but little understood or observed by the world at large, receiving comparatively no attention from the medical profession, and scarcely more from that of dentistry, owing to the fact that the dentist's instructions are soon forgotten, if not totally disregarded. His efforts, if made at all, finally cease, having failed to receive the coöperation of the physician, who very frequently is the first to violate, while treating his patients, the laws which govern the health of the teeth. But generally dentists regard the subject as one beyond their province, belonging exclusively to the physician, never to be touched by them, save in the most distant manner. Prevention then is a matter seldom thought of, except in a few occasional instances, when persons have profited by the advice of some dentist who, in the persistent and faithful discharge of his duties, has gained the confidence of his patient. But the sphere of the dentist is generally restricted within narrow limits, being consulted only when his services are required to arrest the ravages of disease, which may have progressed so far as to produce pain and endangered the life of the organ; perhaps when it has already passed all physical remedy.

The curative resources of the dental art, after the inroads of disease have been made, although successful in most cases, particularly when treated in the early stages, and under the hands of skillful operators, nevertheless are limited to two operations, viz: those of

filing and filling. The first is resorted to for removing superficial caries on the lateral or approximal surfaces of the teeth, and as preparatory to the other, when the decay is situated in the sides of the organs; the second, for the arrest of deep seated caries, by replacing the lost substance of the tooth with an incorruptible material; both of which processes are too familiar to the members of the profession to need elucidation in a paper of this kind.

But notwithstanding all the disadvantages attending the preservation of the teeth by the negligence and, I might add, extreme ignorance of patients, joined to an apathetic disregard which seems to be manifested by the generality of medical men, in reference to the health of these important organs, as well as of the sympathetic influence they may exercise, when diseased, over other portions of the system, still the intelligent dentist may do much towards correcting some of the most obvious causes which tend to produce caries. In the first place, he should impress strongly upon the minds of his patients the great necessity of thorough cleanliness of the teeth, in removing all extraneous substances and acidifiable matters which may collect about them, and the avoidance, as far as practicable, of all concentrated acid substances, taken as ingesta, which may by contact affect them chemically, as well as the moderate use of weaker preparations. He should also endeavor to indoctrinate them with some faint idea of the functions of the stomach, showing that the violation of the laws which govern this viscus is liable to produce functional derangements, inducing, when habitual, abnormal secretions which are capable of reacting on the teeth.

I will go still further. In his position as consulting dentist in families, he can, in all probability, not only improve in the younger members the quality of their teeth, whether in process of formation or during the stage of protrusion, but may even impart a tendency to strong, hardy dentures to those yet unborn. Should an inadequacy of earthy constituents exist in either of the parents, especially on the maternal side, they should be supplied to the mother, during the periods of gestation and lactation, by selecting such articles of food and administering such medicines as are known to possess them in a large degree. This class of defective teeth is indicated by thinness of enamel, generally of a blueish or of a cream color. Sometimes the teeth appear opaque, presenting perhaps a yellow, rusty looking tinge, beneath this thin, almost transparent covering.

It is clearly demonstrated that, throughout life, constant changes are going on in the animal economy, the tissues varying more or less from the natural standard of quality, by reason of sickness affecting nutrition, or from the kinds of aliment differing in the proportions of proximate principles necessary for each organ. If this be true in adults, how much more rapid must the elaboration, and consequently the appropriation, of nutritive matters take place in young subjects, and especially in the embriotic state, taking the rapidity of their circulation into account.

The quality of food has considerable influence on the bones. The prevalency of rachitis in London was shown, some years since, to have had its origin from the habit which obtains among bakers, of using alum to whiten bread. This acted on the systems of the people, by removing the lime and the silex from the bones, or by changing the properties of the bread previously to being eaten. The experiment of supplying any lack in tooth structure has never, to my knowledge, been tried; but, reasoning from analogy, I am persuaded that, if the want of solidity in bones can be restored when lost, or can be imparted when congenitally deficient, it would not be impossible to obtain the same result with regard to the teeth. The only inquiry would be, with what, and how can it be done? Normally, the largest proportion by far of the mineral ingredients which enter into the composition of the teeth, consists of the phosphate of lime, there being 885 parts to the 1000 in the enamel, and 643 in the dentine, or tooth substance. It is, therefore, perfectly rational to infer that, when the characteristic mark of insufficiency of this substance exists in the mother, or when expected to occur in the child, the standard, by its administration in some soluble form, might be raised, perhaps more successfully with preparations of the *hypophosphites*, as being more assimilable. In like manner, other properties might be supplied; if the deficiency existed in the cartilaginous, by selecting those vegetables, and the use of bread made from that kind of grain, which are the richest in gluten.

It may be urged that the system might not always be in a suitable condition to appropriate such materials; yet I believe it probable that, in the majority of cases, the desired effects would be obtained, were some such course as that just intimated adopted and strictly followed out. Furthermore, the desultory efforts of the dentist, in the dissemination of a correct knowledge pertaining to the teeth, would perhaps be strengthened by the coöperation of medical men, and

much good thereby result to the public; but, unfortunately, physicians interest themselves too little in treating and warding off the diseases which have their origin in the teeth, or in the physical improvement of these organs, by not being sufficiently well informed on the subject of dentistry. All reforms are generally slow and difficult; but the necessities of the times demand a change. As a means to attain this end, it would be well that, to the usual curriculum of every medical school in the country, a chair be established for the instruction of their students in Dental Physiology, Dental Hygiene and Dental Therapeutics. But to reach more effectually those whom it is intended to benefit, the elementary branches of Physiology, Hygiene and Chemistry should be popularized, by being taught in all of our common schools and academies for both sexes; and in that way not only facilitate the efforts of both professions, but promote among all classes of people a diffusion of such knowledge as would ultimately result in general health and longevity.

ART. III.—WANT OF EQUILIBRIUM BETWEEN THE LATERAL MUSCLES OF THE EYE: By HENRY SHIFF, M. D., Paris.

IT is well known that the emmetropic or normal eye is of such a length in its antero-posterior diameter, that parallel rays emanating from distant objects come to a focus exactly on its retina, without any muscular exertion whatever. When the object to be seen comes near the eye, as the rays starting from it are no longer parallel, but become divergent, their focus would be behind the retina, if the eye was a mere optical instrument; but the light acting on the retina, by reflex action produces at the same time a contraction of the pupil and of the ciliary muscle. This muscle, placed in a circular direction on the anterior part of the choroid coat, acts by means of the ciliary processes and the zone of Zinn on the crystalline lens. The lens, pressed upon all around its edges by the contractions of the muscle, is thus increased in its antero-posterior diameter, acquiring by this increase more refractive power, and so causing divergent rays to come to a focus on the retina, as parallel rays

did without contractions of the muscle. This property of the eye to receive at different times parallel, as well as divergent rays, is known under the name of accommodation.

If a solution of belladonna is dropped into the eye, the ciliary muscle is paralyzed; it is also often paralyzed after diphtheria. Two cases are on record where, by some accident, the whole of the iris had been lost. The power of accommodating for near objects remained nevertheless, proving that its power is independent of the motions of the iris. When the ciliary muscle is paralyzed by the use of belladonna or by diphtheria, the emmetropic eye is still able to see distinctly remote objects which send parallel rays; but the sight of near objects is very indistinct, as divergent rays coming from them form on the retina circles of diffusion, which cannot any longer be corrected by the paralyzed ciliary muscle.

Some persons, however, after the use of belladonna, or when suffering from diphtheritic paralysis, are no longer able to see distinctly any objects, whether near or far. In those persons has the organ of vision been differently affected? No; the difference arises from a congenital defect of their eyes. In them the antero-posterior diameter of the eye is too short, and they are hypermetropic. The antero-posterior diameter being too short, parallel rays come to a focus behind the retina, and they see with circles of diffusion. This state, which has been revealed by the paralysis of the ciliary muscle, was not apparent before the paralysis, and sight seemed perfect previous to it; because the defect in the length of the eye was corrected by a constant contraction of the ciliary muscle; the increased size of the lens, consequent on this contraction, causing the rays to come to a focus on the retina, which, without this contraction, would have met only behind this membrane. So that, in order to see distant objects, which the emmetropic eye can see without a muscular contraction, the hypermetropic eye has to contract constantly the ciliary muscle, a circumstance which is not without some danger to the maintenance of distinct vision in the eye. A consequence of this state of contraction of the ciliary muscle for the adaptation of parallel rays, is that the *punctum proximum* (or nearest point of distinction) in such persons is further than in the emmetropic eye. This is not due to any morbid change, or to a less degree in the acuteness of vision, but to the fact that the contractions of the ciliary muscle, though they can bring parallel rays to a

focus on the retina, are not sufficient to do the same for divergent rays.

This condition has for a long time been taken for presbyopia, and late researches only have shown the difference between the two states. Presbyopia consists in the impossibility of seeing near objects, on account of senile changes in the lens; the vision of distant objects remaining distinct. These senile changes, entirely physiological, in no way morbid, consist in the gradual loss of elasticity of the lens, and very likely also in the loss of power of the ciliary muscle. These changes prevent an otherwise healthy eye from bringing divergent rays, and divergent rays only, to a focus on the retina; the ability to receive parallel rays without any muscular effort remaining, whilst we have just seen that the hypermetropic eye has to make an effort of its ciliary muscle for every distance. In fact, paralysis of the ciliary muscle in the emmetropic eye by belladonna or diphtheria, though not analogous to presbyopia, since there is no change in the lens, is very similar to this last state; the eye, in both cases, not being able to receive divergent rays, on account of changes in the accommodation, but receiving parallel rays without any effort.

Let us now inquire what would be the effect of paralysis of the ciliary muscle on the vision of a myopic eye. The myopic eye is that in which, the antero-posterior diameter being too long on account of posterior staphyloma, parallel rays come to a focus in front of the retina, and only divergent rays can come to a focus on that membrane; whence only near objects can be seen. The *punctum remotum* in the myopic eye is always a short distance from it, this distance being precisely that from which the rays have the exact degree of divergence, and no more, to come to a focus on the retina. Any object placed between this *punctum remotum* and the eye would therefore come to a focus behind the retina, and be seen through circles of diffusion, were it not for the contraction of the ciliary muscle. If this be paralyzed, the only distance at which the myopic eye will see distinctly, will be at the distance of the *punctum remotum* itself; since all rays emerging from an object further off come to a focus in front of the retina; and rays from an object nearer, behind the retina, the paralysis of the accommodating power rendering it impossible to increase the refractive power of the eye.

Having briefly recalled these definitions, let us study some of the accidents to which eyes differing in their structure from the emme-

tropic eye are liable. The most interesting accidents arise from the connection always existing between the accommodation and the convergence of the optic axes. Whenever we look binocularly at a close object, we have to converge the eyes, so that the two optic axes will meet on the object looked at, whilst at the same time the eyes are to accommodate to this close distance. It may be stated in a general manner, that any increase of the convergence always causes an increase of the accommodation; and *vice versa*, that an increase of the accommmodation cannot take place without a contraction of the internal *recti* muscles by which convergence is generally effected. For binocular vision another condition is therefore necessary, besides the normal length of the eyes; and that is perfect equilibrium in the relative strength of the accommodation of the internal and of the external *recti* muscles. The internal *recti* muscles are always stronger than the external in the normal state. Want of equilibrium may come from an excess of strength of the external *recti*, or from primitive weakness of the internal. Practically the want of equilibrium can always be said to depend on this last condition; and this state of weakness of the internal *recti* muscles, very seldom met with in emmetropic eyes, can be said to be a common complication of myopia. The following remarks have reference mainly to weakness of the external *recti* muscles, and the results of this weakness on the vision of myopic eyes.

How is the diagnosis of this want of equilibrium to be made? What are the consequences and the treatment? There are two different ways of establishing this diagnosis: (1) If we call the attention of a person suffering from this weakness to a small object, the point of a pencil for instance, and gradually bring it within two or three inches of his eyes, we see at once that it is not easy for him to keep both eyes converging towards the point. One of the eyes constantly looking at the point, the other will deviate from it several times before it is finally brought to look at it; and when both eyes are, after this effort, converging on the object, if we cover one of the eyes with the hand and so stop binocular vision, the eye so covered will deviate outwards, causing divergent strabismus.

(2) There is another and more exact method of ascertaining this condition of want of equilibrium of the lateral muscles. If a prism, with its base upwards or downwards, be placed in front of one of the eyes of a person having well balanced lateral muscles, he will at

once have diptopia (double vision); and the image seen by the eye, in front of which the prism has been placed, will be above or below the object seen by the other eye, according as the base of the prism has been placed downwards or upwards; but exactly in the same vertical line. The best way to conduct this experiment, is to draw a thin vertical line on a sheet of paper, and to figure on the line a black dot, the size of a large pin's head. The person having normal lateral muscles, with the prism placed as before, sees only one vertical line and two black dots on it. Not so, however, if there is want of equilibrium of the lateral muscles. In this case the interruption of binocular vision by the prism will at the same time reveal this want of equilibrium, and two lines will be seen with a dot on each line. The images are not only one above the other, as they were in the first instance, but also distant in a lateral direction. The greater the lateral distance between the two images, the greater the want of equilibrium; and as we are speaking of weakness of the internal *recti*, or exaggerated action of the external *recti*, the greater will be the divergence.

But on account of the connection between accommodation and convergence (knowing that accommodation cannot take place without contraction of the internal *recti* muscle), we have an easy way of correcting the divergence. If in front of the prism we place a series of concave glasses, they will cause the rays to diverge, and the accommodation will have to counteract the dispersing effect of the concave glasses. The contraction of the ciliary muscle, necessary for the increase of the accommodation, causes contraction of the internal *rectus;* and when a suitable concave glass is found, a single line with two superposed dots will be seen.

This insufficiency of the internal *recti* muscles causes some unexpected symptoms. The first, known under the name of muscular asthenopia, is a complaint of indistinct vision, after the eyes have been used for a short time. This comes from diplopia, which results from a slight degree of convergence; but the patient will very seldom say that he sees double images, the degree of divergence being too small to give the full impression of the two images, but causing a blurred impression only of one image. It is not a rare occurrence for the patient to complain of neuralgia coëxistent with the indistinct vision (usually in the supra-orbital branch of the fifth pair), of vertigo, and even of nausea.

A very interesting consequence of this insufficiency, is its effect on the judgment which the physician is likely to make of the refraction of the eyes, giving rise to many difficult cases. If such a state of the internal *recti* exists in emmetropic eyes (which is extremely rare), the constant contraction of the cilary muscles of such eyes, consequent on the muscular exertion of the internal *recti* to prevent divergent strabismus, will not allow vision of distant objects. For parallel rays form their focus in front of the retina, and only divergent rays come to a focus on the membrane, though the eyes are of normal length. Such eyes may then be mistaken for myopic eyes. It is, however, seldom the case that emmetropic eyes are affected with insufficiency of the internal *recti*. It is almost always found in myopia, and then causes an apparent increase in the degree of the myopia. In a person with myopic eyes and weakness of the internal *recti* muscles, the *punctum remotum* will be at a shorter distance than in another person having a similar degree of myopia, but without weak internal muscles. Each eye being tried separately, and a myopia of one-eighth, for instance, being discovered in each, concave glasses No. 8 will be too weak for binocular vision, and a glass as high as No. 6 or 5 must be used. The reason is plain, viz., because the effect of the weak internal *recti* in binocular vision produces an increase of the accommodation, and the divergent rays from an object at eight feet make a focus in front of the retina, on account of this excess of accommodation. It must be borne in mind, that the muscular action causing accommodation, causes also interocular pressure.

The most fatal result of the state we are considering in myopic eyes, is the increase of the myopia. Under this exaggerated action, myopia becomes progressive, and interocular pressure causes a simple posterior staphyloma to change into inflammatory sclero-choroiditis, which we know almost always ends in total loss of sight. Progressive myopia has been said to be caused by the excess of convergence that all myopic eyes are subjected to, on account of their *punctum remotum* being close to the eyes. It is, however, seldom met with in myopic eyes having internal *recti* muscles of proper strength. What causes the myopia to become progressive, is not the often repeated convergence, but the excess of convergence through insufficiency of the muscles. In thirty-two cases of myopia complicated with this insufficiency, in which it was corrected, two only had progressive myopia; in the thirty other cases it continued stationary.

Three methods are used for correcting this complication of myopia: (1) the use of concave glasses; (2) prisms with their bases inwards; (3) tenotomy of the external *recti*.

(1) The use of concave glasses is hardly to be reccommended, since they are often a cause of aggravation, instead of relief. As concave glasses are usually given to correct myopia, it may be well to inquire why they will not answer, when it is complicated with muscular asthenopia. In a myopia of $\frac{1}{6}$, for instance, in which concave glasses No. 5 are necessary to the remote objects, a much weaker glass is always given for near vision (No. 10 in this case), and at the same time the patient is instructed to hold his work as far from his eyes as he possibly can. The farther he holds it, the less will be the use of his accomodation, and the less the convergence. In spite of this recommendation, and almost against his own will, he will place his work at a shorter distance, to get a better view of it, and this is at once followed by a contraction of the ciliary and of the internal *recti* muscles. This use of the convergence may not be of great danger to a myopic eye with strong internal *recti* muscles, though it cannot in every case be said to be free from peril, but it will be seen at once how fatal it would be in cases complicated with muscular asthenopia. The means given to relieve would almost necessarily increase the trouble, by causing a greater effort of the muscles than if no glasses were given at all, and would be a cause of progressive myopia.

(2) Another and more appropriate way of relieving this want of power of the internal *recti*, is the use of prisms with bases placed inwards. They relieve the action of the internal *recti* by throwing the image outwards, and further from the eye than the object looked at; so that it can be seen with a less amount of convergence. They will answer in all cases where the asthenopia is not excessive.

(3) When this is too great to be remedied by prisms, tenotomy of the external *recti* has to be resorted to. The operation is done, though there be no actual divergent squint, to put a stop to the trouble coming on during vision of near objects, and to prevent the myopia from becoming progressive. When by this operation the equilibrium of the two lateral muscles has been reëstablished, concave glasses can be given with more safety; or a prism will easily correct the want of equilibrium between the two muscles, if the operation has not entirely corrected the fault.

Art IV.—SUPPRESSION OF THE LOCHIA:

By J. M. Pace, M. D., Camden, Ark.

IF, in offering for publication the following theory regarding the nature and treatment of suppressed lochia, I am sufficiently fortunate to engage the attention and invite the aid of abler minds to the investigation of the subject, I shall be repaid for the time devoted to its investigation. I do not pretend to have discovered the true pathology of the disease or an infallible cure, but submit it to the profession, to be received or rejected as their wisdom may dictate.

Ramsbotham says that suppression of the lochia is rarely or never an idiopathic affection, but is dependent on some other derangement of the system, either fever or inflammation. As far as my own observation extends, congestion of the uterus is, in the majority of instances, the cause of suppression occurring two or three days after delivery, and precedes active inflammation of the uterus and peritoneum; and if taken in time, we might in almost every instance arrest a disease which has such a fatal tendency. It is a well authenticated fact, that there are but few diseases more fatal than puerperal peritonitis. Thousands have fallen victims to its unsparing ravages. There is to me nothing more melancholy than to see a mother who has just given birth to a well developed child, called upon to render her account, to bid farewell to those who are near and dear to her, to leave a helpless infant to share the cold charities of the world at a time when she thought her happiness had just begun, when her fondest hopes had almost been realized. Nor does the physician's reputation, in such cases, escape the assaults of popular censure.

In some instances the patient appears to suffer no inconvenience from the suppression of the discharge. I have frequently noticed the lochia to lessen in quantity or disappear for the time, when the milk veins become engorged on the first appearance of the milk, and again appear when the breast is regularly performing its functions, which is entirely due to the sympathy existing between the breast and uterus. The mere diminution or absence of the discharge at this time, without any other unfavorable symptom, should not create any apprehension on the part of the medical attendant; nor would he be justifiable in resorting to severe measures to bring on an increased flow.

If, however, he finds his patient, on the second or third day after delivery, with an accelerated pulse, coated tongue, moist and clammy skin, restlessness and indisposition to sleep, constant pain in the uterus with enlargement and suppressed lochia, he may rest assured that he has a congested uterus to deal with, which requires immediate treatment. My treatment for the last seven years has been as follows: If the patient is full and plethoric, and it is not contra-indicated, I sometimes take blood, though I rarely ever find it necessary. I invariably give a mercurial cathartic (usually preferring the compound cathartic pill, as prepared by the U. S. Dispensatory), and in connection with this the spirit of Mindererus, half an ounce, every three hours. After the mercury has acted sufficiently, I combine with spirit of Mindererus acetate of morphia, the latter to be given until she is relieved of pain and sleeps quietly. Sometimes it is necessary to repeat the cathartic, though I find it rarely ever necessary. Flannels dipped in warm spirits of turpentine and applied to the bowels have also a fine effect. This treatment is to be continued until a free return of the lochial discharge.

I was induced to try the spirit of Mindererus by the *éclat* it had deservedly gained in congestive dysmenorrhœa. Its effects have been truly gratifying. As to its *modus operandi*, I am entirely ignorant, unless it defibrinates the blood and destroys its coagulability.

ART. V.—MALARIAL PNEUMONIA:

By V. O. KING, M. D., Jefferson City, La.

IN the July No. of this Journal appeared an elaborate practical essay from the pen of E. P. Gaines, M. D., upon the subject of "Malarial Pneumonia." The instances of this complicated disease, to which my attention has been called during the last ten years, have been quite numerous, thus affording a field of observation too extensive to be despised, and too full of instruction to be neglected.

This complication, which is recognized by the concurrent existence of hepatic disorder and inflammation of the lung, has, under my observation, been almost invariably preceded by some affection

of the liver, arising from malarial influence. The precedence very rarely occurs in the pulmonary viscus, to which it is linked in pathological affinity. This order, in point of time, in which the two organs exhibit their respective lesions, is of grave significance, as it points unerringly to the principles upon which the practitioner should proceed.

When the lung is primarily affected, and the liver, in its turn, responds in sympathy to that organ, the same assemblage of symptoms are present, but are reversed in the order of their occurrence. There are some cases of jaundice, as evidenced by increased activity of the liver, which presuppose a pathological condition of the lung. This sympathy between the two organs is explained by the fact that they both possess eliminating powers, which they exercise concurrently upon the same element.

The researches of organic chemistry have revealed the fact that the bile is a highly carbonized fluid; that its essential constituent is the choleate of soda; and that the choleic acid contains nearly sixty-three per cent. of carbon. Physiology has demonstrated that the principal office of the liver is to eliminate, through the medium of its peculiar secretion, the superfluous carbon of the system. This duty is performed concurrently with the lungs. When these latter organs, however, are incapacitated, by disease or otherwise, for contributing their quota of service in the eliminating process, the undivided burden is assumed by the liver. The large amount of carbon received into the organism by inhalation, by carbonaceous ingesta, and by capillary absorption, being thus forced through the portal system, unduly taxing the liver, calls upon that viscus for increased labor. This augmented service is manifested by an increased flow of bile. The ordinary channels for its expulsion become unable to meet the demands made upon them; and the consequence is a metastasis of the biliary secretion to all the organs of the body, imparting the characteristic yellow tint to their several fluids. The physical phenomena of icterus are then present, masking the original disease.

The great pulmonary organs, by virtue of their coördinate powers in the office of elimination, become surcharged with the carbonic acid of the venous circulation, which they are unable to exchange for the oxygen of the air. Inflammation of the parenchyma is the result; and the laboratory of the vital fluid becomes unfitted for its office in the animal economy.

On the other hand, pneumonia as a primary affection may reverse the order of the metastasis, and the accumulated carbon of the system seek its liberty through the portals of the liver. The experienced attendant is sometimes misled by this reciprocal assumption of duty between these twin colleagues of the organism. Under the guidance, however, of principles which have resulted from long study and mature experience, the physician will not be betrayed into errors of diagnosis. When such errors do occur, a course of treatment is adopted to meet the symptoms as interpreted. Recovery may follow, and the very illogical conclusion be drawn that it is a *cure*. This ratiocination involves the fallacy expressed in the postulate, "*Post hoc, ergo propter hoc*."

It would be folly to weave a web of intricacies out of the phenomena arising from this complication, when they can be traced in so direct, and through so obvious, a channel; it would mar the symmetry of pathological action, and, like the veil of Isis, only serve to obscure the features. Careful and critical inquiry into the origin of the disorder will rarely fail to reveal its true nature, and suggest appropriate remedies for its removal. The very practical remarks of Dr. Gaines upon the subject of treatment leave but little to be said under that head. The principles of treatment there laid down are eminently correct, and if pursued in the same rational spirit in which they are conceived, will meet every emergency and be made available in every combination of symptoms in which they may occur.

Clinical and Hospital Record.

ART VI.—YELLOW FEVER IN NEW ORLEANS:

By FRANCIS BARNES, M. D.

IN view of the possible breaking out of yellow fever in New Orleans as an epidemic, an account of one infected ship which was allowed to lie in the port over a month at the date of this writing, when each week reports of fresh cases as being infected by this vessel reached the authorities, may hereafter possess interest. This ship has changed its position three times since its arrival, lying first at Algiers, next in the First District, and finally three days at the

Government Wharf. I have been at some pains to ascertain every particular which could be arrived at, partly because I am a strong believer in the infectious nature of true yellow fever; and partly because, although I made a report to the Board of Health of the "existence of a malady in the family of Captain Hooper, of the bark *Florence Peters*, which in my belief was yellow fever," it was nine days before the Board woke up sufficiently to order the ship to be cleansed and fumigated. And up to this time they have taken no steps, either with a guard or a warning in the public papers, which would offer the least impediment to a free intercourse with the ship or the unsuspecting victims who have fallen a prey to the dread destroyer lurking in her hold.

It is useless to argue the *pro* and *con* of this question of an infection about a ship. The Board of Health hold their offices only on account of the presumption that there is this infection; and it is not a part of their duty to prove that so many persons can visit a ship said to be infected, without contracting the disease. They are bound, if there only be a reasonable probability of danger about any ship, not only to disinfect her, if possible, *but to carefully guard the lives of the densely packed population of this city*, by drawing a *cordon sanitaire* around the focus of infection, and establishing a strict non-intercourse between the inhabitants and the fatal ship.

The *Florence Peters*, a bark of 347 tons, cleared from Havana on the 3d of June, 1867. She had on board, as ship's company, the Captain, two mates and six men; besides, as passengers, the Captain's wife, son and baby, and the wife's sister, a young lady about seventeen years of age. She was boarded at the Southwest Pass, as the endorsement of the boarding officer shows, on the 13th. She arrived at Algiers on Sunday morning, the 23d, and Dr. Riley was sent for early in the same morning to see the Captain's wife, who appeared very ill. The ship was entered in the Custom House on the 24th, Monday. I was called in consultation the following Sunday, 30th, and gave it as my opinion that the cases were yellow fever. A full account of this consultation and these cases will appear further on. On Monday, I reported as above. The next Monday the second mate died in the Charity Hospital, throwing up black vomit. Dr. Hart, in whose ward he died, told every physician he saw about the hospital, to go up and look at this man, as a genuine case of yellow fever; and he is my authority for saying this case was verified by a number of respectable physicians. At

the time the second mate was being sent direct from the ship, the first mate was sick and treated by the captain.

The President of the Board of Health ordered the ship to be cleansed, etc., endorsing the order on the back of Mr. Hogue's report of death of the second mate in the Charity Hospital on Tuesday, July 9th.

Dr. Riley's statement: He saw the cases on Sunday the 23d. The Captain told him that his wife was unwell at the quarantine the day that he left it, but made an effort, dressed and appeared before the boarding officer, who did not observe that she was sick. The Captain had given her some of the ship's purgative pills. Dr. Riley further states that Mrs. Hooper had a continued fever, which lasted two days and a half. This fever was accompanied with pain in the head and back, as well as limbs; but he observed nothing peculiar about it, making it differ apparently from remittent fever. This febrile paroxysm passed off, leaving a perfect remission of a day and a half, when, without any apparent reason, the fever returned and lasted up to the morning of death. In the secondary fever he noticed an eruption of distinct rosy spots, which I pronounced mosquito bites; and typhoid symptoms setting in led him to believe that it was a case of ship fever. He had not noticed the yellow color, till I called his attention to it in both cases. He treated both cases with but little medicine—a dose of calomel and jalap the first day he saw the Captain's wife, and 15 grains of quinine in divided doses the day of the remission. He also gave her 15 grains of Dover's powder, to make her sleep, the night before the day of her death.

The young lady was taken sick two days after the ship's arrival. Her fever was continued in its character, and with no decided remission. She vomited sometimes her drinks, and in the early part of her attack some bile, but oftener failed in her efforts to vomit. She had pains in the head and limbs for several days. Her treatment consisted in the administration of calomel and jalap, as a purge, and a blister over the stomach. I forgot to say that one was also applied similarly to her sister, to control a disposition to vomit, which marked her case throughout. A mixture of solution of acetate of ammonia and spirits of nitre was also given her, but no quinine. Iced drinks were used in both cases.

My observation of the cases is as follows: From the Doctor's statement that it was typhus or ship fever, I was not prepared to find and did not think of yellow fever at the time. On being ush-

ered into the room, I saw the two ladies lying side by side in the same bed. The *tout ensemble* of the two cases struck me immediately as something familiar, and that I was now in the presence of two victims of the yellow demon. There was a peculiar lemon, or reddish yellow, tinge of the skin, a rosy color of the mosquito bites, a drunken expression of the eye common to both, and all the circumstances tending to confirm a first impression. I spoke to Mrs. Hooper first, and found it difficult to attract her attention. When fully aroused, she was capable of answering rationally a question; but, if let alone, would fall immediately into a slumber, with her eyes half closed. I then noticed a mottled condition of the skin, marbling its yellow color. I found in the extremities an extreme sluggishness of the capillary circulation, with the pulse over 100 beats to the minute. There were no sordes on the teeth; the tongue was clean and natural and not dry; no ecchymoses nor livid areolæ or circular extravasation around the rosy spots; the blister presented a healthy, red appearance; the gums did not bleed, on being scratched by the finger nail; no vomiting or retching. There was a peculiar tremulousness of the mouth and lips and of the voice in both cases.

To continue with the Captain's wife, the surface of the skin was cold and bedewed with a cool sweat, and the tip of the ears and extremities disposed to get cold. The urine was suppressed; and, although desirous, I could get none to test. I saw no indications for any treatment, beyond an effort to relieve the head by the application of blisters to the temples and behind the ears. The blisters drew properly, but no relief followed. She died at five o'clock that evening from uræmia, which condition was attempted to be relieved by a diuretic, and immediately from arrest of circulation of the blood in the capillaries of the lungs.

The young lady's symptoms I have partially described. She had that tremulousness of the voice and sighing breathing already mentioned in her sister's case. Her skin was rather above a natural temperature and bathed in warm sweat. No disposition to hemorrhage; pulse about 100; capillary circulation good; no sordes; tongue slightly furred; had attempted to vomit several times during the night, but did not succeed; had no good sleep for three nights; eyes bright, with yellow tinge; skin of a peculiar lemon or orange yellow. I got some of the urine the following day, and brought it home with me for examination. The secretion was lessened some-

what in quantity, and not passed so frequently as natural, but still it was not suppressed. She also had a diuretic drink ordered—flax-seed tea, I believe; and some spirit of nitre was ordered separately, to be taken in water in doses of 20 drops every two or three hours. I recommended that she should have administered an injection of a cup-full of beef-tea, with a teaspoonful of brandy in it, every four hours. I found her better on my visit next day, and she continued to improve on this treatment and eventually recovered.

The urine of this patient presented the following characteristics on the sixth day of her disease: It had the color of rich dark brandy; tested by heat and nitric acid, a precipitate of albumen, equal to the third of its bulk, was thrown down; it reacted but slightly, though it produce all the colors showing the presence of bile, by the addition slowly of increasing proportions of nitric acid. Under the microscope no blood globules were seen, showing that the albumen was a secretion and not a hæmorrhage. There were some epithelial cells, but no traces of tubuli or capillaries.

There was a baby in the room, a few months old, moaning with a hot fever, having been sick four days. Auscultation and other examination elicited the fact that it was suffering from a bronchitis and pleurisy; and although an infection of the yellow fever may have been reasonably suspected, it only received a careful treatment of the chest affection. The child's sides were blistered; it took four doses of half a grain each of hydrarg. cum creta, with a moderate dose of ipecac; and was ordered to drink freely of mucilages, and to be sponged with hot spirits, to cool the heat of the skin. The baby recovered. I made three visits in all—Sunday, Monday and Tuesday—when I discontinued them, learning that the young lady and the baby were improving.

Neither Dr. Riley nor I saw the Captain. He was treated by Dr. Houk, but we were told that he threw up black vomit. He died on the 12th and was buried the 13th.

Seth York, a man who expected employment on the ship, and who has been frequently on board, died on the 25th July. All these cases are attributable to infection from this ship. Here the trace of direct infection connected with her is lost, for assertions made to me by certain parties in relation to this point are contradicted by others. And I limit myself to the expression of the opinion that, could all the facts be verified concerning this ship, she would be proved to be a focus whence yellow fever has been propagated to a

certain extent, and the origin, direct or remote, of many cases of that disease which have occurred among sea-faring men in this port.

A few remarks upon the subject of the controversy which has existed in this city for so many years, whether yellow fever be infectous or not, will not be out of place here. This question has been settled in the affirmative everywhere in the world except here, or, it may be, in Brazil. Aitken's late work, which is an encyclopœdia of the practice and science of medicine, contains the fiat of European science on the question, which is settled in this wise: first, that there is a true specific disease, infectious in its character, with a regular series of phenomena, among which albuminous urine is the feature at present most reliable in confirming the diagnosis. The other is the false or simulative, irregular in its character and wanting almost always in the albuminous feature. The first depending on a specific poison, like small-pox, one attack gives immunity from future attacks; the other is regarded as among the protean shapes which malarial poison manifests, conveys no protection against a future paroxysm of the kind or against the true typhus icterodes, and does not propagate itself. The views I find so beautifully displayed by Aitken are my own, and I feel anxious that all the medical world adopt them, as they afford a haven of rest, after so many storms of controversy, and are the only reasonable explanation of all the phenomena.

I have had an opportunity of observing malarial disease as near the equator as the Chagres River, at Vera Cruz, in New Orleans, in the swamps of Louisiana, and the hills of Mississippi. Without any spirit of boasting I mention this, as a reason why I should be allowed the belief that my opinions are entitled to some weight; and when I assert that, during twenty-two years, I have had many opportunities of seeing the yellow fever on a large scale, I should receive credit for ability to observe and discriminate somewhat between the two varieties of disease.

The poison of malaria acts in a varied manner, both because it varies in degree and intensity in different localities, and in the same place at different times, owing to the seasons; and because the phenomena of its manifestations are altered by the various conditions of the systems of its subjects, when it finds them. I believe, bearing in mind known facts, the explanation of the singular manner in which it simulates yellow fever is very simple.

It is well known that, in death from the asphyxia produced by carbonic acid, the blood is dark and fluid and does not coagulate. In death from sun-stroke, the blood is also fluid and disintegrated. If an ox be over driven and immediately killed, its blood will present similar phenomena, the muscles will be softened, will decompose rapidly, and the meat will not be fit to be eaten. Sulphuretted hydrogen and carburetted hydrogen, if I am not mistaken, were found by Magendie to have the same effect. Now, if a stranger as robust as the ox be subjected to all these influences, at a moment when he is exposed to a hot sun and the reflected heat from brick walls, painted of the best colors to accomplish this effect, with that heat which is reflected from the flint stones of the pavement or the white oyster shells on the levee, breathing all the deleterious gases above mentioned; and at a moment when his blood is above fever heat, if he is seized with a malarial paroxysm, is it any wonder that what would not hurt a native would kill him in very short order, and that fluid blood and a hæmorrhagic assemblage of symptoms present themselves, even including black vomit? Without elaborating this idea any further, as I believe the hint can be understood and the train of thought following from it carried out without further words, I would suggest that a more perfect system of hygiene be adopted, as well as a better system of quarantine than at present exists.

Intra-mural interments should be prohibited. The mode of burial in New Orleans is that in ovens, by which the bodies interred undergo a more rapid decomposition than is the case anywhere else in the world. I saw a vault opened this spring, in which a body had been immured only four months before. The coffin had burst open, but there was no bad smell either about it or about the vault; showing that this tomb, so well enclosed to the eye, had not confined one particle of the gases emanating from the decomposition of that dead body, but that they had become diffused generally through the atmosphere of the city and contaminated it. When we can secure better ventilation of streets and houses and their being painted on the outside with a view to the reflection and radiation of heat; when our gutters can be cleansed, and all nuisances abated in the shape of the stench-bearing refuse from certain manufactories; when we can have better air and purer water; can drain morasses, thus preventing malarial emanations, we can do much to prevent malarial yellow fever.

By quarantine of sufficient time to determine the fact of the existing infection of a ship; by the disinfection of its hold and cargo; by the *cordon sanitaire* around it, and about houses and persons after this peculiar infection has reached the city, much can be done to root it out altogether, or lessen the chances of the propagation of true typhus icterodes, or specific yellow fever.

I beg to be indulged while making a few suggestions in regard to the treatment of yellow fever. The alteration in the blood which takes place generally in this disease, is a feature in its pathology which deserves most careful study.

The mutation of the tissues, secretions and excretions is influenced in this disease in a remarkable manner by the condition of the blood. There is a period of variable duration in which the fluid is preserved in a normal or nearly normal condition. During this period remedies may be used and certain therapeutical effects ordinarily observed, as their action may be expected to follow. During the first period of the disease, blood-letting freely, tartar emetic, calomel, quinine, sulphuric ether, etc., have been used, and their champions assert with great benefit. But in the calm stage, or when the hæmorrhagic phase is reached, it is difficult to foretell what will occur from the administration of any remedy. I knew a physician who, in Vera Cruz, in 1847, gave a great number of his patients sulphuric ether to relieve hiccups. So many died that he was afraid to administer that usually harmless remedy. I have known a dose of 8 grains of blue mass given in one case on the 5th, the other on the 11th day, cause death by profuse hæmorrhagic stools; consequently, being in doubt as to the propriety of medication in the middle and last stages of yellow fever, we should be cautious how we use any, confining our active interference with the disease to the first stage, and applying depletion and antiphlogistic measures to such cases as call for them only with a view of preparing them for the second and last. Local congestions in the first febrile paroxysm should always be relieved with cups or leeches, the bowels well cleared out with castor oil or an injection, and perspiration encouraged to a moderate extent by the use of appropriate means. But the most important suggestion I have to make is that in relation to diet. Any one who studies the disease closely will be led to infer from observation that in all bad cases during a certain number of days, say from five to seven after the febrile paroxysm has passed, the stomach, although acid, does not secrete any true gastric juice, and pepsin is

almost entirely absent. Now, when it is remembered how close a sympathy from nervous anastomoses there is between the brain and the stomach, we can understand how, in the peculiar condition the nervous system is in yellow fever, a patient can be thrown into a delirium or coma by a small error in diet. The Duke of Wellington died of apoplexy, by overloading his stomach with venison which he could not digest; and how many such cases can nearly every physician number, when apoplexy has followed an imprudent meal. In cholera infantum, we know that the infant stomach has lost its power of digesting from an irritation of the dental nerves transmitted by anastomosis to the nerves of that organ, and how commonly are convulsions and cerebral symptoms manifested; doubtless the result of indigestion. Last summer I lost two patients who had reacted thoroughly from cholera, and were passing through the typhoidal fever which frequently follows the collapsed condition. One died on the 6th day of her disease, first delirious, then comatose, from a small quantity of milk punch, the casein of which she could not digest. As long as she was kept on beef-tea injections, with a little brandy, and allowed only mucilages and iced drinks by the stomach, she did well. The other case had been in collapse fifty-six hours before she reacted. During the fever which followed, she vomited great quantities of bile. On the night before her death, she slept soundly all night, awoke refreshed, and said she was hungry. She called for a soft-boiled egg with some tea and toast, which she ate with great relish. In three hours after that meal she became delirious, and in six hours she died in profund coma, the whole surface livid from congestion and stagnation of the capillary circulation. This death occurred on the eleventh day of the disease. The lesson to be drawn from the observation of these facts is, to put on the stomachs of yellow fever patients, during the doubtful period, when the absence of pepsin is to be inferred from the condition of the patients, no aliment which requires any assistance in entering the circulation besides the force of endosmosis, and give your soups and broths and stimulants by the rectum, whose sympathetic nerves do not have that property of producing cerebral complications. A good rule is to allow the patient moderate quantites of iced mucilages, and to give one cupful of beef-tea with or without one, two or three spoonfuls of brandy, by enema, every three or four hours.

Art. VII.—HYDROPHOBIA TREATED WITH BROMIDE OF POTASSIUM; Death in Forty-Eight Hours;

By T. G. Richardson, M. D., Prof. Anatomy, University La.

MATTHEW DUGGAN, æt. 6½ years, was bitten on or about the 10th of April, through the fleshy part of the thigh, by a strange dog which he was endeavoring to drive out of the yard. The teeth of the animal penetrated a pair of thick woollen pants and the entire thickness of the limb in its middle third. The animal was not supposed to be rabid, and nothing was heard of him afterwards. Water dressings were applied, and the parts healed kindly, so that in two or three weeks, the boy was as well as ever

On the morning of the 23d of May, six weeks from the time of the accident, he complained of pain in the limb, refused to take his breakfast, and lay down behind the door in a listless, moody state of mind. During the course of the day his mother several times offered him food and water, which invariably produced a nervous shudder, as soon as they were brought near him.

I saw the little patient for the first time at 10 o'clock, P. M. He was entirely rational, answered in monosyllables questions that were addressed to him, and denied that his leg pained him. His skin was hot and dry, pulse full, strong and frequent, tongue moist but slightly furred. Water being offered, was refused with great nervous agitation and dread. His bowels not having been opened for thirty-six hours, I dropped upon his tongue two grains of calomel, which were swallowed with great difficulty and considerable tremor of the whole system. The leg was examined, but no unusual appearance of the cicatrices detected. I saw him about an hour afterwards, and with great difficulty forced him to swallow 25 grains of bromide of potassium dissolved in 2 drachms of water.

July 24th, 8, A. M. Patient composed and less feverish; had slept none during the night; bowels acted several times; profuse secretion from the kidneys. Amount of urine passed in the last eight hours estimated at one and a half pints. Nervous agitation more marked, when food or water is presented.

10, A. M. No apparent change; kidneys still secreting largely. Forced him to take 20 grains of the bromide with ¼ grain morphia in ℥iss of water, and administered the same by enema; but the latter was soon rejected.

3, P. M. Patient calm, but has had no sleep; has asked several times for water, and as often been attacked with convulsive tremors, as soon as it was brought near. Persuaded him to try to swallow 25 grains of bromide in ℥iss of water, which he finally succeeded in getting down, after many spasmodic efforts, biting the spoon and panting with excitement.

6, P. M. Looks exhausted, but calm; no rest; thirst considerable; pulse reduced in force and frequency, and skin covered with moisture. Determined to saturate his system with the bromide of potassium and supply it, if possible, with fluid, I placed him, by the assistance of Dr. E. Souchon, under the influence of chloroform, inserted an elastic tube down the œsophagus and injected into the stomach

Water.....℥vi;
Sherry Wine.....℥vi;
Bromide Potassium ℥j.

The administration of the chloroform was violently resisted, and accompanied with frothing at the mouth. Its influence passed off rapidly and was followed by drowsiness, but no positive sleep.

11, P. M. Nervous excitability increased; pulse flagging and intermittent; mucus beginning to collect in trachea. Considering the case now hopeless, I decided not to repeat the injection into the stomach, but to let the little patient die in peace. Death occurred about six hours after my last visit, the patient remaining rational to the last. A few spasmodic tremors occurred during the night, but no laryngismus nor general convulsions.

ART. VIII.—CASE OF ASCITES: EPIDERMIC TREATMENT: By E. P. GAINES, M. D., Mobile.

SOME two months ago I was requested to visit Mrs. G., and found her in seemingly perfect health. She appeared to be, from her size, in about the eighth month of pregnancy, and I so remarked; but she said "no, for I have a baby about three months old." I then examined her carefully, and found that she had water in the abdomen—ascites.

The history she gave was, that, three months after she had her first child, who is now two years old, she began to swell, and continued swollen. She became pregnant again, and, when delivered of the last child, looked so large that the midwife thought she would have another. As she did not, she concluded very naturally that she had the dropsy. She had been treated by others, before I was called in.

My first impulse was to draw off the water by tapping; but, as there was a little tenderness on pressure, I was afraid of lighting up anew the peritoneal inflammation that was undoubtedly the first cause of the effusion. I therefore put her on the pill of mass. hydrarg., pulv. scillæ and pulv. digitalis. After taking it for a day or two, she was taken with such severe pains in her bowels, that I had to discontinue it. I gave her a good purge of senna and salts, and let her rest a day or two; then made the following prescription: ℞ Tr. digitalis, f℥ij; tr. saponis camph. f℥iv; M. S.—rub over the abdomen several times a day.

The result was as astonishing to me as it was to my patient. She commenced urinating freely, and the swelling to subside so rapidly that she is now nearly as small as she formerly was when in health; and by palpation I can detect but very little fluid. It is proper to say that, with her decrease in size, I had bandages applied tightly around the body. I had read and heard of the good effects of diuretics externally applied before, but never had sufficient confidence to give this method a fair trial until in the present case.

Art. IX.—A CASE OF SNAKE BITE:

By F. Owen, M. D., Mobile.

I WAS called on Saturday, June 22nd, at about 6, A. M., to Miss B——, residing at the foot of Spring Hill, who was bitten on the evening previous, between 6 and 7 o'clock, just above the right ankle by a snake (the kind unknown, but supposed to be a moccasin). I found her in a great state of nervous excitement; the tongue coated and dry; the skin cold and clammy. The bitten leg was immensely swollen and mottled with extravasated blood, which mottled condition extended in spots over the entire body, resembling

very much a case of purpura. There was a coldness or numbness of the bitten leg, attended with an agonizing pain in the wound, which extended, as she described it, to her heart ; and so great was the sense of constriction about the region of the heart, that she was in constant dread of its taking her life. There were hæmorrhages from the skin, the nose, the mouth, the lungs ; and during the day she vomited and purged blood, and also passed it in her urine and from the vagina or womb. The wound had been scarified the evening before, and was bleeding freely, and whisky had been given freely ; but as the pulse was feeble, I continued the whisky and ordered a mixture of ammonia, valerian and camphor.

In the evening I found the nervous excitement somewhat quieted, and the sense of constriction in the region of the heart greatly relieved after vomiting blood freely. The pulse was the same as in the morning ; in brief all of her symptoms were still fearful, and no one thought that she would live through the night.

Sunday, 23d. Found her in pretty much the same condition as the evening before. Continued the same treatment, with a sustaining diet.

Sunday evening. Dr. Gaines visited my patient with me. Pulse 160, the hæmorrhages and other symptoms continuing the same. The was also retention of urine, but the quantity in the bladder was not sufficient to justify the use of the catheter. The condition was therefore considered very unfavorable. Stopped the ammonia mixture, and ordered 20 drops of oil of turpentine every two hours ; continued the whisky or brandy in the form of milk punch.

Monday morning, 24th. The pulse 140 ; the tongue moist ; the bowels moved several times, but stools bloody ; the hæmorrhages from the nose, mouth, lungs and womb not so often nor so profuse as the day before. Drew off a quart of bloody urine with catheter.

Monday evening, Dr. Fournier visited the patient with me. Pulse 136 ; occasional hæmorrhages from the mouth, nose, lungs and womb. Drew off about a pint of bloody urine. Stopped turpentine, and ordered a mixture containing chlorate of potassa and tincture of iron ; and also a solution of alum iron as a wash for the mouth and injection for the nostrils.

Tuesday morning, 25th. Pulse about 120 ; mottled spots beginning to fade on the face and neck ; hæmorrhage only from the nose since last visit. Drew off about a pint and a half of clear urine. General condition much improved.

Wednesday morning, 26th. Pulse 120 ; hæmorrhages ceased to occur, the only unpleasant symptom being the retention of urine. Treatment continued.

Thursday morning, 27th. Pulse 110 ; retention of urine as before ; spots fading away rapidly. Treatment continued.

Friday morning, 28th. Pulse about 100 ; passes urine without the use of the catheter ; has a good appetite ; is considered convalescent and is discharged, but advised to continue the potash and iron mixture

July 10. In passing by, stop to see Miss B——. All the spots have disappeared, except around the wound. The leg and foot are a little swollen and yellowish. She is still unable to use the leg, but otherwise is well, and that too without abscesses forming anywhere.

Art. X.—CHRONIC VOMITING RELIEVED BY HYPO-SULPHITE OF SODA : By W. A. Cochran, M. D., Cambridge, Dallas County, Ala.

JOSH. HEATH, an athletic negro, aged about forty years, was attacked in October last with vomiting a few hours after each meal. The act of vomiting was generally preceded by more or less pain, and the ejected matter, according to his account, consisted entirely of undigested food. As it was accompanied by some gastric uneasiness and slight febrile reaction, he was ordered blue mass with morphia, and put upon a diet of lime-water and milk. This gave only temporary relief.

About a month afterward he came to my office with a tottering gait, sunken eyes, and a countenance that indicated great mental anxiety ; he was considerably emaciated, and the *tout ensemble* of his appearance denoted inanition.

His abdomen was tympanitic, and bowels were constipated ; pulse small and irritable ; tongue pale and flabby ; complained of no pain but an uneasy sensation over the region of stomach and liver, which was increased by pressure ; said he had not retained a single meal longer than a few hours for more than a month, and invariably

vomited immediately after drinking water. No opportunity was afforded to inspect the vomited matters, but I was strongly inclined to the belief that the whole trouble was owing to a species of fermentation of a *yeasty* character, associated probably with malignant disease of the pylorus.

As the hypo-sulphites are thought to possess the *summum bonum* of all anti-ferments, I resolved to try their effects in this case. Half an ounce of hypo-sulphite of soda was put into an eight ounce vial of water, and a tablespoonful ordered to be taken in a wine-glassfull of water about half an hour after each meal. He was restricted to a diet of bread and milk. He returned in four or five days, looking much better, and with a smile of satisfaction asked for another vial of it; said he had not vomited a single time since using it. I ordered it to be continued for a couple of weeks, or as long as it should be necessary.

At this writing, he is apparently in the enjoyment of perfect health; and the relief afforded was so marked, that I have thought it worth while to make a note of it.

ART. XI.—REPORT OF EYE AND EAR CASES:

By DR. B. A. POPE, in charge of the University Eye and Ear Clinic.

CASE I.—TRAUMATIC IRIDO-CHOROIDITIS—OPERATION FOR ARTIFICIAL PUPIL.

WM. W., aged 60 years, presented himself at the Eye and Ear Clinic of the University, for treatment, on the 6th of February, 1867.

Twenty-five or thirty years since, he was "blown up," while blasting rock. Nothing remained of the left eye except a moderate sized stump. With the right eye he was just able to guide himself, when he made use of a solution of atropia. Upon examining the eye, I found upon the cornea two small, circular, white spots near its centre. About two-thirds of the margin of the pupil was adherent to the capsule of the lens. At the upper and outer part of the pupil there was a small dense opacity of the lens and capsule; partly

caused by the wounding of the lens by a foreign body, and partly by the products of inflammation of the iris. The iris was torn from its ciliary attachments at its upper and outer part; so that there was a second pupil, the result of the trauma. Between the two pupils the iris was rolled together, and much thickened and altered in color. The whole iris was in a state of chronic inflammation and partial atrophy. At and just behind the point where the iris had been detached, the sclera had evidently been lacerated. The margin of the upper lid had been cut, probably by the same body that detached the iris and lacerated the sclera. The two spots on the cornea were evidently points where foreign bodies had entered, one of which had been buried in the lens, and had given rise to a circumscribed opacity, the direction taken by the other being uncertain. It is probable, however, as will be seen later, that one lodged in the ciliary muscle, on the side next the nose. To the inner side there was a small portion of the margin of the pupil free; and when the pupil was dilated, the sight of the patient was somewhat improved. It was impossible to examine the deeper portions of the eye, for the amount of light admitted was too limited for that purpose.

On the 9th of February, 1867, I operated for artificial pupil, directly inwards; and succeeded in making a sufficient pupil without difficulty. On the 10th of February, the patient said that his sight was better, and that he could see my face in my dark room by lamp light, which he could not do before the operation. Upon examination with the opthalmoscope, I could now see the retinal vessels and the papilla nervi optici, but as through a thick mist or maze. The indistinctness was caused by diffuse opacity of the vitreous humor.

April 4th, 1867. The case has steadily improved up to this time, and can now read No. 17 of Yaeger's test print, with some facility. The iris has assumed a much more healthy appearance, as has the whole eye. The retinal vessels and the the optic papilla are both now pretty clearly visible, the opacity of the vitreous humor having to a great extent cleared up. There is partial atrophy of the optic papilla, which accounts for the fact that the sight is not now almost as good as before the injury. This last proposition has, however, to be somewhat modified, in consideration of the fact that the power of accommodating the eye for seeing clearly at different distances has been almost entirely lost. This grows out of the fact that the

ciliary body has been severely inflamed, the inflammation having extended to that part from the iris, and from the fact also that it was probably wounded at two points. In examining the fundus oculi very far forwards and to the inner side, which is rendered easy by the artificial pupil, the ciliary body seems to be replaced by an exudation mass, which has become extremely white and atrophied.

Remarks.—For the immediate *optical* effect, the operation in this case did not have a very brilliant result; and had no *curative* effect followed, it would have remained *comparatively* unfruitful. There is now no inflammation, where for twenty-five or thirty years it had existed, and even the effects of this long existing inflammation are still being removed; so that it is impossible to say at this time what point the improvement in the sight will reach. At present the patient can perform work not requiring the finest sight as well almost as before the injury.

The manner in which the removal of a portion of the iris brings about such a change in the condition of the eye is unknown, though a variety of theories have been proposed. The fact is that the operation has been proven to have a most curative effect in such opposite conditions, that all the theories yet proposed seem untenable.

CASE II.—BLINDNESS PRODUCED BY CHRONIC INFLAMMATION OF THE CONJUNCTIVA AND CORNEA. THE CASE RELIEVED BY SIMPLE TREATMENT, WHICH WAS COMMENCED FEB. 6, 1867.

J. McM., 35 years old, had an attack of small-pox, about nineteen years since. An attack of inflammation of the eyes followed that of the small pox, and he was for a time "blind." He said that the cornea became "white." After this he improved somewhat, being able to see tolerably well with his right eye, and some also with his left. In 1855, he had another attack of inflammation of the eyes, and became "blind" again. After this attack there was again some improvement in the sight; but after each attack the sight became more and more imperfect. He is at present suffering from a severe attack, which has lasted the whole of the winter; and he has in consequence become entirely helpless.

Upon examination, the conjunctiva of the eyelids was found to be of an almost uniform red color, with some thickening; and there was a profuse secretion of tears and some mucus. The condition of the conjunctiva was such as is often found in cases of long standing

muco-catarrhal conjunctivitis. The ocular conjunctiva was also red, and all the large vessels, deep as well as superficial, were distended. From the whole circumference of both corneæ blood vessels ran over their whole surface. There was, however, strictly speaking, no pannus. The right cornea was softened and distended, but not conical. The corneal substance had a macerated appearance, and almost directly over the pupil there was an irregular rough ulceration, which, from its appearance, must have existed for a long time The whole cornea was more or less opaque; but along its circumference, especially of its upper half, its substance was less opaque, and there was a line of demarkation, which had exactly the appearance as if at one time the greater part of the cornea had threatened to slough, which process was arrested by some change in the course of the disease. The left cornea was also opaque and vascular, but there were many points of difference. There was a large dense opacity occupying about two-thirds of the lower half of the cornea, and extending upwards, so as almost to cover the pupil. The cornea had evidently sloughed extensively. The lower half of the pupillary margin, and much of the lower part of the iris, had become engaged in the cicatricial mass; perforation and prolapsus of the iris having taken place. The perforation had in all probability occurred during the first attack. The rest of the cornea was opaque, but in a much less degree. The cornea was much flattened. An anterior polar cataract could be indistinctly seen, by strongly illuminating the cornea, and directing the patient to look downwards.

Upon carefully testing the sight, I found that the patient could count my fingers at from two and a half to three inches, and could recognize that *some object* was passing before his face, when the hand was moved from side to side at two feet from him; but he could not distinguish objects, and had to be guided and cared for, as though he had been affected with total amaurosis. The right eye was somewhat the better of the two.

Treatment.—In the beginning a ten grain solution of nitrate of silver was applied to the palpebral conjunctiva every third day. As the treatment progressed, and improvement took place, the ten grain solution was sometimes replaced by one of four or two, and the intervals were gradually prolonged.

February 20th, 1867. The improvement in the case has been extremely rapid, and the patient is able to go about his room unassisted, but cannot go alone on the street, on account of the crossings. The right eye has improved the most, as regards the sight.

February 27th. The improvement still continues, and he can guide himself decidedly better than on the 20th.

June the 1st, 1867. Operate on the left eye for artificial pupil, directly upwards. In the course of a couple of weeks he saw almost as well with the left as with the right eye. Previous to the operation the right eye had improved very much more than the left.

July 10th, 1867. Can count my fingers with right eye from nine to ten feet. With the left eye he counts fingers at seven feet. He can see the figure of a man draped in white at 200 yards, and finds no difficulty in going alone through the city. There is still a slow improvement going on.

The cornea of the right eye has lost much of it prominence. The ulceration has entirely healed, and at the distance of a few yards one hardly notices that the cornea is at all opaque. The whole of the surfaces of both corneæ, however, remain partially opaque, and there is no difficulty in detecting the fact.

Remarks.—When the patient first presented himself in the clinic, I did not think that so high a degree of improvement was possible. This remark is especially applicable to the right eye. The degree of the improvement is to be accounted for by the fact that it was a case of chronic inflammatory softening and opacity. The same degree of opacity resulting from ulceration could not have been so much improved.

CASE III.—DISEASE OF THE MIDDLE EAR — TYMPANIC CAVITY.

S. B., aged 9 years, fair, well grown and somewhat delicate, presented himself to me for treatment on the 25th of June, 1867.

In August, 1863, he had an attack of scarlet fever, which was followed, during the period of convalescence, by intermittent fever. His health was much impaired by the two attacks, and he was removed to a more healthy climate. His father told me that the first symptom of ear trouble was observed about ten months after the fever, but his mother thought that she observed it *immediately* after his sickness. At times he has suffered with ear-ache in right ear. There never has been any discharge from the ears, nor has he been troubled with noises. The ears itch at times. His health has been pretty good latterly.

Upon syringing the right ear, it was observed that the water presented almost the frothy appearance of weak soap suds. From both ears some epithelial scales and loose particles of whitish *débris*

came away; but only a small amount from either ear; and it was in no way capable of interfering with the hearing.

Both tympanic membranes were somewhat thickened, their surfaces irregular and flat, and a dimple in each about the extremity of the handle of the malleus. The handle of malleus not so clearly visible as in normal cases. The membranes thicker than normal, but not white. The left membrana tympani was less affected than the right.

The eustachian tubes were open, but the sounds upon the passage of air were not normal. In the right ear there was a slight click upon filling the tympanic cavity, and now and then a slight mucus sound. In the left ear, the filling with air was attended by a simple sound of distension (a flap), as in filling a wet bladder suddenly. The air entered the left ear more freely than it did the right.

Hearing distances: The watch is heard by right ear at four inches, by the left at three and a half.

Treatment.—A gentle counter irritation was kept up behind the ears (mastoid process), and the throat was touched every other day with a solution of nitrate of silver. The ears were syringed out every day, and the tympanic cavity frequently inflated with air. After a few days the entrance of air into the cavity of the tympanum was much more free than at first. The improvement was very rapid, and at the end of five days the hearing distance for both ears was ten inches. This was a very rapid improvement, and rarely seen except in children.

The patient returned home after being under treatment for five days. The treatment was advised, as far as possible, to be continued.

PROGRESS OF MEDICINE.

Operative Surgery—Surgical Pathology.

ART. I.—*Gun-shot Wounds of the Knee-joint.* By JULIAN J. CHISHOLM, M. D., Professor of Surgery in the Medical College of South Carolina, U. S. A.; formerly Surgeon in the Confederate Army.

AS a rule, gun-shot wounds perforating the knee-joint are so fatal under the usual methods of treatment, that military Surgeons are seriously embarrassed in selecting a course from which they might hope for a successful issue. In European army experience such cases do very badly, whether left to themselves or whether operated upon by amputation or excision. In by very far the majority of cases the patient dies, proving, as the result of experience, that gun-shot wounds perforating the knee-joint are among the most fatal wounds of the battle-field. In the large experience gathered from five years' war in the United States, it would appear as if the previous reports of European army Surgeons had been confirmed, and that amputation of the thigh in recent perforating wounds of the knee-joint offered the best means of saving life. In recent years resection or excision of the heads of bones crushed or injured by a ball has been urged as a substitute for amputation, and unfortunately in both the Federal and Confederate armies resections became too much the fashion, many lives being sacrificed to this modern operation. Every joint and nearly every long bone of the extremities were freely excised, often, as in the shoulder and elbow, with the best results; but in the shafts of long bones disastrously, and in the knee- and hip-joint with the most fatal consequences:

Federal Army Reports to July, 1864.

	Mortality.
Primary excision in the shaft of the femur	84 per cent.
Primary excision of the knee-joint	90 "

Confederate Army Reports to February, 1864.

	Mortality.
Primary excision of the knee-joint	75 per cent.(a)

Where amputation was resorted to as the remedy for gun-shot injuries perforating the knee-joint, the results were as follows:

Federal Army Reports to July, 1864.

	No. of cases.	Mortality.	Per cent.
[b] Amputation through the lower third of femur	243	112	46

Confederate Army Reports to February, 1864.

	No. of cases.	Mortality.	Per cent.
[b] Amputation through the lower third of femur	269	126	46

[a] This percentage would have been larger had all the fatal cases been reported.

[b] Only such cases are engrossed in these Reports as had been traced to their termination at the date of the Report; the many cases not discharged from Hospital are not incorporated.

These results of amputation in the lower third of the thigh for injuries of the knee-joint are so satisfactory that, where the tissues about the articulation are much lacerated or the bones much crushed, amputation will always be resorted to. But there is a class of cases in which the perforating injury to the joint appears trivial, or in which the bones are to no great extent injured, and in which the Surgeon can with difficulty overcome the patient's abhorrence to an amputation. Under these conditions, the experience of Confederate Surgeons in attempting to save the limb gives so satisfactory a result, that it becomes a question whether conservative Surgery may not be more extensively used for gun-shot wounds of the knee-joint than it now is.

The following table was compiled from Confederate Army Reports :

	No. of cases treated.	Cures.	Deaths.	Per cent. of mortality.	Average duration of treatment in fatal cases. No. of days.	Longest period. No. of days.	Shortest period. No. of days.	Average duration of successful treatment. No. of days.	Greatest period. No. of days.	Least period for cure. No. of days.
Knee-joint perforations treated without amputation [c]	103	50	53	52	40	163	15	166	285	96

It may be argued that the successes exhibited by this table must be partially attributed in many cases to the trivial character of the injury, which could not have implicated the cavity of the articulation. An examination into the duration of treatment of the successful cases gives an average of 166 days, the shortest period of successful treatment being in only one case 96 days, which of itself marks in the strongest terms the very serious character of the least dangerous case ; clearly proving the suppuration and the too much to be dreaded suppurative synovitis. Simple flesh wounds in the neighborhood of joints heal usually without difficulty in two or three weeks. It may be presumed that most, if not all, of the cases of knee-joint wounds, retained for conservative treatment, were perforations by balls, without crushing of bones being detected. The Surgical statistics of the Confederate Army would warrant us in treating all such cases without amputation or resection of the heads of the bones forming the joint. For the successful treatment, the patient should be kept as quiet as possible, in a well-ventilated ward or tent, with his nervous system kept at the least stage of irritation by the continued administration of opium. The general condition of the system is to be constantly watched, excretions promoted, and such tonic and supporting remedies administered as will control the circulation, increase the tone of the blood-vessels, and moderate inflammatory action. The most conspicuous of these elements of

[c] A very much larger number of cases had been reported by Confederate Surgeons, but these reports had not been examined or their contents collated when the above tables were compiled. These only include such as had their termination satisfactorily traced in February, 1864.

medication are opium and iron. The limb should be kept at absolute rest, which can be best insured by securing it to a posterior splint, extending from the buttock to beyond the heel. To the surface about the joint are continuously applied cold evaporating lotions, of which iced water is the simplest and best. This, however, can be medicated so as to increase the evaporation and the refrigeration of the external articular surfaces. As soon as the swelling, redness, and pain in the superficial structures with systemic irritation indicate synovitis with suppuration, the joint should be freely laid open, the articulating cavity fully explored, and all fragments of bone or foreign bodies removed, and a free outlet given to the purulent discharge. It is from the apparently bold Surgery of opening freely the joint that the best results are obtained. During the entire treatment of the suppurative stage the best antiphlogistic remedies are found to be nutritious food and the free use of alcoholic stimuli.

In cases in which there was excessive engorgment of the limb, with a general suppurative disposition which, when it occurred, constantly foreboded evil, the most satisfactory results were obtained in a few cases in which the excessive circulation in the limb was suddenly checked by the ligation of the femoral artery. Surgeon Campbell, who introduced this practice into the Confederate military Hospitals, considers it a safe and powerful antiphlogistic remedy. The previous development of vessels under inflammatory progress insures the limb against mortification; whilst the control of the circulation from the ligatare will in thirty-six hours so reduce the size of the limb and arrest profuse suppuration, as to change completely the aspect of the member.

Should the ball in its passage through the knee have crushed the heads of the bones, and the case be deemed too serious to warrant treatment without an operation, the experience of both Confederate and Federal Army Surgeons unanimously condemns primary resection of the knee-joint. In every such instance the life of the patient can best be preserved by amputating through the lower third of the thigh, an operation which army experience proves to be preferable to disarticulating through the knee-joint.

Primary resection of the knee-joint is so disastrous as a field operation, that it should be discarded from field practice by Army Surgeons.—*Medical Times and Gazette, December* 29, 1866.

ART. II.—*Talipes Varus Treated Without Tenotomy.* By J. N. QUIMBY, M. D., of Jersey City, New Jersey.

I WAS called to attend Mrs. Q., Dec. 5th, 1864, who gave birth to a child with talipes varus of the most aggravated form, in both feet, and I resolved to try a method of treatment which I had had in contemplation for some time, viz., the stretching process by means of adhesive strips. So, as a preliminary step, a few days after birth, I ordered the nurse to wash and rub the child's feet and legs twice

a day for two weeks, with a lotion composed of two parts of water to one of alcohol, and adding to a pint of this solution 3ss. of alum. After this hardening process had been continued for two weeks, I then applied the adhesive strips in the following manner: I used three pieces; one being cut so as to fit and cover the entire sole of the foot. This being applied, the second piece is cut in the form of a parallelogram, an inch and a half wide, and long enough to extend from the hollow of the foot to the knee, on the lower end of which there is an expansion of three inches, which forms an angle of 80° or 90°, so as to extend from the plantar surface of the toes to the hollow of the foot, the foot being held in proper position by an assistant. The third piece is cut of sufficient width to extend from the hollow of the foot to the heel, and extending up the leg to the same height as the other. A roller bandage is then applied, commencing at the toes and extending up to the knees, serving to keep the plasters adherent to the limb. During the first two weeks of the treatment, the bandages were changed every day and the plasters twice a week, at the same time pretty thorough passive motion was made. During the third week the bandages were changed every other day, and the plasters only once; and in the fourth week the bandages were changed twice a week, and the plasters whenever they became slackened; and this manner of treatment was kept up for two or three weeks, when the improvement was so great that I found it was not necessary to remove the bandages and plasters only as they became displaced. The treatment was continued for three and a half months, since which time she has worn nothing but a common shoe, and her feet are perfectly restored, there being not even the turning in of the toes, which is so common with children who have suffered from this deformity.

Since treating the above case, I called the attention of Prof. A. C. Post to the method, and he having thought well of it, and having occasion to use it in his own practice, has modified the cutting of the adhesive strips, which I think, in most cases, is or will be an improvement over my own. He uses but one piece, cut something after the manner of his gutta percha shoe; so as to cover the entire surface of the foot with a small projecting tongue, to include the plantar surface of all the toes, and then forming a right angle with the strip, extending it up the outer surface of the leg as high as the knee; then he encircles the limb with an additional piece of adhesive strip just above the ankle. I was led to this experiment from being called upon to operate on two weak and scrofulous children, where, after complete restoration of the feet, there was and is a weakness of the ankle-joints, which I think may be attributable somewhat to the division of the tendon and to the confinement which is necessary to keep the foot in proper position, which from the pressure has a tendency in a greater or less degree to impede the circulation and retard the development of the limb.

I should like to call the attention of the medical profession to a few important points in reference to this method of treatment.

First: That the feet can be completely and perfectly restored, however aggravated, to all their functions, without the division of

any of the tendons ; when taken at the early period of from three to six weeks, and without even the turning in of the toes, as is the case with the present subject.

Second : The short space of time required for the perfect restoration, and that all the cumbersome shoes with steel splints, etc., are dispensed with.

Third : That it causes less suffering to the little patients, and is not so liable to cause irritation, ulceration, or sloughing of the integument, as is sometimes the case with other methods.

Fourth : That the utility of this treatment is such, that it is not confined to a few expert surgeons ; but that every medical man, however remote, in his rural practice, may use it with benefit to his patients.

Fifth : I think it has a decided advantage over any other method of treatment with children of a strumous cachexia, as it does not in any way confine or retard the development of the foot and limb, and is therefore less liable to be followed by weakness of the ankle-joint, and that the child can stand upon its feet, if it be old enough, while under treatment, thereby allowing nature to assist in its restoration.—*(Phil.) Medical and Surgical Reporter*, March 16, 1867.

ART. III.—*Syme's Operation as Basis for Artificial Foot.*

AT a regular meeting of the "*New York Medical Journal Association*," Dr. E. D. Hudson remarked upon "The value of Syme's Amputation at the Ankle-joint, in adaptation of an Artificial Foot," as follows :

No amputation of the inferior extremity can ever compare, in its value to the subject, with that of the ankle-joint originated by Mr. Syme. Twelve years of experience with that variety of operation has afforded me assurance that it is not capable of being improved in its general character. It is scientific ; practically of the utmost use, and subservient to the best interests and happiness of the patient.

Mr. Fergusson avowed that he "knew of no kind or style of amputation which deserved more high considerations ; and so far as the subject is concerned, it is one of the greatest improvements in modern surgery." No other operation has resulted so beneficially and satisfactorily. The subjects of such an amputation scarcely realize their loss with a proper artificial appliance. They appear every way whole.

The sensations of the stump are normal ; the articular surface and thickened tissues are accustomed to the hardest service, and to bear the heaviest burdens, which, with apparatus, enables the patient to engage in his accustomed walks and vocations with unabated naturalness and endurance. One gentleman, for whom I applied a foot, has walked thirty-five miles in a day, on a hunting excursion, while his companions did not suspect that he was otherwise than

whole. So beneficent have been the results of this operation, as to have induced many a sufferer from congenital malformations, varieties of talipes and troublesome Chopart operations, to demand it as an "amputation of convenience."

It is an operation that has for its support the soundest principle of surgical economy. It retains, in addition to the entire length of leg, nature's foundation, the articular portion of the shaft of a long bone, as a base of support. Its accustomed service is concurrent and coequal with that of the calcaneum, to sustain the weight and forces of the body which are reflected to it. To remove the calcaneum, and substitute the articular base of the tibia, is merely a change of place, not of function. A cogent reason in support of amputation of the ankle-joint is, that to the compacted hardened tissue of the lower termination of the tibia are transferred and united for a cushion the thickened tissues, which have effectually served to protect the os calcis. The place of those tissues is changed; their accustomed function is unchanged and normal. When the change of base and healthy union of the hard and soft parts are successfully perfected, the same condition and serviceableness of the end of the stump is gained as that of the natural heel. After a very short period of exercise the sensations become perfectly natural, and the end of the stump as enduring as the heel of the natural foot. I have been led to take very great interest, and to a persistent advocacy of Mr. Syme's method, by a regard for the humane principles of rational conservatism, and by the numerous cases of ankle-joint amputations, which have demonstrated to me the superior utility of that operation to any amputation of the leg, or any modification of the general one of Mr. Syme. Of fifty recent cases which have come to my hands for final treatment by mechanical means, not one has failed of a highly gratifying success. Both patients and surgeons who have witnessed their results, have been every way pleased with their exceeding benefit. Not every subject is in immediate condition for the adaptation of apparatus, for reasons that will readily be apparent to every surgeon.

Some require treatment for ulcerations, thickened tissues, swellings and tenderness; others require some inuring treatment before the application of apparatus. In no instance do I venture to apply apparatus until the patient can endure the end of the stump upon either the bare floor or some unyielding support with ease.

Case. Captain ———, who had suffered an amputation of the ankle-joint—Syme's method—was brought to me for treatment. I found his stump admirably well formed and healthy, except a little prickling sensation produced by hard pressure. After ten days of preliminary treatment, during which a casement and foot were fitted, and trials made, the prickling had entirely subsided, the natural sensation of the heel was restored, and the patient went out walking without inconvenience. The sensation of prickling is no unusual complaint for persons to make, who have suffered an injury of the tissues of the heel or foot, when they have so far recovered as to begin to exercise the part. It is a mere temporary sensation, which exercise soon converts into a normal one.

The objections to Syme's operation—tenderness, unsoundness, and unreliableness as a basis of support, after the stump has become well healed—are untenable.

The practice of Mr. Syme (original method) to exsect the indurated tissue, the most depending and most serviceable feature of the tibia, thereby exposing the cancellated structure, and also to remove the malleoli through their base on a level with its articular surface, is unphilosophical and inexpedient. The increased vascularity of the cancelli must necessarily conduce to protract the tenderness of the face of the stump. Some surgeons strive to enlarge the base of support afforded by the tibio-tarsal surface, by sawing the malleoli off, at a line transverse with the end of the tibia ; but the practice is entirely unnecessary, and in some respects prejudicial. The inter-malleolar space is the only true and all-sufficient base of support ; any additional surface is superfluous ; and by increasing the periphery of the end renders it unduly large for the adaptation of symmetrical apparatus. The articular surface should not be molested. The malleoli should be exsected with the saw, at a beveling angle of some forty degrees. The most serviceable and best proportioned stump is thus composed. With the dense ivory structure, the cancellated and medullary tissues all preserved, other matters being equal, we may rationally anticipate the best results. The modified variety of Bauden's, the dorsal flap, or that of Roux, lateral flap, will never be chosen varieties, but adopted as a dernier resort only. Even when the operation is thus modified, the stump is eminently superior for utility, and the entire pressure upon its face to any amputation of the leg. I have had two cases of the bilateral-flaps variety, made for want of plantar tissue, and cicatrized over the end of the stump, and one of the dorsal variety, upon each of which the patients bore their entire weight on an artificial foot with the utmost comfort.

The compensative apparatus I was the first to originate and apply in the United States ; nor am I aware of any like legitimate treatment abroad. With it I have invariably made the face of the stump the basis of entire support, and with no intervening substance other than one or two thicknesses of soft flannel. The apparatus is composed of a light semi-cylindrical wooden case for the leg, receiving the bulbous end of the stump in a concavity, at its lower end, fitted snugly to the posterior half of the parietes of the stump and leg, for two-thirds of its length, while its base is entirely supported. Wide leather bands lace up over the anterior half of the leg, to keep it in situ.

The case is strengthened with strong hickory pins, so dovetailed as to prevent its splitting or yielding to the weight of the body. To the leg and stump case an artificial foot of natural size and shape is attached by a strong ginglymus ankle-joint, on a line nearly parallel with that of its mate. An artificial tendo-Achillis passes up from the heel through an inclosed groove into the calf of the casement, where it is strongly inserted. It preserves the foot at a right angle with the leg part, when the weight of the body passes over and forward upon the ball and toe-piece of the foot. The latter is made to hug the ground, the same as the toes of the natural foot, by a strong lever and rubber spring. When the heel strikes the ground, the anterior part of the foot is depressed, but elevated sufficiently by rubber flexor springs, when the weight is off, to prevent

tripping. The apparatus is covered with green rawhide, dried and contracted on, and coated with a neat flesh-colored enamel. It may be dressed with stocking, shoe, or boot, at pleasure, the same as its fellow. With its application, the patient is, to all appearance and for usefulness, restored to a normal condition. I repeat: The great and important feature of the Syme operation at the ankle-joint is the natural philosophical basc of support which the method retains, and the opportunity it affords by a sufficient shortness, for the adaptation of a compensating artificial foot, and a ginglymus ankle-joint in a proper place.

The main and defensive feature of M. Pirogoff's modification is the increased length of stump created by the excision of the tibia and calcaneum, and the annexation of a greater or less portion of the latter to the former, for the service of the "*poor man*," with the application of a "bucket" or "boot."

Every physiological anatomist must readily perceive that the increased length of the stump, by an adventitious portion of the os calcis, will, in the ratio of its increased length, necessarily impair it for the application of legitimate mechanical appliance.

Statistics furnish abundant evidence that it possesses no superior advantage as relates to mortality, sloughing, necrosis, or other untoward events, over the Syme method; *nor even as a reliable basis of support;* only to secure the benefits of an *os peg-leg*—the similitude of the wooden relic of barbarity. Science having for its true object practical and humane use, it becomes unwise for men to exercise their brains for unscientific purposes.

The special interests of the subject of an amputation of the inferior extremity are the matters of importance—"and how the patient may *most fitly* use the rest of his leg by walking on an artificial leg." No artificial leg has been or can be constructed and adapted to any stump of the leg, having its parietes for support, with such perfect favor as that which I adapt to ankle-joint amputations. The same apparatus modified may be applied to the Pirogoff modification, but the result is far less satisfactory.

I never have a patient of a Syme amputation make use of a cane nor walk in any other than the most natural gait. There is one condition of the ankle-joint in which the Pirogoff method may be adopted to the very great benefit of the patient, viz., where caries, necrosis, or injury of the tarsal end of the tibia precludes the possibility of the Syme method, and would render the Pirogoff method a valuable alternative to an amputation of the leg at its lower third.

In any such event, to excise the diseased tibia and a sufficient amount of the calcaneum, and annex to the tibia to compensate its loss by excision, would be an additional fact to surgical improvement—a worthy expedient—but only as an alternative to amputation of the leg. It would make the leg of normal length, and alike serviceable as a Syme case for the adaptation of an apparatus.—*(Phil.) Medical and Surgical Reporter*, March 23d, 1867.

ART. IV.—*New Method of Treating Phymosis.*

DR. ELLIOT COUES, Assistant Surgeon, U. S. A., describes, in the *Medical and Surgical Reporter*, a new and ingenious method of overcoming phymosis, by which a cutting operation is avoided; an improvement of much value in cases complicated with syphilis, where the edges of the incision, as ordinarily practised, are so apt to take on the specific disease. From his history of a case we take the following extract:

"Fully aware of the probable unpleasant consequences of cutting, and seeking some other *modus operandi*, the idea of overcoming the constriction by mechanical dilatation struck me as offering a reasonable hope of success. Acting upon the suggestion, I introduced within the constricting ring the closed points of an ordinary spring forceps. A few minutes' manipulation produced a sensible enlargement of the stricture, encouraged by which I left the instrument *in situ*, where it was retained by the resiliency of the blades, which was also to be a continuous operative force. The patient was directed to occasionally employ a moderate degree of manual force, by pulling the blades apart, and to assiduously foment the parts with warm water. The procedure produced no pain nor other inconvenience. *In three hours* the glands could be exposed; shortly afterward the whole glans popped out of its awkward hood, and the prepuce was fully retracted. The success of the experiment was as evident as the necessity for it. Two ulcers were disclosed—one on the dorsum of the glans as large as a dime piece, irregularly circular, excavated, covered with a tough gray slough, and rapidly extending, as the painful, deep livid, ragged edges testified; the other, on the prepuce just back of the corona, of the same general character as the first, but smaller, resembling a split pea in size and shape. These ulcers had been three days only in changing from the appearances they presented when first seen, as already detailed. A relapse of the phymosis was prevented by occasional recourse to the forceps, and the ulcers readily healed under appropriate treatment.

* * * * * * *

"Taking a hint from the forceps, I have devised a simple little instrument by which any desired degree of dilating force may be employed, and graduated to a nicety. It is merely a pair of callipers, about three inches long, probe pointed, the two blades flat, bevelled on their outer edges, and divaricating from each other by means of a screw placed near their hinge, running through one blade and abutting against the other."—*Boston Medical and Surgical Journal* April 25, 1867.

ART. V.—*Diptheritic Ophthalmia.*

DIPHTHERITIC Ophthalmia is not admitted by all pathologists as a distinct variety. According to most, it is only a complication of purulent ophthamia; according to others, among whom is M. Le Fort, it is only a simple plastic ophthalmia. However, we do not see why diphtheria, producing the membranous inflammation

which affects the nares, the vagina and even ulcerative portions of the skin, should not fix itself upon the conjunctiva, and constitute a true diphtheritic ophthalmia, having, besides its anatomical character appreciable to the eye and to the microscope, symptoms, progress, prognosis and treatment entirely proper to itself. We remark that this is not merely a fancy of our own, but that according to deGræfe, Wecker, Mackensie and Giraldès, there exists clinically a diphtheritic ophthalmia, having neither relation nor analogy with purulent ophthalmia. Those of our contemporaries who desire to investigate this subject and learn the state of the question, will, moreover, read with interest the inaugural thesis maintained on this important point of ophthalmology, by Dr. Cyprien Raynaud. We shall limit ourselves to giving here the brief sketch made by M. Giraldès.

All the predisposing causes of diphtheria in general lead to diphtheritic ophthalmia ; and when this predisposition exists, any alteration of the lids or globe of the eye suffices to light up the ophthalmia in question ; but in this case, as in croup, the local malady is probably the consequence of a general affection. Hence the vast difference between purulent ophthalmia, an affection always local, and diphtheritic ophthalmia, which is only a manifestation of an infectious malady affecting the entire system.

This ophthalmia is excessively painful, and differs from purulent ophthalmia by the very persistence of this painful condition, by the higher temperature and greater swelling of the eyelids. Instead of being very red, injected and vascular, the conjunctiva is discolored, pale, of a yellowish white, owing to the presence of false membranes more or less thickened and adherent, with the elements of the conjunctiva infiltrated as well as the tissues of the lids.

Such local alterations, engrafted on a grave general condition, necessarily render very serious the prognosis of diphtheritic ophthalmia. It is then extremely important to seize without hesitation its therapeutic indications, and to oppose the most effectual remedies to the progress of the evil.

M. Giraldès cauterizes from the beginning with solid nitrate of silver. If the child is intractable, it is subjected to an anæsthetic, the lids are turned back, the false membranes wiped away with a compress saturated with dilute citric acid, the eye washed with tepid water, and the palpebral conjunctiva lightly touched with the caustic without touching the ocular conjunctiva, after which irrigation is used for five minutes. The cauterization thus made is continued five or six days in succession, and as it is very painful, it is discontinued if the effect is not favorable.

The irrigations used 12 times in 24 hours, five minutes each time, with water at a temperature of 12° to 15° (Cent.), are excellent, and we shall commend especially those which M. Giraldès directs medicated (water, 5 *litres;* Sydenham's laudanum, 10, 15 and 20 *grammes*). This plan is much used at the Children's Hospital, and succeeds admirably. In such cases the application of compresses saturated with the same liquid can be joined to the irrigations, or a more direct means substituted for the compresses and irrigations—a collyrium of one *gramme* of laudanum to 100 of distilled water. These medicated applications counteract the atrocious pains, restore vitality to the tissues and resist incipient keratitis.

We have said that compresses saturated with dilute citric acid serve to remove the false membranes. The juice of the lemon, well clarified, can be used for the same purpose.

Another agent, much pr ised in croup, is employed by M. Giraldès in diphtheritic ophthalmia—chlorate of potassa. This salt is used externally and internally. For external use, the solution consists of 5 *grammes* to 100 of distilled water. After wiping clean the inner surface of the lid, the so'ution is applied with a brush, and then camomile water is injected. From 2 to 8 *grammes*, or more, are given daily in a mucilaginous draught; but the topical use of the salt frequently is above all recommended by M. Giraldès.

Join to these measures tonics—cinchona (extract, syrup and wine), the syrup of the iodide of iron—nourishment at first light and infrequent, then restorative, and you have the chief elements of medication opposed by the surgeon of the Children's Hospital to an ophthalmia there very common, which, in the order of their respective importance, are cauterization, medicated irrigations, chlorate of potassa and tonics.—*Jour. de Med. and Chir. Prat.*, March, 1867. [*Tr.* S. S. H.]

ART. VI.—*Removal of Foreign Bodies from the Œsophagus.* By DAVID RICE, M. D.

A NUMBER of years ago, I reported for the *Boston Medical and Surgical Journal* a new method of removing foreign bodies from the œsophagus. Since that time I have had a number of cases of the lodgment of foreign bodies in the œsophagus, and have never failed of removing them by the method of which I claim the discovery, viz., by the sponge probang. The sponge probang has been used from time immemorial for this purpose, but it is the *peculiar shape of the sponge*, and the method of using it, that I claim as originating with myself. No longer ago than last week, I removed from the œsophagus of a lady a long piece of bone, which had remained there three days. The bone was about two lines in diameter, and one and a half inches long.

CASE.—Mrs. F., a lady 60 years old, swallowed a piece of bone with some meat, which became lodged in the œsophagus. She sent for me the following day. When I arrived, she said she felt better than on the preceding day, could swallow water, and begged to have any trial for the removal of the foreign body deferred. On the fourth day I was called again, and found her suffering great pain, with extreme difficulty in swallowing even fluids. I immediately introduced my sponge probang, and without the least difficulty succeeded in removing the piece of bone, together with a piece of beef. In fact, I have often removed pieces of bone, beef, needles, &c., in the manner formerly described in your journal. The instrument I use is a whalebone probang, small and elastic, in size about the diameter of a penholder, or perhaps one eighth of an inch in diameter,

curved at the lower end. On the inside of the concavity I fix at the lower extremity a piece of sponge, in the shape of a cone about an inch in length, very sharp at the bottom, and tapering gradually to the base, which is about one half an inch in diameter when dry. The apex of the cone is fixed firmly to the bottom of the probang, about one half being left floating. The base of the cone, being upward, is cut perfectly square on the top. I apply oil of almonds to the sponge before introducing it. Being very soft, it easily passes by a foreign body lodged in the gullet, and on being withdrawn, the round, flat base can hardly fail of finding and bringing up the foreign body in question. Your readers will observe that it is the peculiar shape of the sponge that renders success so certain with my sponge probang. The probang and sponge should be well oiled before an introduction is made into the œsophagus.—*Boston Med. and Surg. Jour.*, March 2d, 1867.

Medical Pathology and Practical Medicine.

ART. VII.—*The Fever Thermometer.* By NOMUS PAIGE, M. D., of Taunton.

NO reliable information of the heat of the body can be obtained without the thermometer, for the knowledge afforded by the mere sense of touch is so inaccurate, and the perceptions of the patient are often so fallacious, that any opinion founded upon them must possess but little if any scientific value. Some physicians have objected to the thermometer, urging that the expressions cool, moderately cool, warm, hot, pungent, etc., which are in such common use at the bedside, are sufficiently definite for practical purposes, and that the instrument is an unnecessary incumbrance.

But these objections are not weighty, for if even an approximate estimate of the heat of the skin is of any benefit to us, it must be of far greater use to know its exact temperature. And I think that no one who strives to attain any degree of correctness in diagnosis would persist long in mere guessing, if he possessed the means of measuring accurately. That we now possess this means, no one seems to doubt. The practical use of the thermometer is based upon the following pathological principles :

1st. All febrile and inflammatory diseases are attended with a morbidly increased temperature of the body. Conversely, in non-febrile and non-inflammatory diseases the heat of the body is not morbidly increased.

2d. The temperature is morbidly increased in almost every case of acute disease.

3d. A continued variation from the normal temperature is a certain indication of disease.

4th. All diseases have their own typical range of temperature, any sudden deviation from which indicates either a dangerous severity or intercurrent complication.

5th. An important exception to the rule that in non-inflammatory diseases the heat is not above the normal standard, should be made in the class of tuberculous diseases. In this class the temperature is always morbidly increased during the stage of activity, and the type embraces a greater range and also less regularity than it does in most other diseases.

6th. Variations in the frequency of the pulse and temperature of the skin are generally concurrent symptoms. But they may be neither contemporary nor proportional.

The average standard of health, taken by the thermometer in the axilla, is 98-4° Fahrenheit. A variation of one degree from this standard, under different circumstances of climate, exercise, etc., is consistent with a state of health ; but a rise above 99-4°, or a fall below 97-4°, affords reliable evidence of disease. The highest altitude of which I find any record occurred in a case of pneumonia, and was 107-2°. The lowest was in the collapsed stage of cholera, and was 94-7°. In both instances the record was made a few hours before death. From this it is evident that the scale of defervescence is not large, as it embraces within a fatal maximum and minimum only 12-5°. And ordinarily the scale might be reduced to a variation of only ten degrees, as the cases above mentioned were very rare extremes.

The thermometer in general use is graduated from 80° to 112° Fahrenheit, with each degree subdivided into fractional halves. This extended scale renders it useful for other purposes in the sick room, such as regulating the temperature of liquid ingesta, baths and enemata. For estimating the heat of the skin, the bulb is to be placed in the axilla and retained from three to five minutes.

A sudden fall of the mercury is as grave a symptom as a sudden rise ; neither of which, within the ordinary limits under favorable circumstances, need be considered a sign of serious import, and either of which, under unfavorable circumstances, should be considered a critical symptom. For instance, the oscillations of temperature so characteristic of intermittent and remittent fevers, also of the premonitory stage of other diseases, are not alarming symptoms. And the progressive decline of the mercury in the latter stage of any acute disease is a sure indication of convalescense. But when the deviation is not in accordance with the known type and stage of a given disease, and we find a high temperature where we expected a low one, or *vice versa*, it is an omen of danger, which should not be lightly evaded, for we may be sure that something is wrong.

In typhoid fever, the typical scale during the early stage is from 101° to 103-5°. Persistence at a higher altitude indicates a dangerous degree of severity. A sudden rise of several degrees, especially in the latter stage, is a sure sign of an inflammatory complication. A depression of four or five degrees indicates severe intestinal hæmorrhage. During the first few days of this disease it is often difficult, if not impossible, to diagnosticate with any degree of

certainty, as the general symptoms are contradictory and possess no positive meaning. In such cases, if the thermometer indicates a permanent increase of three or four degrees, the existence of typhoid fever is highly probable.

A few months since, a young man, 18 years of age, and by occupation a farmer, presented himself to me with the following symptoms: Had been "feeling badly" for about ten days; slight headache; tongue lightly coated; urine high colored; some diarrhœa; pulse 86. He had no chills; his appetite was not much impaired; his bowels were not tympanitic, and he was performing his regular work upon the farm.

Was this a case of simple malaise, autumnal diarrhœa, or typhoid fever? It did not seem to me easy to decide. But on applying the thermometer to the axilla, the mercury rose rapidly to 103. This enabled me to exclude the two former, and the patient was accordingly warned that his disease was probably typhoid fever, and was advised to take his bed, which he was soon glad to do.

Three days after, the symptoms had become well marked, and indicated a case of rather more than usual severity. On the ninth day, there were perceptible signs of convalescence, and the case progressed finely until the thirteenth day, when his symptoms were as follows: Very slight meteorism of the bowels; pulse 76; tongue and teeth clean; no delirium, and a moist skin, the temperature of which was 99. A speedy convalescence was predicted. On making my evening visit, eight hours after, I found him apparently comfortable, but a slightly corrugated appearance about the eyebrows arrested my attention. The pupils were slightly contracted, and he complained of a disagreeable feeling in the head, although no pain. He was in an unusually happy frame of mind, which was the more noticeable as the degree of exhilaration was equal to that caused by the taking of cerebral stimulants. His pulse was a little quicker; otherwise his symptoms were unchanged. There was no suppression of the urine, and he had taken no opiates. Had had considerable company during the day.

Were these symptoms owing to simple fatigue, or to the advent of cerebral disease? The thermometer indicated his temperature at 105°, a rise of six degrees in eight hours. From this fact, I judged that meningitis had supervened, and an unfavorable opinion was at once given. The prognosis was confirmed on the following day by his death, preceded by coma and convulsions.

In making a differential diagnosis between the different forms of hysteria and the diseases which they so often simulate, I have found the thermometer of almost invaluable aid.

A few days since I was called to a maiden lady, 30 years of age, and found her condition as follows: She had been out the day previous, and wet her feet, which was followed in the evening with chills and cephalalgia. Her temperament was nervous, and her health had been frail for a long time. At the time of my visit, she complained of intense pain in the head, rigidity of the cervical muscles, slight strabismus and great intolerance of light. Pulse 98, and tongue white. Her suffering was apparently intense. She had menstruated regularly ten days before, and this was the first attack of the kind she ever had. Her symptoms were of no slight

gravity, especially in these times of cerebro-spinal meningitis. But on careful examination with the thermometer, I found her temperature to be perfectly normal. Consequently my diagnosis was hysteria, and a warm bath, with ten grains of Dover's powder, were ordered. She recovered on the following day.

In the incipient stage of pulmonary tuberculosis, the instrument often enables us to make a positive diagnosis and prognosis, when without it we could at best only conjecture. An illustrative case of this kind has recently come under my observation. A machinist, 24 years of age, who had had two or three attacks of hæmoptysis within eighteen months, was seized with pleuro-pneumonia of the left side. The disease, though violent at first, had nearly subsided at the end of three weeks. A small quantity of fluid remained in the left pleuritic cavity, which occasioned but little inconvenience. He was apparently convalescing very finely. But the heat of the skin remained persistently at 101. This I considered an indication of tubercle, though I could detect none. I gave an unfavorable opinion, but as the friends could not see the need of further attendance, I left my patient under protest. A week later I was recalled, and found my suspicions confirmed by a set of symptoms which indicated plainly that a rapid deposition of tubercle was going on in the upper part of the right lung. His average daily temperature was now from 102 to 103. He died three weeks after, of acute phthisis.

I have found the thermometer quite as useful in the diseases of children as of adults. It is especially so when we find it necessary to exclude from a doubtful group acute hydrocephalus.

Also, it is a point of some interest to note the exact fall resulting from the administration of antimony, veratrum viride, and the warm bath.

My experience in the use of the fever thermometer, though as yet limited, has convinced me of its great practical utility. It has brought to the light of the profession one of the most important phenomena of disease and endowed it with a clear and definite language. He who reads it correctly and brings the principles upon which its use is founded to bear upon his daily practice with an intelligent discrimination, cannot fail to attain a higher degree of efficiency in his diagnosis and prognosis.—*Boston Medical and Surgical Journal*, June 6 and 20, 1867.

ART. VIII.—*What is Tubercle?*

THOSE who listened to the debate at the Pathological Society on the evening of the second of April, could hardly fail to put to themselves in dire perplexity the question—What then is tubercle? We do not say that we can answer the interrogation either to our own satisfaction or to that of any one else, but we may succeed in laying the matter in dispute plainly and intelligibly, as far as our knowledge at present extends, before our readers.

Originally, of course, the word tubercle bore with it no distinct meaning beyond the idea of a small tumor; but Laennec, applying it to the diseased condition so often encountered in the lungs, spoke of tubercular granulations and infiltrations, in the latter term departing entirely from the original idea of tubercle, besides bestowing upon it a character of specificity. What then was this specific product, for there were and are recognised two varieties of tubercle—the grey or miliary, and the yellow or crude? According to Bayle, the grey granulations were non-tubercular; Laennec, on the other hand, regarded them as essentially so—in fact, the invariable precursors of the yellow or crude variety of tubercle; whilst most moderns look upon them as the only correct representatives of that substance. Until lately Laennec's view has been the one accepted in this country, yellow tubercle being looked upon as the ultimate result of the miliary, although by many the cheesy stage was accepted as a starting-point for the interpretation of the whole process of tuberculisation. Miliary tubercle was supposed to be the result of inflammation and consequent exudation, but, the blood being vitiated and the constitution depraved, the effused product assumed this imperfect form instead of that ordinarily investing healthy lymph. The granular tubercles thus formed were supposed to be incapable of reproducing themselves, having no power of cell formation, and consequently only increasing by accretion. They involved none of the surrounding tissues, only appearing to affect them as any foreign body would, whilst, being gifted with but a lowly organisation, they were extremely liable to degeneration. In this way the large cheesy masses encountered in the lung were supposed to be produced, and these masses were by many accepted as the true representatives of tubercle. Still, till recently, no one doubted the accuracy of the views just cited, but two great blows were struck, and the stability of these doctrines, thus roughly tested, was found to be deficient. Probably the first of these in point of time was the discovery that the cheesy mass constituting crude tubercle was very far from being invariably of a tuberculous nature; in fact, after a certain stage, it could not be made out whether the mass had been originally tubercular, or was the degenerate remains of pus, cancer, sarcoma, or pneumonic deposits. The other was Virchow's discovery of the history of tubercle, and his tracing it through all its stages, from its earliest origin in connective-tissue cells, to its final softening and expulsion. By the former, the unfailing certainty with which any cheesy mass encountered in the lungs or elsewhere was pronounced tubercular, was rudely dispelled; by the latter, the inflammatory and exudative origin of tubercle was treated in a similarly summary manner. As a further consequence of the discovery of the essentially cellular nature of tubercle, its type is no longer sought for in its commonest situation, the lungs, but in other organs whose constituents are of a less perplexing character—as, for instance, in serous membranes. There the proliferation of badly formed and nourished connective-tissue cells may be readily observed, their products assuming that shrivelled, unwholesome, and granular aspect seen in tubercle. One situation seems to be peculiarly well adapted for examining the growth of tubercle—that is, the lining membranes of the skull and coverings

of the brain; yet many French observers, including no less an authority than Robin, hampered by the old notions as to the cheesy nature of tubercle, refuse to accept the bodies produced there as tubercular. Recent researches by Dr. Bastian as to the origin and growth of tubercle in that situation would seem to prove that meningeal tubercle does not originate from connective-tissue corpuscles, but rather by the excessive proliferation of the epithelial cells and nuclei lining a series of peri-vascular canals which have been demonstrated by His to surround the vessels of the brain and meninges. There the process of proliferation goes on at an increased rate, but for want of proper nourishment the cells become worse and worse formed, and their contents more and more granular, until the mass almost entirely loses its cellular character. There is no exudation, but the deteriorated quality of the blood influences the process so far as to give rise to a granular instead of a cellular product. Is this, then, inflammation? Essentially it is, for according to the doctrines of the new school inflammation only consists in excessive proliferation of cells, accompanied by certain manifestations of local and general disturbance.

But of late the matter has assumed an entirely new aspect by the experiments of M. Villemin. Investigating the history of tubercle, and seeking some more satisfactory information as to its origin than had hitherto been given, M. Villemin was induced to try the effects of inoculation. A small quantity of that substance was introduced into a little wound behind the ear of a rabbit, and the opening closed. When examined, tubercle of the grey or miliary kind was found in various parts of the body, particularly in the lungs. The experiments were repeated again and again, but in all cases with a like result, and M. Villemin came to the conclusion that tubercle was thus transmissible from one being to another. Other experimenters came forward, among them the famed Lebert, who also confirmed Villemin's results. The attention of many of our indefatigable pathologists being thus drawn to the investigation, they, being far from satisfied with the accuracy of the experiments, resolved to undertake fresh ones for themselves. Among others, Mr. J. Simon and Dr. Andrew Clark had been working at the subject, and both laid their results before the Pathological Society. In some very important particulars Mr. Simon's results differ from those of previous investigators. Thus he made use of yellow or crude tubercle, a product which, as we have already seen, is of by no means a certain origin; even of this he used but a very small quantity, which was introduced into a wound of, comparatively speaking, a small size; further the substance produced possessed more of the characters of crude than of miliary tubercle, and this was found in various parts of the body.

Dr. Andrew Clark had made use of grey tubercle, and had succeeded in producing something resembling grey or miliary tubercle, but which he maintained had altogether a different structure, being distinctly cellular in its texture and having characters identical with the products of lobular or epithelial pneumonia. This product, he maintained, had not the same destructive influence on life as tubercle in the human subject had, and as to its being miliary tubercle, the eye alone was not a sufficient test. But by far the most important

point was that *he had been able to produce similar matter by inoculating with substances of a non-tuberculous nature*, as cancer and pus. Further, he argued, were tubercle so readily transmissible, why do we not more frequently find the husband infect the wife, and *vice versa?* And so the matter rests.

Shortly, the facts may be stated thus: The true or miliary form of tubercle seems invariably to originate by the proliferation of certain cells, the products, from the vitiated condition of the blood, being more or less imperfect (Virchow, Vulpian, Bastian). Some local stimulus is, however, wanting in addition to the ordinarily deteriorated state of the constitution, and this may be supplied by the introduction of miliary tubercle (Villemin, etc.), by crude tubercle (Simon), or other morbid substances (Clark) into the system. The products of the cell-proliferation would seem, however, probably from the healthy condition of the animal, to possess more of a cellular and less of a granular character than in man (Clark). It is obviously foolish to talk of the immediate product of Mr. Simon's experiments as crude tubercle—a decaying or degenerating substance; it may have been of the nature of miliary tubercle originally, or it may not; but to suppose that this half-dead matter was the *immediate* result of introducing other half-dead matter into the system is absurd.

Stripped of all garnishing, these are the facts. As yet they are too scanty in number to allow of any extensive generalisation; but the field is now filled with able and willing workers, and we hope that before long the veil will be raised still further, and we shall have a nearer insight into this most interesting morbid process.—*Medical Times and Gazette*, April 20, 1867.

Art. IX.—*Milk Diet in Inflammatory Diarrhœa.*

IT seems that milk and diarrhœa ought to agree well together, that the first may remove the second. We believe, in short, that milk sometimes causes diarrhœa, whence the proscription of this aliment in diarrhœal flux. But this, according to Prof. Pécholier, is too sweeping an opinion, and it is controverted by the author of "Indications for the Use of Milk Diet in the Treatment of Different Diseases."

First, we agree with M. Pécholier, that milk is not suitable for all cases of this complaint. When it depends on a gastro-intestinal derangement, or is connected with an atonic state of the digestive mucous surface, milk can only aggravate it. But in all the forms of diarrhœa which relate to gastro-intestinal irritation, in infantile enteritis, we can reckon almost certainly on the good effects of milk diet.

When an infant is too soon put on other diet than milk—that is to say, before the age of six months—above all, when it has been weaned too soon, diarrhœa is the accident most to be apprehended. Now if this diarrhœa is severe and persistent, safety requires the infant to be put again on milk diet. If the little patient will take the breast, it is fortunate; if not, there will be a great advantage in giving cow's or goat's milk as its sole subsistence. Under these circumstances the diarrhœa depends on an entero-colitis, as is shown by the great pain and heat of the abdomen, the fever, the green stools, warm and excoriating the skin of the buttocks. Subsequently, at the age of fifteen months to two years, when the canine and second molar teeth appear, we still find rebellious diarrhœas, accompanied with the same symptoms as above. The infant rapidly emaciates, its eyes grow hollow, there is extreme prostration, and death is imminent. Now a strict and well regulated milk diet may bring about a true resurrection.

In this case, of which M. Pécholier cites several examples, tonics and astringents must be abandoned. A cup of coffee with cow's milk is given, diluted one half with water and a few drops of lime-water, every two hours; also fifty *centigrammes* of subnitrate of bismuth three times a day are administered, together with enemata of flax seed mucilage and starch. Improvement may be observed the same day; two days after the subsidence of the fever, the quantity of milk is increased, to which is added later a little bread and sometimes sour wine. Among the number of cases reported by the author is that of a child one year old, attacked with choleraic entero-colitis. After some fruitless trials, the following treatment was adopted: Every quarter or half an hour one or two table-spoonfuls of iced milk, diluted with one-third of water and a few drops of lime-water, were given, to the exclusion of every other drink and aliment. Every two hours two dessert-spoonfuls of *Rivière's draught*, with one drop of laudanum, were given; twenty *centigrammes* of subnitrate of bismuth three times a day; a poultice on the abdomen; two enemata daily, of thirty *centigrammes* of extract of rhatany and one drop of laudanum. The good effects of this medication were immediate, thanks to the vigorous observance of the prescriptions, and convalescence was plainly established after a fortnight of strict regimen.

The circumstances which warrant the use of milk diet in infantile diarrhœa, ought to teach us those which indicate in the adult the same treatment. In diarrhœa complicated with gastro-intestinal irritation the milk regimen will succeed, while it is useless, and even dangerous, in saburral and atonic diarrhœa. Milk offers the double advantage of being a local emollient and sedative for the irritated mucous surfaces, and of furnishing an aliment sufficient, easily assimilated, and consequently not exhaustive to the alimentary canal.—*Jour. de Med. and Chir. Prat.*, March, 1867.

[*Tr.* S. S. H.]

Midwifery and Diseases of Women.

ART. X.—*Dilatation of the Perinæum:* By JAMES MORE, M. D., Rothwell, Northamptonshire.

ON the 7th of July I was asked to attend Mrs. L., about to be confined of her first child, and on examination, found the head very high up, and almost out of reach. The pains were good and regular from the first; but finding, after waiting some hours, that the head did not descend, indeed seemed fixed, I again made a careful examination to ascertain the cause of obstruction, and was struck with two things:

1st. The great thickness and resistency of the perinæum.

2d. The regular straining and relaxation of this structure, which took place during each pain, and its regular return to its normal state the moment the uterine contractions ceased.

Knowing that the doctrine of the schools teaches that this same dilatation is due to the pressure of the child's head on the perinæal structures, my attention was at once arrested by this apparently peculiar case, and I consequently determined to watch the whole process narrowly.

The report of the case at this stage was as follows: The external parts moist, but rather narrow, the fourchette being peculiarly thick.

The head high up at the pelvic brim, and presenting such a surface to the touch as to make me quite undecided as to the exact position it might take in the pelvic cavity.

The uterine contractions strong, vigorous, and occurring at regular intervals of five minutes. As soon as the uterus began to contract, I found the thick perinæum, or rather fourchette, gradually thin out and dilate under my finger and thumb, and, on the pain subsiding, the structure gradually returned to its former size and resistance. As the case went on, this dilatation or straining became more decided, while the return to its normal state was less perfect.

The head after some hours reached the hollow of the sacrum, and the labor proceeded to its termination in the usual way.

The conclusions I arrived at from the above facts are these:

1st. Nature has provided the perinæal structure with an inherent power of dilatation, and that this dilatation does not always depend on the pressure of the child's head.

2d. This dilatation takes place during a uterine contraction.

3d. When the uterus is quiescent, the perinæal structures return to a state of contraction.

My case was well fitted for the observation of the above facts, for it was a "*first case,*" where the perinæum was in its virgin and normal state, never having suffered laceration or great distension, and one in which nature might be expected to come forward with all her means of help. The head of the child remained for six or seven hours at the brim of the pelvis, the pains keeping up regularly all the time, and of course the perinæum was free from the slightest pressure, and open for free investigation.

As to the cause or *modus operandi* of this gradual and periodical dilatation, I am afraid much cannot be said.

Is it a vital process inherent in the perinæal structures themselves, or is it caused by pressure on the pelvic nerves, producing a partial paralysis of the muscular tissues composing the perinæal outlet? I think it cannot well be the latter, for in this case the head was fixed and immovable for some time, and the pressure, if there was any, must have been sustained; whereas, I found the parts relaxing and contracting—*i. e.*, they were in first an active, then a passive state.

We know that sutained pressure on a muscle causes paralysis of its nerves, making the former to assume a flaccid and relaxed state; but here and there was decidedly something more than mere flaccidity—there was regular relaxation and contraction. But then it might be said, did not the bag of membranes supply that amount of pressure usually givin by the fœtal head? No; for the waters had broken during the first pains.

Indeed, we have a right to suppose an inherent dilatability in the perinæal tissues for these two reasons:

1st. In one class of cases the bag of membranes is absent, the liquor amnii escaping at an early stage of labor.

2d. In multiparæ the fœtal head passes too rapidly through, or rather over, the perinæum, to suppose a dilating force from that cause; indeed, in many cases we should look upon this inherent dilatability as absolutely necessary to bring the labor to a favorable termination.

As to the practical bearing of this fact, it is not for me to speak. It certainly shows the accoucheur that nature has almost always means at her command of bringing even abnormal cases to a successful issue, provided there does not exist direct mechanical obstruction. Much has been written for some years back both for and against the propriety of supporting the perinæum during the expulsion of the child's head: one class of authors averring that support is the only safe treatment; another class, that this is not necessary; while a third set of men declare it does positive harm. Such discrepancy of opinion is only accountable on the plea that nature has not (in such cases) got credit for all she attains in bringing the accoucheur out of difficulty. Dr. Leishman has amply shown that the same support is not at all necessary, and does not prevent laceration of the perinæum; indeed, according to him, it does harm, and so it must if nature (as I have endeavored to show) has provided this process of alternate dilatation and contraction for opening the maternal outlet. It is a wise rule never to interfere with any physiological process, and surely it must be called "*meddlesome midwifery*" for the accoucheur to press his hand or thumb, as the fashion may be, on the muscular diaphragm of the pelvic outlet, when the same structure is in a state of alternate dilatation and contraction. We find the muscular fibres composing the fundus of the uterus contract during labor, while those round the cervix dilate. Now, is it too much to suppose that, while the abdominal muscles contract, the perinæal ones dilate, or that the dilatation found in the lower segment of the uterine cavity may not be extended to the maternal outlet. Dr. Murphy teaches an inherent dilatability of the perin-

æum; but I maintain there is more—there is an action of much greater power, viz., that of alternate dilatation and contraction.

Since making this observation, I have had many cases of midwifery; and, though in some there was the same decided action of dilatation and contraction, still, in most of them (especially primiparæ), I could make out that force in action to a greater or less extent. It cannot be denied that the fœtal head does not act as a dilator in most cases; but still cases do occur in which this inherent power is the only force in action. It remains to be decided whether or no this action is brought into play in every labor.—*Edinburgh Medical Journal. Detroit Rev. Med. and Phar.*, March, 1867.

Art. XI.—*Dysmenorrhœa:* By R. E. Bland, M. D.

I MADE some remarks a few weeks ago on the connection of the rheumatic diathesis with some forms of dysmenorrhœa. My remarks grew out of what Dr. M. M. Pallen said, in regard to the effects of the black cohosh *(cimcifuga racemosa)* in the removal of the distressing pains of a case of dysmenorrhœa under his care.

The medicine was given in the form of tincture in the dose of a teaspoonful several times a day, and the pain and distress very rapidly subsided, and soon disappeared. The Doctor attributed its very favorable effects to its powers in the removal of the rheumatic diathesis, the case under consideration being one, perhaps, of rheumato-uterine dysmenorrhœa.

My mind had been directed to this view of the subject some years ago by the publication of Dr. Higginbottom, of England, after which my own observation led me to give more careful attention to the rheumato-dysmenorrhœal character of very many of these cases. When Dr. Pallen introduced the subject to the Society, as stated above, I gave it as *my opinion* that many of these cases of dysmenorrhœa are rheumatic, perhaps eight-tenths. It is simply my intention to direct the minds of the profession to the supposed connection of these distressing and perplexing forms of dysmenorrhœa with the rheumatic diathesis.

Many years ago Doctors Higginbottom, Gooch, Rigby, together with other distinguished names, elicited medical attention to this rheumato-uterine state. In the course of my clinical observations, I have noted many facts in this connection. The uterus is a muscular organ, possessed of its longitudinal and circular fibres. We all know that rheumatism is a disease of the muscular and tendinous expansions of the body, and that when these are the subjects of rheumatic inflammation the slightest motion of the body or contraction of the muscles causes, sometimes, intense anguish. This being the case in the tendons and muscles of the body suffering from rheumatism, may not the uterus, an organ composed almost entirely of muscles and condensed cellular tissue, be drawn into the

same intolerable anguish by the same rheumatic inflammation. Why should we conclude that rheumatism may cause all parts of the muscular and tendinous system to suffer thus while the uterus, a great hollow muscle, with fibres disposed in every direction, is exempt from all such influences?

I have often observed a parallel in the action of rheumatic inflammation upon the muscular and tendinous expansions, and the agony that is experienced in that most singular and painful affection denominated dysmenorrhœa. The motion of a muscle affected by rheumatic inflammation causes most insufferable pain. So, when the uterus is thrown into abnormal action by the peculiar state set up at the menstrual period, who can say the signs of active congestion, recognized in the redness of tissue, the enlargement of the cervix and os tincæ, the tearing agony of the uterine contraction, and the expulsion of the membranous exudations, are not the result of the rheumatic diathesis?

The parallel is also to be seen in the fact that rheumatism is periodical, pursuing its course with great distress and pain to the patient, then suddenly vanishing, leaving but little if any trace behind; so with dysmenorrhœa, especially of the inflammatory type, it makes its advent suddenly, runs its course with great infliction of pain, then as suddenly subsides, leaving the patient comparatively comfortable.

The parallel holds good in another aspect. Rheumatism frequently makes its attacks, and the patient suffers greatly, when the signs of inflammation are absent; there is no swelling, no redness, all the patient knows of the disease is the pain she suffers. It is so with some of the forms of dysmenorrhœa; the action may be violent, the pseudo-membranous exudations may be thrown off, and yet the patient is apparently well in the interval, and, so far as the speculum reveals the facts, the signs of inflammation are absent. In either case the disease may be justly termed neuralgic rheumatism or neuralgic dysmenorrhœa.

In most of the cases of dysmenorrhœa that have come under my observation, the parts being brought into the field of vision by the use of the speculum vaginæ, have been of the inflammatory type. This was to be told in the violence of the symptoms, by the engorgement and redness of the cervix and os tincæ, by the force and excitement of muscular action, by the expulsion of membranous exudations, and by the tenderness upon touch.

The rheumatic forms of the disease may be distinguished from those that are not by an enlargement and hardness of the cervix and os tincæ. The cases just mentioned are to be distinguished from those that are the opposite in pathological aspect. In the latter, the os tincæ is soft, sponge-like, and when the finger is applied, it appears to come against a soft and elastic substance.

These cases are not rheumatic, as may be known in the constitutional conditions to be observed in each. In the former are the signs of active inflammation. The speculum reveals redness, enlargement and hardness, with tenderness of the cervix and os. The latter, on the contrary, presents the signs of anemia; face and surface of the body pale, general languor, no tenderness, or but little, either in the exploration of the vagina or the neck and mouth

of the womb, and the vascular action, instead of strength, exhibits signs of debility, the only resemblance being distressing pain, and, at times, great anguish during the menstrual flow. The latter is the result of inflammation, but of a character to soften and render sponge-like the cervix and os tincæ. Why these cases are attended with great pain I am at a loss to know, but of the fact I am certain. I have never regarded these cases as connected with the rheumatic diathesis; but taking all the facts in connection with the cases of dysmenorrhœa, attended by high inflammatory action, enlarged and tender cervix and os, and these taken in connection with the known imprudences in dress, and otherwise of young girls, and, indeed, of those more advanced in years, and we may very rationally and safely keep our eye upon the rheumatic complication.

Either of the classes or cases described must be separated from another class, which, in violence and strong vascular action, and great anguish, very greatly resembles the first, or inflammatory or rheumatic variety, as well as the second, or anæmic. Its cause is entirely different from either. It is not dependent upon inflammation, but upon purely mechanical obstructions; upon malformation, malposition, contracted meatus, etc. These cases are to be relieved only by artificial or surgical means; the sponge tent, the knife, surgical manipulator, to restore the organ to normal position, etc.

So far as my own observation has gone, and the results of treatment been seen, I am sustained, most satisfactorily to myself, in the opinion that active inflammatory dysmenorrhœa, of the first class described, is based upon a rheumatic diathesis, that, perhaps, eight-tenths of the cases of dysmenorrhœa belong to this class, and are rheumatic. So far as my own treatment is concerned, especially as adapted to these inflammatory cases, it has been anti-rheumatic in character, and most satisfactory in its results. After the bowels have been sufficiently purged, the inflamed, enlarged and red cervix and os tincæ relieved by leeching or cooling washes, by quiet recumbent position and low diet, I have pursued a constitutional treatment based upon the rheumatic idea.

I have resorted to the use of colchicum in its various forms and combinations—the root of colchicum, the vinous tincture, the acetated extract of colchicum. These I have combined with the preparations of potassa—the iodide, the acetate, the citrate and the bromide. I have used all these combinations with the colchicum, particularly the vinous tincture from the seeds, and the acetated extract of colchicum. These remedies, and their vinous combinations, I have used with very great advantage in the rheumatic forms of dysmenorrhœa, or rather in what I supposed to be such.

The following may be used with great advantage in the acute or inflammatory form of this distressing disease:

℞—Acet. colchici extr. ..... ℥i
Acet. pot. .....
Iodide pot. *aa* ..... ℥ ii
Vin. colchici (sem) ..... ℥ j
Liquor opii sed ..... gtts. xl

Take twenty drops every three hours to reduce pain; as soon as

pain is relieved, then twenty drops three times a day, to be dropped and resumed as soon as the constitutional effects are more or less seen. Or, when other tried remedies fail, the following may be resorted to with good effects:

℞—Pulv. gum. camph.....3i
Pulv. Doveri.....
Sulph. quin. *aa*.....3i
Rad colchici.....3ss

M—Ft. massa; divide into pills, No. 60; take one every three hours, until the constitutional effects of the colchicum are felt, then protract the intervals as circumstances may demand.

I would respectfully ask my medical brethren to devote some attention to this rheumatic idea in the treatment of this very singular uterine disease.—*St. Louis Med. Rep.*, July 15, 1867.

ART. XII.—*Occlusion of the Cervix Uteri by Cauterization.*

THE acid nitrate of mercury, so much used by Lisfranc in ulcerations of the uterine neck, appears to have been much blamed in a discussion which arose in the Medical Society of the Upper Rhine, and which has just been published in the *Medical Gazette of Strasbourg.*

October 15, 1865, M. Marquez had reported to this society a case of the obliteration of the vaginal orifice of the uterine neck, following cauterization of this organ. In relating this, M. Picard has mentioned six or seven others more or less analogous.

On a first examination, there was a discovery of complete occlusion of the uterus at the time of confinement. Nature was unable, by herself, to expel the product of conception, and interference was imperative, for the poor woman appeared exhausted by the pains which had lasted about fifteen hours fruitlessly. M. Picard finding no trace of an orifice by aid of the speculum, made almost in the centre a crucial incision of a *centimetre* and a half to two *centimetres* in extent. The speculum was withdrawn, and the touch showed that the incision had not quite penetrated the uterine wall. Then insinuating with the left hand the pointed extremity of a perforated sound directed obliquely, M. Picard was able to pass the instrument between the uterine wall and the head of the fœtus. The finger was easily introduced, and a slight pressure sufficed to enlarge the opening. However the labor terminated only by aid of the forceps, but all passed well.

Now in this case, the patient had been cauterized ten times at the beginning of pregnancy, with the acid nitrate of mercury, and the tissue of the neck had been converted into cicatricial tissue, the contraction of which had produced occlusion of the uterine orifice.

Other observations show that cauterization, made likewise with acid nitrate of mercury for ulcerations of the cervix, either a short time before impregnation or during gestation, has produced contraction and even complete occlusion of the neck.

But, as M. Marquez properly remarked, at the close of the discussion excited by the relation of these facts, the fault, in such cases, is not with the acid nitrate of mercury, but the abuse and intemperate use of uterine cauterizations in general, practised by aid of this acid, of the actual cautery or of nitrate of silver. The obvious conclusion of this very interesting discussion, is that one should be very cautious in cervical cauterizations and caustic injections thrown into the neck, when there is any suspicion of pregnancy, and still more so when it is certain.—*Jour. de Méd. and Chir. Prat.*, Feb., 1867. [*Tr.* S. S. H.]

Art. XIII.—*Period of Lactation in Wet Nurses.*

M. DEVERGIE having remarked, in speaking of the stage of lactation, that milk at nine months was too strong for a new-born child, M. Boudet has declared that chemical analysis controverts this view. It results, in short, from the labors of M. Vernois, that from one month to eighteen the milk alters very little, and presents only infinitesimal changes; so that the pretended danger of giving a young infant the milk of one year, for example, is without foundation. M. Boudet, armed with the analyses of MM. Boussy and Boussingault, has likewise overthrown another very prevalent opinion, that a new-born child renews the already old milk of a wet nurse.

It remains to be seen to what point physico-chemists are in the confidence of the gods, and if the microscope is always the faithful interpreter of nature's acts.—*Jour. de Méd. et de Chir. Prat.*, Feb., 1867. [*Tr.* S. S. H.]

Materia Medica and Pharmacy.

Art. XIV.—*Passiflora Incarnata, a Remedy for Tetanus.* By D. L. Phares, A. M., M. D., of Newtonia, Mi.

IN 1838, while a student, my old friend, the late Dr. W. B. Lindsay, then of Bayou Grosse Tête, Louisiana, directed my attention to this plant as an unrivalled remedy for tetanus infantum. He used it for thirty years with extraordinary success in all cases of tetanus neonatorum. While resident at Grand Gulf, Miss., he extended its uses; and, after his removal to New Orleans, he still further enlarged his ideas as to its uses, several times requesting me to prepare and furnish him the medicine. Having no acquaintance

with scientific Botany, and finding the plant differ much in strength in different samples, he naturally fell into the error of supposing that the difference resulted from using five or six species. He was finally convinced, however, that he had never used but one species, and that the difference in strength was caused by difference in locality of growth, season of gathering, and mode of preparing, etc. As found on the dykes or levées around New Orleans, "it grows luxuriantly, but has no virtues at all." That grown on uplands is much better, and that gathered on "Bayou Grosse Tête seems to be strongest." Last year, a few weeks before his death, he wrote, in answer to an inquiry which I had made: "I have much to say—I am satisfied it is no narcotic. It never stupefies or overpowers the senses. A patient under its full influence may be wakened up, and he will talk to you as rationally as ever he did; leave him for a moment and he will soon be off to the Elysian Fields again. I have tried it, my friend, in all sorts of neuralgic affections, and have usually astonished my more enlightened patients with it. Many times I have had them to ask me what in the world it was that had such a sweet influence over them." From observing its very delightful effects, he always called the inspissated juice by the neither very classical nor scientific appellation, "somnum seraphium."

Last year was very unfavorable for making a good preparation, so that I sent him but a small quantity, which, he wrote, was too precious to use for anything but tetanus, for which he considered it a specific. Of the aqueous extract of the root, he writes: "It is a famous application for chancre. I have, by spreading it over erysipelas, driven that inflammation away in a short time. I have cured irritable piles permanently in two or three applications. I have never found its equal in new burns." Besides his experience in private practice with the passiflora, he had a fine opportunity, during the late war, of using it in a military hospital, where there were many cases of syphilis, all of which he managed so successfully as to cause much surprise. Such is a very brief sketch of Dr. L.'s experience with this remedy.

I have myself used it in syphilis, but not in a sufficient number of cases to form a decided opinion as to its value. I never saw anything else act so promptly in erysipelas. I have used it with advantage in ulcers, neuralgias, and tetanus. I have seen wonderful effects from it in relieving tetanus; but, having no record of cases by me, I could not with propriety attempt to detail cases. I will merely mention one case from memory. Some ten years ago I was called to see an old lady in a distant part of the country, who was reported to be "having fits." I found her able to be up most of the time, but, while examining her, convulsions came on, affecting mainly the trunkal muscles and drawing the head back. I gave her instantly a dose of the passiflora. The convulsions subsided, and she has never had one since. I continued the use of the medicine, in small doses, for a few days. I have used it treating tetanus in horses—a disease usually considered as inevitably fatal to that noble animal. It has never failed to cure the horse. Let one case suffice to illustrate. In 1851, early one morning, one of my horses was found to have trismus. A number of remedies failing, and the

spasm becoming general, apparently affecting all the muscles—tetanus erectus—I abandoned him. He was was down, his legs extended, and every muscle so tense as to be immovable by any force that could be safely applied. After some hours, at night, I concluded to try him with the passiflora; gathered a quantity—stems, leaves and flowers—pounded, moistened with water, expressed ten or twelve ounces, and poured down his throat through a tube introduced at the side of the mouth. He was then apparently dying, and no one believed he could survive half an hour. I saw him no more till next morning, when he was well and grazing at a distance from the place where I had left him the night before. During the late war, my son, Dr. J. H. Phares, had occasion many times to prescribe the passiflora for tetanus in horses, with one invariable result—prompt, perfect, permanent cure. He fortunately saw no case in the men.

The leaves are gathered in May, or as soon as the plant blossoms, but before forming fruit. In fact, the whole plant may be used. It must be pounded and the juice expressed through a strong cloth, into shallow glass or porcelain dishes, to dry as rapidly as possible in the shade, with free circulation of air. When dry, it is reduced to a powder by the use of mortar and pestle, bottled and closely corked. The dose of this powder is from one to four teaspoonfuls, repeated *pro re nata*. I have made ethereal, acetous, aqueous and alcoholic preparations, and perhaps others; but the inspissated juice reduced to a powder is the best I have ever used. The size of the dose renders it somewhat objectionable. Some eight or ten years ago, I requested a manufacturing chemist of New York to prepare the concentrated active principle of the passiflora incarnata, which he promised to do; but he has never reported progress. If a concentrated solution could be obtained, I have no doubt it would supersede morphia and atropia for hypodermic medication, its action being so much more pleasant and safe. I have never seen the least unpleasant effect from it in any dose however large, although I have given it in quite large doses. When gathered later than May, the juice can never be sufficiently inspissated to be pulverized. It then contains too much sugar and gum. For external use, the whole plant may be boiled for an hour, then thrown out, and the extract thus obtained boiled down to a proper consistence for the object in view. For this purpose, the perennial roots answer well, gathered after the first frost in autumn.

The *incarnata* may be easily distinguished from the other species of passiflora. This and the *luteo* are the only two species found in the United States north of Florida. Three other species are found in Florida; but all these, like the P. luteo, are small and bear fruit less than half an inch in diameter, while the P. incarnata is much larger, grows in the open fields, bears a fruit about the size and shape of the egg of the Muscovy duck, and has serrated trilobate leaves. From the sharp report emitted by the immature fruit when crushed, it is very generally called the May-*pop*.

The thick rind of the unripe fruit possess very strongly the characteristic odor of the plant, and from it might perhaps be obtained a better extract, as in the case of opium from the immature poppy capsules. The ripe fruit is edible and harmless; but so are the

seeds of the poppy, which are eaten by many persons with much gusto. I have never seen in any book any mention of this plant as a medicine. In 1629 it was first introduced into England as a greenhouse plant, and first figured and designated as the P. incarnata in Miss Lawrence's "Six Numbers of Colored Figures of Passion Flowers," in folio, London. Several species found in the West Indies afforded edible fruits, as the P. maliformis, P. quadrangularis, and P. laurifolia. The leaves of the last, we are told, are vermifuge. (Labat, Nouv. Vog.) The P. contrayerva is said to be carminative and alexipharmic (Brown, Hist. Jour.); the P. lyrifolia cooling, aperient, diuretic (Flor. Med. des Avtill.); the P. fœtida, pectoral, antispasmodic, emmenagogue (Ponpée Desportes). The P. Murucuja (the same, I think, called by others P. rubra), in syrup or decoction, is much used in Jamaica instead of syrup of poppies and laudanum. The flowers infused, or pounded and mixed immediately with wine or spirits, were thought to be "a very efficient and easy narcotic." In the "Annals of the Lyceum of Natural History," I., (1825?)—my copy, with many other valuable works, having been destroyed by fire, I write from memory—is an interesting paper of some length, by Dr. Ricord, on the P. quadrangularis, the decoction of the root of which, the writer says, is a dangerous narcotic poison.

Since the foregoing was written, I have treated, with the fluid hydro-alcoholic extract of passiflora, obtained from the dried leaves by displacement, several cases of neuralgia and one of sleepless, incessant motion and suicidal mania. With the same extract, during the current week, Dr. J. H. Phares has treated, with the most prompt and satisfactory success, a very violent and hopeless case of tetanus, with opisthotonos, trismus and convulsions, in a child two years old. Other most potent remedies, in heroic doses, having failed to produce any effect in this case, he thinks nothing but the passiflora could possibly have saved the child.—*Richmond Med. Jour.*, July, 1867.

ART. XV.—*Saururus Cernuus.* By D. L. PHARES, A. M., M. D., of Newtonia, Miss.

THIS plant has a perennial rhizoma about three lines in diameter, one to three feet long, creeping horizontally an inch or two beneath the surface of the earth, jointed, white, tender, flexible; the internodes two to six inches long; annual stems nearly as thick as the rhizoma, one or two feet high, erect, jointed with long internodes; leaves alternate, petioled, with sheathing stipules, cordate-ovate, oblong-ovate, acuminate; spikes white, terminal, three to six inches long, nodding at apex; flowers without calyx or corolla, white, numerous, each from the axil of a small bract, appearing in May; stamens four to eight, with long club-shaped filaments; fruit somewhat fleshy, composed of three or four partly united one or two seeded corpels, pointed with as many stigmas.

The plant grows in fresh water marshes throughout the Southern United States. The whole plant is medicinal and has a rather offen-

sive, heavy, slightly aromatic odor and taste. It is lenitive, antispasmodic, sedative, slightly astringent. It has been much used in some parts of the country in regular as well as domestic practice, as a soothing, discutient cataplasm. It has been highly and specially recommended as a remedy to allay pain, and prevent suppuration in mammary inflammation. In these affections I have never employed it; yet I doubt not its value as a cataplasm.

But for ten or twelve years I have employed it very extensively, and with most satisfactory results in the treatment of irritations and inflammations of the kidneys, bladder, prostate gland, urethra and epididymis. It is specially indicated in all cases attended with strangury, or ardor urinæ; and when freely exhibited in warm infusion, very promptly removes the unpleasant symptoms. It is a valuable palliative in gonorrhœa and chordee; and a good vehicle for, and adjuvant to, other remedies addressed to the genito-urinary organs. It is not offensive to the stomach, and consequently is rarely rejected, even when that organ is in an irritable condition; it tends rather to allay the irritation.

I would venture the suggestion, that this plant might be advantageously employed in treating some affections of the vagina, uterus and ovaries, both constitutionally, and in the former two locally. I think it might be used also beneficially in certain conditions of the nasal passages, fauces, trachea, bronchia, etc.

In some parts of the country where I have introduced its use, it has become so popular, that whole plantations of it have been exhausted. A strong, hot infusion of the plant, crushed, whether dry or recent, is made. Of this the patient may take from one to four ounces, every quarter or half hour, or only three or four times a day, according to the urgency of the symptoms or particular object had in view in its exhibition. It may often be substituted for buchu or uva ursi leaves, and in many cases is much superior to either.—*Atlanta Med. and Surg. Jour.*, July, 1867.

Art. XVI.—*Lactic Acid and the Lactates.* By M. Burin Du Boisson.

ON this subject M. Burin du Boisson has arrived at the following conclusions:

1. That in principle all the functions of the animal economy may be considered of two kinds—one acting by excess of acid, the other by excess of alkali; two acids only concurring to the maintenance of life—the lactic secreted in the economy, the phosphoric derived from the food.

2. That the quantity of lactic acid normally secreted in the twenty-four hours in the stomach of the adult man of the average weight of 75 kilogrammes, supposing this acid to be of 30° of Baumé, and in the proportion of 1 per cent. of the gastric juice, is about 75 grammes—a quantity to which additions are made by the acid which is formed in the duodenum, jejunum, and small intestine.

3. That in health this acid is the *normal* one in the gastric juice, to the absolute exclusion of the hydrochloric, or any other acid, whether organic or mineral.

4. That the lactic acid occurs alone in the gastric apparatus, whilst in the solid and organized parts of the economy it is found conjointly with free phosphoric acid; whence it may be concluded that the presence of free lactic acid in our organs is indispensable for the production of the mixed chemico-physical phenomena essential to vital action.

5. That the young mammal has in milk the source of this acid, so indispensable to its economy and development, and in sufficient quantity; and that later, when weaned, it finds the same acid in the albuminoid matter which should form the chief portion of its nutriment, and which, like milk and feculents, is equally liable to undergo the lactic fermentation.

6. That the lactic acid procured from flesh and its juices, is identical in its properties with that contained in the gastric juice, and yet differs as regards its salts; whence we are led to believe, with M. C. G. Lehmann, that the free acid of muscles, and of their juices, is derived from the muscular fibre itself, under the influence of the physical functions of these organs.

7. That the free action of the stomach, besides the action which it exerts on albuminous matters, facilitates in a remarkable manner, by endosmosis, the absorption of chyme, and its passage into the alkaline blood and lymph.

8. That by the notable quantity of lactates, alkaline and earthy, with a base of soda, potassa, ammonia, magnesia, and lime, which it gives rise to, and which are found in all the active fluids of the economy—the saliva, the gastric juice, the chyle, lymph, blood, the humors of the eye, etc., it facilitates by a special action the selection and separation of the four orders of aliments[1] one from the other; and that, when taken into the blood-current, these lactates become a powerful source of heat by the combustion of their acid, whilst the alkaline bases, soda, and potash, contribute to the alkaline quality of the same fluid.

9. That the bicarbonate of soda and the carbonate of magnesia, as given in small doses in aid of digestion, are inoperative until they have passed into the state of lactates of soda and magnesia.

10. And that even magnesia, when administered as a purgative, does not, according to the observation of M. Mialhe, take effect until converted in the stomach into a lactate.—*Ranking's Abstract*, January, 1867.

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[1] 1. Proteic, so termed (albumen, fibrin, casein, etc.)
2. Amylaceous (starch, gum, sugar.)
3. Fatty (oils, fats, butter, etc.)
4. Mineral (earthy phosphate, alkaline chlorides, etc.)

Chemistry and Legal Medicine.

Art. XVII.—*Detection of Salicine in Quinine.* By Ed. Parrot.

FOR the detection of salicine in quinine, recourse has heretofore been had to concentrated sulphuric acid, which produces an intense red coloration with the former body.

A characteristic reaction for salignium is afforded by the intense blue color produced on the addition of a solution of sesqui-chloride of iron.

In using the former test, we find that the quinine under examination, must contain at least three per cent. of salicine to give a distinct reaction with sulphuric acid.

By means of the process about to be described, which is based upon the fact that salicine, as well as salignium, is converted into salicylous acid by the action of sulphuric acid and bi chromate of potash, we may detect one-half per cent. of salicine in quinine. It is necessary, however, for this purpose to have at least a gramme of quinine to be examined.

A fully saturated solution of bi-chromate of potash is to be prepared, and a dilute sulphuric acid, composed of one part by volume of concentrated sulphuric acid, and four parts by volume of distilled water.

One gramme, or even one-half gramme of the quinine to be examined is to be introduced into a small retort, a little water added, then two cubic centimetres of the diluted sulphuric acid, and four cubic centimeters of the solution of bi-chromate of potash. Heat is then to be applied.

The vapor which passes over is to be conducted into a small, well-cooled flask, in which a little distilled water has been placed.

With the small quantities of fluid in the retort which have been mentioned, it is sufficient to boil for *a single minute*, in order to convert the salicine into salicylous acid, and carry the latter over into the receiver.

Having well shaken the receiver, a single drop of *natural* solution of sesqui-chloride of iron is to be added. If the quinine has been adulterated with salicine, a more or less intense violet color will make its appearance.

It is essential that during the distillation no sulphuric acid should be carried over into the receiver, as otherwise the reaction with sesqui-chloride of iron, even in the presence of salicylous acid, would not take place.

A. Dollfuss states that water containing 1-572,000 of sesqui-chloride of iron is colored violet by salicylous acid.—*Fresimus-Zeitschrift für analytische Chimie, 5th Jahrg., 3 and 4 Heft, s.* 287. [J. W. M.]

Art. XVIII.—*Separation of Morphine from Strychnine.*

RODGERS has found that the reaction of strychnine with bi-chromate of potash and sulphuric acid may be observed by the

presence of morphine. These bases may be easily separated by the action of chloroform or benzine.

Strychnine is taken up by both fluids with equal ease, while morphine is not dissolved.—*Jour. de Pharm. et de Chim.*, 1866, p. 288. [J. W. M.]

ART. XIX.—*Miscroscopic Determination of Seminal Stains.*

THE resolution of the question whether suspected spots upon clothing have been produced by seminal fluid or not, can, as is well known, only be referred to microscopic examination, and this can only give satisfactory results when we are fortunate enough to detect complete spermatozoa with head and tail in natural connection. Generally, however, such a result cannot be obtained with old spots, where they have been treated according to the method of Koblank; namely, softening with distilled water, and microscopic examination of the expressed fluid.

Not unusually we can see a great number of roundish and elliptic little bodies, having altogether the appearance of the heads of spermatozoa, and amongst them distinct fine threads which may easily be taken for the tails, but to find both in connection costs much time and trouble.

Pincus has ascertained that this is not simply to be ascribed to mechanical destruction of the spermatozoa on drying, whereby on moistening again the tails are more easily lost or chemically broken up, but that in many cases the spermatozoa apparently deprived of tails really possess them, and that the latter may easily be rendered visible.

In a legal investigation Pincus found a great number of heads, but only after an hour's search succeeded in observing indications in two cases of the thread-like cont nuations. But, after several days, the slip of glass, upon which the thin glass cover had firmly dried, was again examined, and now a number of the most distinct spermatozoa were to be seen, with heads and tails naturally connected.

On a repetition of the experiment, the same result was obtained. At first the bodies were seen without the thread-like ends, but two days later the least experienced eye could detect the complete spermatozoa, and could follow out the sharply and distinctly marked tails to their finest termination.—*Vierteljahrschrift für gerichtliche u. öffertliche Medicin.—Neue Folge, Bd.* 5, *s.* 347. [J. W. M.]

Hygiene.

ART. XX.—*Feeding and Food.* By THOMAS INMAN, M. D., London.

IN a very few days after the affectionate couple we described in our last chapter, have entered upon their honeymoon, a very important question arises for their consideration daily, and it is generally discussed after breakfast.

During the first burst of fond devotion, they can leave to the waiter or the landlady the selection of their viands, but sooner or later, the question is sure to pop up, "My dear, what shall we have for dinner to-day?" At first, this important matter is discussed with great minuteness, each one vying with the other in desire to please, and studying each others gastronomic views. As time progresses and nothing is left of the honeymoon, save the jars, the daily question is discussed in another way, and too often perhaps for the wife's comfort, the husband curtly answers the question, *erst* so interesting, with the reply, "Whatever you please my dear." But if his *cara sposa* takes him at his word, and having a sneaking fondness for a cold leg of mutton, offers to regale him with it too, it will probably be found by her, that such an answer is a prelude to a note announcing an unexpected engagement, and a dinner at the club or a restaurant. As most wives, however, rather enjoy their good man's return from his business, and like to hear and retail their mutual news, they endeavour to make dinner the pleasantest meal of the day, and so in consequence they study the culinary art and its practical application. What it is *advisable for a wife*, it is *necessary for a physician* to do in this respect. She has to cater for one whose appetite and digestion are usually good; he has to prescribe or suggest a diet for one who loathes ordinary food, or cannot digest it if he takes it. In the days when, as a nice young man, I was admitted to tea-tables round which ladies congregated, I heard many a gossip about the doctors in the town; but of none were such eulogies spoken as old Doctor St. C., whose knowledge of cookery surpassed belief. At a dinner table, his abilities were shown in talking of the dishes, and he would tell of all the methods in which any particular dainty could be presented. He was equally great on wine and could discourse eloquently on vintages, but of that the ladies cared little; words scarcely sufficed to sing his praises in the sick-room, and happy was the lady whose husband could afford to pay for his attendance; he would sometimes make a delicious basin of arrowroot, or he would instruct the cook how to make a tempting omelette or a most appetising custard. Then perhaps, after a long talk, my respected aunt, who used to patronize me on such occasions, would turn to me—then a medical apprentice—and say: "There, Tom, you hear that if you want to be a successful doctor you must learn to be a good cook." I took her advice, and years after repaid it in kind. However much the wife might dislike the answer "Whatever you like," to the question about dinner, she would, I fancy, dislike still farther a dissertation on the value of food in general, and each dainty in particular, and I cannot imagine that the reader of these pages would relish such a long story any more than the lady; what we have to say, therefore, should be short and to the purpose.

As a rule, dinners should be hot, appetising and digestible. The dictum is short enough, but it is a text for a long sermon.

Like many divines, however, we will ignore our text and treat the subject in our usual fashion, and by studying others, draw some deductions for ourselves. Nature has provided for the young of all mammalia milk for a sustenance. On that fluid they thrive, increase in weight and strength, and develop intellect and bone; it is clear,

therefore, that milk is a very valuable nutrient, but cows run dry and jenny-asses and mares do not always carry full udders; it is equally clear therefore, that other food is intended for animals after the period of infancy.

The food of the young creature when weaned is, in some classes, purely vegetable, in others purely animal, and in some it is mixed. It is not that the diet is dictated by neeessity, but by instinct. The Creator has made the jaws of some to grind down roots and boughs, and those of others to kill, tear, and rend other animals. The grass-eating deer is fat and fleet, the flesh-eating wolf is gaunt and slow, but the enduranee of the latter will run down the former, and make it food for itself. Again, the deer and the ox and the horse all live on the same sort of food, yet have little in eommon save their bulk. The dog lives on flesh like the lion and cat, yet the three are distinct in their habits and characters. It is not then the food that makes the tiger roar, the sheep bleat, or the donkey bray. No matter what the particular sort of food taken, each animal retains its own personal propensities. It is true that the use of one rather than another method of feeding will make sheep, pigs and oxen more *tasty*, but as men do not feed themselves with a view to the gastronomie enjoyment of ogres, we need not deseant upon it. But, though a pig will never be a eat, however you may feed him, there are some striking characteristies about certain classes of animals. As a rule, all vegetable eaters are fat; as a rule all animal feeders are spare, thin or meagre. *Cæteris paribus* the two have equal strength, but the last have the greatest enduranee.

In this respeet, however, there is a farther distinction to be made; the horse at ease in the fields ean derive suffieient from the grass to keep him alive and well, but, if the master wants the ereature to work, he takes him from the pasture and gives him dry food, and still farther, if he want to test his endurance to the utmost, he will give him beef and beer, the former in the shape of a steak round his bit, the latter as a drink pure or mixed with meal. But the eareful jobmaster or thoughtful squire knows that a perpetual diet on hard eorn eannot be kept up for years without injuring the horses, and he judieiously mingles the dry beans or meal with vetehes, earrots, or freshly eut grass, or green oats. From all these observations we deduee that a fluid diet makes ereatures look sleek and fat, but does not make them strong, and we ean reeal with ease, the pieture of many a plump looking woman, who is always eomplaining of weak nerves and trying to live on a diet of bread and butter and tea. Sueh may be eompared to whales who have blubber rather than fat, or to water-melons, whieh owe their size to the same eause whieh makes a jelly-fish so huge.

We deduce in the seeond plaee that a vegetable diet encourages fatness, gives adequate strength and agility, but does not impart enduranee, and we remember how we have read of Frenchmen, living on pulse, in vain attempting the work of an English navvy, a task they fulfilled with ease when they imitated his diet and indulged in meats and solids.

An animal diet, weight for weight, imparts more than double the support to life yielded by a vegetable one, and is therefore speeially adapted, when endurance is required.

But the lion who gorges himself on ox requires a sleep after dinner, while the deer who stuffs himself with grass seems rarely to sleep at all; we conclude, therefore, that for one whose business requires unceasing toil, a vegetable diet will be preferable to an animal, while to another whose avocations are comparatively fitful, a long rest alternating with intense bodily fatigue, a pound of steak will do better than a quarter of a stone of potatoes.

These considerations may enable a man to say how far he will prefer a vegetarian feast or an animal banquet, or the two combined.

But there are other considerations to be thought of. One man may dine early, and have the appetite and digestion of a wolf; another may be obliged to attend to his business incessantly from morn to dewy eve; the first would relish anything not absolutely bad, the latter has to be tempted with dainties. The one sniffs the sirloin from afar and feels his mouth watering, the other scents it too, but his "gorge rises" and his appetite disappears. I can well remember feasting with great gusto at a certain London eating-house while the Medical session was new, and I was "a young man from the country;" while at the end of the session my disgust of that same house was such that I could not endure to enter the street where it was.

Whenever exhaustion precedes the feed, it should be prefaced by something very light and easy of digestion; hence soup and fish form the first remove of late dinners, and, except in winter, are rarely seen at lunch. Who, with a beef appetite, cares to sup broth, and how many are there on the other hand, who can eat from a gigot *because* they have prefaced with vermicelli. Those who live in the country and come home to a late dinner, after a long day's work in town, will find great comfort from a cup of tea and a slice of bread and butter ere they leave, to go on their return journey, and will find that a slight repast, like that, will prepare them for a heavier one.

There is yet another method of looking at diet which cannot be altogether passed by. I will introduce it thus: A plant abundantly fed by manure, etc., gradually becomes "double," *i. e.*, it becomes a noble specimen of its species, but it has no offspring. I have known vines nourished until their leaves were as large as those of rhubarb, but one tiny bunch of grapes on each tree gave scant promise of progeny.

In like manner, too abundant a manuring will increase *straw* rather than grain. On the other hand, the gardener who wants *seed* cuts off from his plants both water and dung.

It is much the same with us: the pampered sons of wealth have few children, while the sons of toil and poverty haveabundant flocks.

We can fancy some who would like to live well, so that no noisy infants might disturb their repose, but those we have no sympathy with, and will leave to their own devices. Our hearts would rather warm towards those who see year after year pass by without any branches springing from the parent-stock. Doctor, said such an one to me, "I want to tell you something." The young man was the *beau ideal* of youthful health, and at the time of our colloquy was about seven and twenty years of age, a private gentleman living on his means, but studying medicine as a sort of luxury and attending

my class. His words ran thus: "Did you ever hear of bread and milk being associated with a family?" "Not exactly," said I, "but why?" "Well," he said, "my wife and I had been married five years and had no children, though we were both particularly anxious for them. One day I read in some book, that a dict of bread and milk would sometimes enable folks to overcome sterility, and I told my wife so. She agreed to try it, if I would. We did, and ere five weeks had elapsed she found the first evidence of pregnancy. Since then we have had a yearly increase."

To the thoughtful mind one such experience suggests more, and the same idea will be found in the following anecdote, for whose authorship I can give no account except that I heard it from an Irish clerk. Lady ——, who had wealth and comfort in abundance but no offspring, while visiting an old foster-nurse on her estate, and one who had abundance of children, asked how it was that she had so large a flock? "Ah"! said the housewife, "it's all along of Pat and the praties," Struck with the observation, the titled lady imitated the diet of Biddy, but, as no sign of increase came, she again consulted her old friend. The reply was too coarse for our pages, but we may imitate it by saying that Lord ——— probably did not live on potatoes, as "her Pat" did.

We have got thus far without saying definitely anything about the digestibility of this or that dish. No wonder, for we consider everything, which ordinarily comes to table, good to eat: if the stomach and palate enjoy it, good and well; if not, few people will indulge in anything.

I have been asked a thousand times, "Doctor, what may I eat?" My answer always is, "whatever you like best." If the illness is such that no choice can be made, I suggest a dish, as I would a medicine.

There are some exceptions to this rule, but I could not enter into them without writing a dissertation upon indigestion, etc.; practically there are no exceptions to the rule amongst the healthy, that people may just eat what they like.

It is time now for us to return to our text. We said that, as a rule, dinners should be hot. A few minutes' thought will suggest the reasonableness of the rule. The temperature of the stomach is 96°, Fahrenheit, and that heat is important to digestion. If, during the artificial digestion which the chemist shows to students during his lecture, he reduces the temperature below 70°, the process stops; the ingredients are all as they were before except the caloric, but they no longer act. In the same way an individual whose circulation is not strong enough to keep up the warmth in his stomach by a vigorous supply of new blood, to replace that which has been chilled, cannot take a cold dinner, or an ice, after a hot one, without having evidence that his digestion has been impeded. A hot dinner gives an impulse to life; a cold one draws upon the vital powers ere it recruits him. I can imagine some of our navvies eating frozen horse with impunity, but I cannot believe that a similar chunk given to one of Franklin's starving sailors, staggering literally on his last legs, in the vain hope of reaching safety, would revive his energy; he is cold enough already, and a mass of cold meat would not warm him. Many can remember accounts of death arising from drinking cold

water when the frame has been exhausted by violent exercise, and cold meat is quite as bad. The jaded mechanic will digest with ease a slice of mutton fresh from the baker's oven, whilst a similar joint cold will take a return ticket, and instead of becoming chyme in his stomach, will become "heartburn" in his throat. Even "nature" knows this much, and always warms the milk which feeds her sucking young ones.

Cold cheese to many is indigestible as leather, yet I have never found a stomach which quarrelled with it hot. Toasted cheese, fresh from the Dutch oven, is one of the most digestible dainties which enters the dining- or sick-room.

It will readily be seen, that the idea of heat imparted by such condiments as peppers and mustard and horseradish, are not equal to the heat given by fire. The first may be appetising, but they can't make cold mutton hot. We have shown elsewhere that cold wine is not so good as hot negus, and that cold brandy-and-water will produce eructations which a hot mixture will allay.

These matters are of small importance, when persons are in high health; but where their constitution is somewat impaired, they cannot be avoided with impunity.

Again, a dinner should be such as to suggest the idea of pleasure in eating it. Now a man does not like, as a rule, to sit down to a strange dish, or sometimes to an old dainty under a new form. We can eat ducks which revel in mud, and swine who eat with their feet in the pig trough, yet our gorge rises at horse-steaks, and a bit of a "bow-wow" will produce an indigestion in an alderman. We can relish oysters but can't manage snails, and revel in whitebait while we reject frogs' thighs. Stomachs, like their owners, are apt to go in a sort of beaten track, and refuse to leave it for novelties. New flavors are therefore more apt to disagree than old ones, and a familiar dish will suit a tired man, while a new one will give him dyspepsia.

It matters little what the old thing may be. It may be to the Esquimaux a bit of half putrid seal, to the Irishman a hard potatoe, to the Frenchman a clove of garlic, or to the alderman some green fat. Yet if it "make the mouth water," it will be appetising and digestible. To ordinary beings ordinary diet is better than perpetual change. When we say that dinner should be digestible, this presupposes a knowledge of the individual who is to eat it, and the condition of his stomach. I have been told that, in the first Arctic expedition of Franklin, the cook of the party came to him one day, with the remark that he "wanted the leather breeches he wore, to cook them for dinner!" and Franklin told my informant that he not only gave them, but partook of them with relish; but no one would thence infer that leather was digestible, and would make soup equal to "Julienne." I have too some friends, who, from the exigencies of their position, enjoy tainted fish and stinking eggs, yet I should find them indigestible in the extreme. Cucumber is said to be one of the worst things going for the stomach, yet I know a delicate woman who almost lives upon it during the time it is in season. I know another who suffers misery from a meat diet, and yet thrives upon cold fruit. Some of us revel in dishes swimming with fat, oil or butter; others cannot bear even a *soupçon* of oleaginous matters.

No code can be drawn up which shall suit every one, and each, therefore, must be a judge for himself.

Apropos to this part of my subject, I must touch upon what is called "rareness." There are some who love to see their steaks juicy, and their sirloin full of gravy; there are others whose stomach is turned by that which bears the look of "rawness;" each avers that the condition which himself enjoys is the most conducive to health.

As regards digestibility, there is in reality little difference between the one and the other; and what little there is leans to the side of rareness. Raw meat is by itself very digestible (even by the infant), far more so than when cooked. But, and the exception is important, underdone meat is apt to produce tapeworm. The dog, fox, wolf, and all carnivorous animals are subjected to this disease, and so is that man who, from choice and necessity, eats food insufficiently cooked. The germ or eggs of certain parasites which infest the human body are to be found in another form in the sheep and cow, pig and goat, and if not killed ere we take them, they begin to grow into the perfect animals in our intestines. Efficient cookery destroys them.

A medical friend one time came to me with manifest concern on his features, and drew forth, from a mysterious looking parcel, the remains of a leg of pork he and his wife had been dining on. While finishing with a nice little slice, his eye caught sight of some curious looking holes; he thought of measles in the pig, and could eat no more; to know the worst he came to me, asking me if there were really any creatures there, and if so, whether they were alive, for if they were he would take an emetic at once, rather than be a nest for a set of tapeworms. On using the microscope, I soon found myriads of what we call hydatids, which consist of a ring of sharp hooks and a bladder, which though very innocent looking, will grow into a curious creature, which looks prettier in a quack doctor's window than in a Christian's bowels, but all were dead: the cooking had effectually killed them, for the germs of tapeworm cannot bear roasting any better than a philosopher.

It is not pleasant to think that any of us may have eaten boiled caterpillars with our cabbages, but it would be far worse to believe that we had swallowed them alive.—(London) *Medical Mirror*, November, 1867.

Bibliographical Record.

Two Cases of Œsophagotomy for the Removal of Foreign Bodies: With a History of the Operation. By David W. Cheever, M. D., Assistant Professor of Anatomy in Harvard University; Surgeon to the City Hospital; Surgeon to the Boston Dispensary; Recording Secretary of the Massachusetts Medical Society. Pamphlet, pp. 42.

A detailed history of the circumstances, symptoms, operation and treatment of Dr. Cheever's two cases, which occurred in the month of November, 1866, is very interesting; and rendered more than usually so by his condensing in concise pamphlet form, the history and experience of others, in all authenticated cases of œsophagotomy. It is not an unusual thing for foreign bodies to lodge in the pharynx and œsophagus, and first and last a great many cases have been observed; but so few have had œsophagotomy performed that, in the literature of the operation, Dr. Cheever could find but fifteen authentic cases, prior to his two; "*seven* of which were in France, *one* in Italy, *one* in Belgium, *one* in India, and *five* in Great Britain." He adds in his introductory remarks, that "the ingenuity of the surgeon has been exhausted in devising means to withdraw foreign bodies through the natural passages; an intention which cannot be too highly commended, but which has often led to irritation, ulceration and perforation of the digestive tube, by the too zealous employment of instruments, as dangerous as the foreign bodies themselves.

"By reviewing the history of the operation, and by our own cases, we hope to show that, as in strangulated hernia, urinary extravasation or croup, so in œsophagotomy, the danger is in delay. That the risks of the operation depend on skill in its performance, and not on its sequences. That, if done early, it can be done safely. And that it deserves its place among operations of necessity, and not of expediency, as one which can relieve a fellow being from exquisite suffering and from extreme peril."

The first case was seen by Dr. C. on the 10th November. The patient the day before, "while eating a dinner of chowder, suddenly became conscious that he had a bone in his throat. Violent strangling and efforts at ejection came on, followed by vomiting. The fragment was not dislodged. * * * He passed a bad night, swallowing only water." By three o'clock the next day, when the patient was seen, "he was in much distress at each effort to swallow;

his face was suffused ; his eyes congested ; the pallate swollen, the uvula touching the tongue, and provoking attempts to swallow an over-secretion of mucus which collected in the fauces. There was no swelling of the tonsils. The tongue was coated, and the pulse accelerated. Pains radiated up and down the neck from a point on a level with the cricoid cartilage, on the right side. He had slept none the past night. Having placed him opposite a good light, I explored the pharynx with my forefinger. I was able to reach over and behind the larynx, and searched the base of the fauces and the folds around the epiglottis, as well as the back of the pharynx. I felt nothing. He vomited a little mucus, and expressed himself relieved. He now swallowed a whole goblet of water, without much wincing." He was then left with an anodyne liniment to rub on his neck. By the 12th November, the fourth day, he was much worse, swallowed with much difficulty and contortions, was dribbling saliva, and pulse was more accelerated, showing great constitutional sympathy. After ineffectual efforts to dislodge the body with a probang, and the patient growing worse, it was resolved to operate, which was done at 7 o'clock, P. M., on the 12th. The pain, swelling and other indications pointing to the right side as the place of lodgement of the foreign body, about the union of the pharynx and œsophagus, at the cricoid cartilage, this was the point selected for the operation, although no hard projection was observed there. An incision was made, commencing at the top of the thyroid cartilage, midway between it and the sterno-mastoid, and carried down parallel with the inner fibres of the muscle to the sternum. After opening the œsophagus on a tube within, a piece of the fin-bone of a fish, one-half inch long, and one-fourth inch broad, was extracted, the wound left open without stitches, a subcutaneous injection of morphia administered, together with a beef-tea enema, and the patient put to bed in a steam-room. The following morning, the 13th, "the voice is husky, swallowing more painful than before the operation, and the wound dressed with a wet compress. * * * To have mouth moistened with a wet cloth, and his arms and wrists bathed freely with cold water, to relieve his thirst. Absolute diet ; not to talk ; not to swallow, and to allow the saliva to run from the mouth. Room to be kept full of steam, both to relieve the larynx and to check the watery transudation through the skin ; beef-tea enemata, *ter die* ; morphia, p. r. n."

The patient did well, and the œsophogial fistula was definitely closed at the expiration of three weeks.

The second case presented himself on Nov. 16th, with symptoms similar to the first. On the 14th, at night, he was eating some cabbage, and something lodged in his throat, which he supposed to be a piece of bone, boiled with the cabbage. The ordinary means were used to dislodge it, but without success, though with some relief. The following day his symptoms were much aggravated. The centre of pain in this case was referred to the region of the cricoid cartilage, on the left side, and on the third day the patient was leaning his head on that side to relax the muscles. "He declared himself much worse. The pain in swallowing was greater. The use of the probang the day before had been followed by a chill. He had had neither drink nor food. His fauces were a little swollen, on inspection; the uvula pendulous and flabby, and the tongue thickly coated. There was no swelling of the tonsils; efforts to swallow occasioned exquisite suffering; and the mucus and saliva dribbled from his mouth, as he was unwilling to attempt to swallow them. A line extending from the central angle of the thyroid cartilage to the spinous process of the cervical vertebra opposite, measured half an inch more on the left, than on the right side; and there was greater tenderness there." * * * * * * * * "The imperative necessity of some measure for relief was now apparent to the patient, as well as to the surgeon; the former readily consented to an operation. He was accordingly sent (Nov. 17th) to the City Hospital; put under the influence of morphia, given subcutaneously, and the bowels cleared by a purgative injection."

The operation was performed at 5 o'clock, P. M., cutting on the left in this case, and guided by the same boundaries and landmarks. After some little search, when the œsophagus was opened, the foreign body was found obliquely across it, just under the upper end of the sternum, and when extracted, proved to be a common brass pin, an inch and a quarter long, blackened and corroded. The after management was the same as that for the first patient, and he did well, making a more rapid recovery than the first.

"In reviewing the steps of an operation to reach the œsophagus by external incision, it appears, first of all, that this incision cannot well exceed three to three and a half inches, in length. This is about the distance, in average necks, from the top of the thyroid cartilage to the sternum. If we cut above the thyroid cartilage, we endanger the hypoglossal nerve and lingual artery, in a deep dissection; and, more important, the *superior laryngeal nerve.* The latter

crosses the space between the hyoid bone and top of the thyroid cartilage to enter the larynx, and its section would destroy the sensibility of one vocal cord, and one-half of the glottis. Through a comparatively short incision, therefore, we are obliged to make a very deep dissection, down to the prevertebral muscles, and to draw various important structures out of harm's way as we proceed: first, the carotid sheath, containing the artery, vein and pneumogastric nerve, which approximates closer and closer towards the œsophagus, as we descend the neck. Above and below are the superior and inferior thyroid arteries; on the inside, the thyroid gland. Below the finger is the sympathetic nerve; and, finally, running up between the œsophagus and trachea, to the back of the larynx, the inferior or recurrent laryngeal nerve, the motor nerve of the larynx, whose section would paralyze one-half of the glottis; and the partial division of some filaments of which, in one case of œsophagotomy, led to a permanent alteration of the voice. This nerve, lying upon the front of the œsophagus principally, is to be avoided by opening the gullet towards its *posterior* part. The œsophagus is easier found also on the left side of the neck, as it naturally inclines to that side. And the rule has been, that œsophagotomy should be done on the left side, as the place of election, unless we are sure of cutting down on the foreign body on the right side. The deeper disection being carried on chiefly with the director, it is possible to reach the œsophagus not only *without injuring any nerves*, except the unimportant superficial branches of the anterior cervical plexus, but also, as we shall show in the second case, without tying a vessel."

The surgical anatomy of the parts with which we have to do in this operation, are so succinctly given by Dr. Cheever above, that nothing more on that subject seems necessary. In the first case, the anterior jugular vein was cut. It was thought a bubble of air was sucked into it, and it was tied as a precautionary measure; but no bad results followed. The upper belly of the omo-hyoid was drawn out in this operation. In the second case, it was drawn towards the median line with advantage, and in this case there was no occasion for ligatures, either for arteries or veins.

The reason of the more rapid recovery in the second case, was thought to be from two causes: first, the constitutional irritation was not so great, and secondly, the opening into the œsophagus was a cleaner cut, being more accessible on the left, and the pin did not produce the laceration that the fish-bone did in the first.

The reasons for urging an early operation, when necessary to operate at all, are put with much force by Dr. Cheever, not only from his experience and observation in these two cases, but from his collected statistics and observation of others. If the foreign body is permanently lodged, and especially if it is of any size, rough, and irregular, the dangers of delay are very great. Experience has shown that the vitality and powers of resistance to morbid influences of the alimentary canal, are not very great, and that in these cases of foreign bodies, inflammation and suppuration soon occur. The matter presses upon various important structures, and sometimes by ulceration makes its way into the larynx, trachea, bronchial tubes, pleural cavities and mediastinum. It may involve blood-vessels, as the carotids, the arch of the aorta, the right subclavian, the cavæ and others, producing sudden and violent hæmorrhage. It may produce spasms and asphyxia by its pressure, or burrow, dissect down, and produce caries of the cervical vertebra.

The near approach to suppuration, in the first case reported, not only accounts for the greater gravity of the case, and more tardy recovery, as compared with the second, although his constitution was better, but illustrates the local differences of effect by different kinds of bodies, as well as the great propriety of promptly operating; since matter was observed in the wound of this case a few hours after operating. On account of the irritable nature of the larynx, especially when morbid, the placing of the patient soon after the operation in a steam-room, where the air was moist, warm and equable, was no doubt judicious; as was the nourishing by enemata of beef-tea, which obviated tendency to spasm of the throat and disturbance of the granulating process, by the introduction of tubes. The suggestion in these cases of nourishing the patient by enemata alone, and *absolute* diet *per orem* for a few days or a week, by Boyer, appears to be a fine substitute for, and a great improvement upon the early introduction of tubes. Absolute diet, and nourishing by enemata alone need not be kept up longer than a few days, as by this time usually the parts are so united by adhesion that any simple food taken, escaping by the wound, does not burrow, and thereby produce suppuration, as it would do taken early after the operation.

In this operation, after getting to the œsophagus, if the foreign body has not made its way through the wall, the surgeon is facilitated very much by introducing into the œsophagus, through the mouth or nose, a tube or male catheter, upon which to cut through

the wall. He can then, if the body is not readily found, introduce through the opening the finger and explore above and below. Œsophagotomy is a grave operation, because of the important contiguous structures involved; but it is one whose landmarks are palpable and compartively easily performed. After cutting through the integument, fascia and platysma, the balance of the operation may be best performed with the director, finger and handle of the knife. Deliberation should always be used, and the delicate structures, to which are distributed the laryngeal nerves, should be handled with the greatest care, as spasm, at the time or afterwards, may supervene. Various modes of operating have been practiced, but the lateral is considered the best. The upper belly of the omo-hyroid may be cut, if in the way; and by careful dissection the thyroid body, with its superior and inferior arteries, may be raised and turned over the median line or isthmus. The œsophagus may be better presented to view by gently taking hold of the thyroid cartilage and elevating it, at the same time inclining to the opposite side. It is better, probably, as a rule, to avoid sutures in the œsophagus in these cases, as it is so modified, by the pressure of the foreign body and suppuration, that it must heal by granulation. Operations such as œsophagotomy show the importance to the surgeon of always being calm, and having his anatomy at command. The mere fact of not being called upon more than once or twice in a life-time to perform such an operation, and may be not at all, should make one more zealous in his retention of exact anatomy.

Ununited Fracture successfully treated, with Remarks on the Operation. By HENRY J. BIGELOW, M. D., Prof. of Surgery in the Medical College of Harvard University.

THE great mass of fractured bones, when coäptated and kept in proper position, unite in due time; but, under some circumstances, where the violonce producing the fracture is very great, contusing and lacerating extensively the soft parts, where steadiness of union of the fragments is not observed, and constitutional or acquired vices of the system exist, there is no union. In these instances the ingenuity of the surgeon is often taxed to avoid a permanent false

joint. Attention to the general health, with perfect adjustment of the bones and blisters over the surface, are generally sufficient; but these failing, compression, setons, drilling, frictioning the ends of the bones together, and everting and sawing off the ends of the conical or bulbous bones, have all been practiced with varied success.

Dr. Bigelow, in these obstinate cases, practices, and advises in his report, making an incision and everting the broken fragments, where they are most subcutaneous—generally on the outside of the limb. He then makes a crucial or other incision across the ends, lifting up and peeling back the periosteum without detaching it from the muscles, as far as is required to saw the bones, and then closely coäptating the bones by means first of a pliable silver or copper-plated wire placed about an inch from the end of the bones, and reaching in by means of a drill larger than the wire to the medullary canal. Finally the whole is to be supported and held in place by mechanical apparatus, to fulfill the indications. He advises, and with reason, not to strip the muscles from the periosteum in drawing back the latter, as this would lessen its nutritive power; and also to save the periosteum and thickened tissue adherent over the ends of the bones, by making incisions across them, and carefully lifting them with forceps from the rugosities of the bones. Thus he not only preserves the muscles and periosteum *intact*, to have their combined nutritive action, but also the tissues and periosteum over the ends of the bones, the one invaginated within the other like the finger of a glove, to make it, as it were, doubly sure. After sawing the bones, usually from half an inch to an inch, he then drills a hole about the same distance back of each sawed extremity, through to the medullary cavity, passes the wire in one from the exterior to the cavity, and in the other from the cavity to the exterior, brings both ends out of the wound and twists them together. After permanent union has occured, which takes from two to six months, the wires at the commencement of the twist are cut (sometimes an incision is required to get down to this point), and the remainder, being annealed or malleable, is extracted with forceps. The wire seems not to irritate, and remained in one instance for two years without producing caries or other mischief to the bones. Dr. Bigelow's mode of operating is rational, and founded upon physiological experiment, as well as corroborated by pathological observations. It is in many instances proven that, where the bone has been destroyed by disease and the periosteum detached and left intact, bony material has been

deposited and organized; hence it is reasonable to conclude that this method of operating, though tedious yet not dangerous, is and will be quite an improvement in absolute cases of non-union. The incision is made at the most favorable site for draining the discharges, and abscesses are opened early, if formed, taking special care to avoid important nervous and vascular structures.

Practical Dissections. By RICHARD M. HODGES, M. D., formerly Demonstrator of Anatomy in the Medical Department of Harvard University. Second Edition, thoroughly revised. 12mo, pp. 286. Philadelphia: Henry C. Lea. 1867.

THIS book, being of portable dimensions, is more convenient for its special use than the larger works for general study and reference. The long experience of the compiler in the dissecting room has well qualified him for the task—that of providing the student with a guide in the pursuit of practical anatomy—and we think his work well adapted to its purpose. The different regions are taken up separately and successively, divided into lessons of convenient length; and plain directions are given at all stages of the proceeding.

The surgical relations of the different parts do not enter into the scope of his work, and we doubt whether it would be worth while to increase its bulk, when they can be so effectually taught elsewhere. In this edition, however, he has added some pages on "Anatomical Landmarks," which will be useful as affording a brief outline of regional anatomy on the living subject.

Notes on the Origin, Nature, Prevention and Treatment of Asiatic Cholera. By JNO. C. PETERS, M. D. Second Edition, with an Appendix. 12mo, pp. 200. New York: D. Van Nostrand, 192, Broadway. 1867.

AMONG the late contributions to cholera literature, none seems to have met a more favorable reception than the little volume of Dr. Peters. His views of the nature and mode of propagation of cholera are succinctly stated in his preface; and as these are points of special interest, we quote at length:

"1st. That Asiatic cholera is both portable and communicable.

2d. That it is generally carried about by persons, ships, clothing, and baggage.

3d. It never affects the entire atmosphere of any one country, district, town, or village, and rarely of one hospital, ship, or house; but only those parts of them into which it is directly imported.

4th. That the quality of infectiousness belongs peculiarly, if not exclusively, to the matters which the cholera patient discharges by vomiting and purging.

5th. That cholera discharges, if cast away without previous disinfection, impart their own infective quality to the excremental matters, or any more innocent filth with which they mingle in drains and cesspools, and wherever else they flow or soak, and to the gases and effluvia which these substances evolve; thus poisoning the air and subsoil water.

6th. That no amount of filth, imprudence, or diarrhœal disease, without the addition of this peculiar cause, will give rise to true Asiatic cholera in temperate climates.

7th. That if the cholera poison, by leakage or soakage from drains or cesspools, or otherwise, gets access, even in small quantity, to wells or other sources of drinking water, it will infect, in the most dangerous manner, very large volumes of this fluid.

8th. That the cholera poison affects, with equal virulence, everything in the nature of bedding, clothing, towels, and the like, so that the soiled linen of a single house in which there is a cholera patient may spread the disease over a whole district.

9th. That there is scarcely any limit to the extent to which even a single case of cholera or cholerine may infect a whole neighborhood.

10th. The counteracting and remedial agencies are simple and efficient. Whenever the disease has manifested itself, even in its slightest form, thorough disinfection must be enforced. With this single precaution no epidemic gives less excuse for any unmanly or excessive fear, since none seems to involve less of danger to those around.

11th. As cholera only affects the air of certain localities, there is not the slightest necessity for any of those general departures from the ordinary mode of life and diet which were formerly recommended. The golden rule is to live temperately, naturally, and well.

12th. Finally, no case of diarrhœa, cholera morbus, or dysentery, can be converted into cholera unless the patient has also been exposed to the peculiar infection of this disease."

It will be observed that he adopts the favorite belief among the British public, that the poisonous emanations are contained in the choleraic discharges, and from them, directly or remotely, gain access to the organism through the pulmonary and alimentary mucous surfaces. At the same time he gives a statement of the various other theories which different writers have promulgated, and in respect to treatment he quotes largely from other writers. His work thus becomes in a manner a compilation of authorities, among which will be found a great variety of opinions, for he does not ignore even the homœopaths. We have neither inclination nor space to enter the arena of contest, while the dust of the still raging conflict is still too obscure to determine either its merits or probable issue. We are not among the sanguine who believe that this little book is "the end of controversy," but we cordially recommend it to all who wish to study the natural history of the enemy still ravaging in our midst, among whom must be reckoned the entire Medical profession.

As a means of prevention he insists strenuously on Quarantine, Cleanliness and Disinfection. As to the first, he believes three weeks' detention after the last case, together with thorough disinfection of all possible fomites, should be enforced. Sulphate of iron in solution and carbolic acid, with other preparations of coal tar, he considers as the most reliable disinfectants, and to these all choleraic discharges should be subjected. He observes that *ozone* is deficient in a cholera atmosphere, and advises means for supplying it.

During the present season in this city disinfection of the localities stricken by cholera has been rigorously carried out with the most gratifying results, and we are of opinion that the views of Dr. Peters on this point will meet a hearty and general concurrence.

A table of contents and an index are now so generally furnished for the convenience of readers, that they are always expected in books intended for reference, and we have to regret their omission in this volume. We hope the author will not neglect this in his *third* edition.

We add our commendation of the very neat and correct manner in which the publishers have discharged their duties in this work, which, like a becoming attire on gentleman or lady, prepossesses favorably and makes us desire a further acquaintance.

Menstruation, or the Menstrual flow; an Epiphenomenon of Ovulation. An Argumental Treatise read before the St. Louis Medical Society, on the Question, is Menstruation Ovulation? By G. M. B. Maughs, M. D., Prof. Obstetrics, etc., Humboldt Med. Col., St. Louis. Pamphlet, pp. 59.

We have been favored by the author with a copy of this paper, which is a compendium of the conclusions arrived at by the most celebrated physiologists of the present century. Without any claim to originality, it presents in a convenient form the most advanced views of the day, based on the experiments and observations of such well known names as those of Robert Lee, Bateman, W. Jones, Negrier, Gendrin, Pouchet, Raciborski, Bischoff, Wagner, without mentioning others more nearly connected to our own time and country. It is unnecessary here even to allude to these conclusions, for they have become the property of the profession, and are generally known and accepted.

A Treatise on the Principles and Practice of Medicine; designed for the use of Practitioners and Students of Medicine. By Austin Flint, M. D. Second Edition, revised and enlarged. Henry C. Lea, Philadelphia, publisher. 1 Vol., 8vo., pp. 967.

The Science and Practice of Medicine. By Wm. Aitken, M. D., Edinburg, Prof. Pathology, Army Medical School, etc. From the fourth London Edition, with Additions, by Meredith Clymer, M. D., late Prof. Institutes and Practice of Medicine, University N. Y. In 2 Vol., 8vo., pp. 955 and 1114. Philadelphia: Lindsay & Blakiston. 1866.

It is a genuine, and we may well add, a deserved compliment to Dr. Flint, that a second edition of his work on Practice was demanded in less than six months after the first large issue had left the hands of the publishers. Scarcely any reader of this book will complain that either the time or money he invests in it is misappropriated. This is especially true in reference to students. The matured practitioner will sometimes, if his experiences approximate our own, turn from its perusal with a feeling of disappointment and regret that the author had not elaborated his opinions more fully and

cleared up his subjects in a more exhaustive manner. Upon turning to the preface of the first edition the reader will find satisfactory explanation why such a course has not been pursued. But notwithstanding this announcement of a determination to avoid discussion of mooted pathological points, the reader is sometimes introduced to such a discussion and left to extricate himself from a maze through which he trusted the author's wisdom would safely guide him. For instance, under the head of "Acute Pleuritis," the following paragraphs seem to indicate an intention to enter upon an inquiry into the pathology of inflammation, and we remember the eagerness with which we began its perusal and the feeling of disappointment experienced when the learned author refers the inquirer to the physiologist for a further explanation:

"Waiving consideration of the historical events just enumerated, the inquiry arises, in what consists the local deviations from health which constitute inflammation? in other words, what is known of its essential nature? Reverting to the fact already stated, that the first appreciable change is an abnormal determination of blood, the answer to the foregoing inquiry involves an explanation of this fact. Why is more blood determined to an inflamed part than in health? We can only explain this fact by saying that there is a morbid exaggeration of that force inherent in each organ and structure, by which the quantity of blood it receives in health is to a certain extent regulated. Such a force undoubtedly exists. The amount of blood which a part receives is by no means exclusively regulated by the forces which carry on the general circulation, and which chiefly belong to the heart. Parts receive more or less blood according to their state as regards functional activity. The stomach, for example, receives a much larger quantity of blood during the act of digestion than at other times. A very striking contrast, in this respect, is offered by the uterus before and after impregnation. The explanation of the force determining thus, in health, within certain limits, the amount of blood which different parts receive, devolves on the physiologist; and when this is understood the pathologist may be able to explain why there is an undue determination of blood to an inflamed part. Most of the events following the accumulation of blood in inflamed parts denote aberration of the molecular changes involved in nutrition. Inflammation, therefore, leads to perversions of nutrition; and when the physiologist is able to explain the local changes belonging to nutrition, the pathologist may be able to explain the perversions which belong to inflammation. Our present knowledge, then, of the essential nature of inflammation is comprised in the statement that it is a morbid deviation from those conditions of health which relate to the capillary circulation and nutrition of the part affected."

It is a source of earnest congratulation to all American practitioners, that so considerable a portion of Dr. Flint's practice is

devoted to the consideration of thoracic maladies. The author is now recognized as one among the highest of authorities upon such subjects, and although he had previously given us a number of capital monographs upon various affections of the circulatory and respiratory organs, we have here the latest expression of his views upon these important and interesting topics. We are satisfied that many patrons of this Journal, especially in the South, have to this date not enjoyed an opportunity to read this work. In many instances, probably most, this has been owing to poverty; the wolf of famine, which so closely follows the march of devastating armies has not yet disappeared from their doors. In no instance need political susceptibilities deter the Southerner from buying it, for whatever the author's ideas may be on these questions, he does not, like many Northern writers, force them upon us under cover of the garb of science.

Whatever minor faults this work may possess (and critics must of necessity *find* or *create* some faults), its therapeutics, in our opinion, will stand the test of severe trial. However brief our notice is by limitation obliged to be, we cannot refrain from giving our readers an extract, selected from the same heading under which the allusion to the nature of inflammation occurs. We do not select it, however, because of being grouped under the same caption, but because it illustrates remarkably well the author's practical and philosophic mode of handling his subjects:

"A great change has taken place, within the last few years, with respect to the use of opium in acute inflammations. It was formerly used with much reserve, under the apprehension that, acting as a stimulant, its influence upon the local disease must be unfavorable. It was regarded as antagonistical to the antiphlogistic plan of treatment. Clinical experience and sounder pathological views, however, have led to the knowledge of its great value in the treatment of inflammatory affections wherever situated. It is valuable, not alone as a palliative, but as a curative remedy. Its palliative efficacy is, of course, intelligible ; and we can also, to some extent, understand its curative influence. By relieving pain, it diminishes the determination of blood to the inflamed part, for pain is alone sufficient to occasion an increased afflux of blood to a part. This fact is illustrated by cases of neuralgia affecting a superficial nerve. Neuralgia of the supra-orbital nerve, for example, occasions a determination of blood to the conjunctiva, so that this membrane appears to be inflamed, and the congestion disappears directly the pain is relieved by a full opiate. Opium exerts also a curative influence by preventing or diminishing the constitutional disturbance which inflammations are apt to occasion ; it places the system in a condition to

tolerate better the local affection. The severity of an inflammatory disease depends much on the amount of constitutional disturbance which it occasions, and, with respect to the latter, different cases differ widely, although in each the degree and extent of the local affection be the same. Life is often destroyed, not in consequence of the injury done to the inflamed part, but because the vital powers are inadequate to bear the continuance of the disease. These considerations afford some insight into the utility of opium, especially when patients are of the class who are able to take this remedy without inconvenience—there being, as is well known, a great difference among different persons in this regard. The evidence of the curative value of opium, of course, is derived from experience, and there is ample ground for the belief that, by its judicious use in acute inflammations, not only is their course divested of much of the suffering which would otherwise be experienced, but their intensity is lessened, and the danger of death diminished, in those inflammations which tend to destroy life by asthenia. The immediate effect of this remedy is often very strikingly manifest in improvement as regards the local and general symptoms.

Considering now the use of opium in the first stage of acute pleuritis, after the abstraction of blood, if this be deemed advisable, or, after a saline purgative, if this be employed in lieu of bloodletting, it will generally be judicious to prescribe opium, in some form, in doses sufficient to relieve pain, and place the system fairly under an anodyne influence. If the pain be severe, and the constitutional disturbance considerable, the use of opium need not be delayed for the operation of a purgative, but may be at once entered upon. This is, perhaps, the most judicious course in the majority of cases, a purgative being deferred until a distinct anodyne impression has been produced and maintained for some hours by opium. Conjoined with the use of opium, sedative remedies, addressed to the circulation, may be employed. These should not be pushed to the extent of producing disorder. If, for example, tartar emetic be given, it should not be carried beyond the point of slight nausea ; and the veratrum viride, if given, should occasion no appreciable effects beyond a reduction of the frequency of the heart's action. These remedies, it is to be borne in mind, are addressed, not to the disease, *per se*, but to the symptomatic phenomena of the disease, viz., those belonging to the febrile movement."

Aitken's Practice is a work widely different in scope and method of arrangement from Flint's, but is scarcely less worthy of the attention of either student or practitioner. It is not, like Dr. Flint's book, a digest from one mind stored with the observations and reflections of years devoted singly to the science and practice of medicine, but it is rather an accumulation of the observations and opinions of the leading professional intellects of this and other ages. To both the student and medical practitioner the highest recommendation of Dr. Aitken's work will consist in the instructions so fully detailed in respect to the character of observations necessary to be

made in order to obtain correct knowledge of the natural history and pathology of diseases. To him above all other authors we in America are most indebted for having incited attention to the value of the thermometer as an aid to both the diagnosis and prognosis of disease, while he in turn gives due credit to those who have preceded him in these investigations, especially to Dr. Parkes and Prof. Joseph Jones, of Nashville. We select a few remarks from the very interesting pages upon conclusions based on thermometric observations in disease:

"When the temperature is increased beyond 95.5° it merely shows that the individual is ill, and suffering from some disease, and that when considerably raised, as with a temperature of 101° to 105°, the febrile phenomena are severe; that when a great height is reached, as at temperatures above 105° Fahr., the patient is in imminent danger; and that with a rising temperature above 106° Fahr., to 108° or 109° Fahr., a fatal issue may almost without doubt be expected in a comparatively short time. The highest temperatures before death have been observed in cases of scarlet fever and of tetanus.

A definitive diagnosis may also be based on a single observation, under the following circumstances:

A person who yesterday was healthy, but exhibits this morning a temperature above 104° Fahr., is almost certainly the subject of an attack of ephemeral fever or of ague; and should the temperature rise up to or beyond 106.3° Fahr., the case will certainly turn out one of ague, or some other form of malarious fever.

Again, if a person under eighteen years of age shows general symptoms which resemble typhus fever, but if one evening during the second half of the first week or first half of the second week the temperature of the body should sink below 103.3° Fahr., without any external cause, it is a sure sign that the fever is not typhus. Again, in a patient whose temperature rises during the first day of illness up to 106° Fahr., it is certain he does not suffer from typhus nor typhoid; and of a patient who exhibits the general typical signs of pneumonia, but whose temperature never reaches 101.7° Fahr., it may be safely concluded that no soft infiltrating exudation is present in the lung.

Again if a patient suffer from measles, and retains a high temperature after the eruption has faded, it may be concluded that some complicating disturbance is present.

Single observations with other means of diagnosis will often determine whether the disease is one of danger or not.

In typhoid fever a temperature which does not exceed on any evening 103.5° Fahr. indicates a probably mild course of the fever—and especially if the increase of temperature takes place moderately, towards the beginning of the second week. A temperature of 105° Fahr. in the evening, or 104° Fahr. in the morning, shows that the attack is a severe one, and forebodes danger during the third week; on the other hand, a temperature of 101.7° Fahr. and below, in the morning, indicates a very mild attack, or the commencement of con-

valescence. In pneumonia a temperature of 104° and upwards indicates a severe attack. In acute rheumatism a temperature of 104° is always an alarming symptom, foreboding danger, or some complication such as pericardial inflammation. In a case of jaundice otherwise mild, an increase of temperature indicates a pernicious turn. In a puerperal female an increase of temperature indicates approaching pelvic inflammation. In tuberculosis an increase of temperature shows that the disease is advancing, or that untoward complications are setting in.

In short, a fever temperature of 104° to 105° Fahr. in any disease indicates that its progress is not checked, and that complications may still occur."

In respect to the pathology of fever, Virchow's theory is adopted that, "Fever consists essentially in elevation of temperature, which must rise from increased tissue change." To explain those instances in which diminution of excreta accompanies fever, he adduces Dr. Parkes cases and supposes the diminution to be only apparent and dependent upon their retention. In the classification and nomenclature of diseases, Dr. Aitken has closely copied the nosological tables of Dr. Farr. The intelligent physician whose observations of disease have been made in the Yellow Fever zone will be puzzled to know what it means by "Malarious Yellow Fever." If he simply means to point us to those cases in which the malarial poison becomes joint cause with that of Yellow Fever in producing the sickness, the definition which he gives is inapplicable :

"*Febrile phenomena due to malaria, in which the exacerbation and remission are so connected that the fever resembles a continued fever, and is characterized by great intensity of headache, yellowness of the skin and black vomit* (COPELAND, DICKENSON, BOOTT); *but in which the urine is not suppressed, and continues free from blood or albumen.*"

If on the other hand he means that there are individual cases of malarial fever in which a diagnosis from Yellow Fever cannot be affirmed, he states a truism long recognized by intelligent observers. It would seem from the above-quoted definition that he attaches much importance to the appearance of albumen in the urine as diagnostic of Yellow Fever. Unquestionably the presence of albumen may enable us to form a decision contingent to a doubtful case, but its absence cannot on the other hand be relied upon as excluding Yellow Fever. Our observations, which have been carefully made, though not numerous, have led us to infer that the albuminous urine in Yellow Fever is more often due to altered structural condition of the kidneys, than to hematuria or to blood

changes permitting its escape without the existence of local renal disease. Cases of Yellow Fever resulting fatally have been observed during the present epidemic in which no albumen existed in the urine, while in a large proportion of cases terminating in recovery it has not been found.

The work has been ably edited by Dr. Clymer and he has himself contributed some valuable papers on the following subjects: *Typho-Malarial Fever; Chronic Camp Dysentery; Cholera Morbus; Cholera Infantum; Spinal Symptoms of Typhoid Fever; Hereditary Syphilis; Gonorrhœal Rheumatism; the Delirium of Inanition; Cerebro-Spinal Meningitis; Locomotor Ataxy; Aphasia; Laryngo-Pharyngeal Paralysis; the Sphygmograph; Treatment of the Disease of the Respiratory Organs by Atomized Fluids; Syphilic Disease of the Liver.*" The reader will find the article on the "Treatment of Diseases by Atomized Fluids" especially interesting. This is destined to effect quite important changes in the mode of application of many remedies to the cure of disease. The reader may not have met with Dr. DaCosta's excellent paper on this subject and we copy from Dr. Clymer's article the following extracts therefrom:

"Inhalations by means of atomized fluids are an unquestionable addition to our therapeutic means: but they are nothing but an addition, and not a substitute for all other treatment.

"In most accute diseases of the larynx, and still more so in acute disorders of the lungs, their value, save in so far as those of water may tend to relieve the sense of distress, etc., and aid expectoration, is very doubtful; though in some acute affections, such as in œdema of the glottis and in croup, medicated inhalations have strong claims to consideration.

"In certain chronic morbid states of the larynx, particularly those of a catarrhal kind, and in chronic bronchitis, they have proved themselves of great value.

"In the earlier stages of phthisis, too, they may be of decided advantage; and at any stage they may be a valuable aid in treating the symptoms of this malady.

"Their influence on such affections as hooping-cough and asthma is not satisfactorily proved.

"They furnish a decided and unexpected augmentation of our resources in the treatment of pulmonary hemorrhage.

"They require care in their employ; and in acute affections we should consider whether, as they have to be used frequently to be of service, the patient's strength justifies the disturbance, or the annoyance their frequent use may cause.

"In any case, to be of service, they ought to be carried on as a treatment with a distinct object, and not intermittingly or spasmodically resorted to."

Whether in exudative laryngitis this mode of producing vapor will be found more valuable than Budd's simple arrangement of the hot brick to generate vapor by being placed in a basin of water, and the latter on the foot of a canopied bed, or, we venture to add, whether they may ever supersede the stove and caldron, which, as reported in Dr. Flint's Practice, gave the New York practitioner such unusual success, remains to be determined by future observations.

The Functions and Disorders of the Reproductive Organs, in Childhood, Youth, Adult Age, and Advanced Life, Considered in their Physiological, Social and Moral Relations. By WILLIAM ACTON, M. R. C. S., etc. Second American, from the fourth London Edition. Philadelphia: Lindsay & Blakiston. 1867. Octavo, Vol. 1, pp. 291.

A truly philosophical book upon this subject must be dictated from an unselfish mind. It must be divested of all disposition to magnify beyond reason and truth the importance of this class of disorders, so as to make the alarm it creates a source of profit to its author. It must be divested of those ambiguous expressions which may mean one thing and may mean another, and which seems to our mind to be inserted on the same principle that the "N. B., *caution*, these pills should *not* be taken during pregnancy, as they will surely produce abortion," is pasted on each box of "patent female pills" offered for sale, viz., to keep in favor with the law and the preachers. Now, when a large part of this Union seems to be inordinately exercised upon these matters, and tracts and sermons on abortion, miscegenation and free-loveism, together with "Genitive Regulations," are shamelessly hawked around over the land, we should hail the event with joy, that a book abounding with such healthful sentiment, sound philosophy and appropriate therapeutics should be placed within our reach. Almost every American physician is familiar with the reputation of Dr. Acton, and with the fact that he has made diseases of the reproductive organs his special study for many years. This work will still further enhance his reputation. The author dealt with his subject in a plain, straight-forward manner. His work is written for his own profession, all of whom comprehend the fact that no subject connected with the diseases to which flesh is heir, is to them indelicate; nor is directness of language in describing disease of any description to them indelicate. We cannot commend

the book too highly to those physicians who desire to inform themselves with regard to character, gravity, or treatment of the many diseases of the reproductive organs. It is certainly a book for Every Physician, and some Americans may wonder that the British Medical Association, in imitation of their Yankee brother, does not change its title to "Why Not? a book for every man, woman, youth and child," and send it broadcast among their enviably virtuous and well-ordered houses; and then they might hope to educate their population to the standard of propriety which at this time obtains among the self-righteous celestials of this country.

Paris Correspondence.

Medical Education in France.

Paris, April, 1867.

Dr. Chaillé has requested me to prepare a paper, which might serve to guide those among our countrymen who desire to study medicine in this capital, or in other cities of France. It is intended to render these lines practically useful, and do away with the annoyance and loss of time a stranger must almost necessarily encounter, notwithstanding the courtesy of professors and "*employés.*" In the course of these remarks, the different fees required will be mentioned, as well as other items which may prove of interest, nothwithstanding their apparent want of importance.

There are in France three Faculties of Medicine, located respectively at Paris, Montpellier and Strasburg, and twenty-two preparatory schools situated in different cities, such as Tours, Rennes, Toulouse, etc. It may be well to say at once, that public instruction in France is centred in a *single* University, which is divided into Academies, subdivided in turn into Faculties. Thus, for Paris, the different schools are classed as follows: University of France—Academy of Paris—Faculty of Medicine, or Faculty of Law, etc. There are also "Academies" at Montpellier, Strasburg and other cities. The Minister of Public Instruction governs the University with all its different branches. To come back to the Medical Department, the three Faculties of the Empire are *alone* empowered to grant diplomas; and, although students may commence their studies

in a preparatory school, their completion can take place only in one of the three Faculties. Whether a Faculty or a preparatory school be selected at the outset, applicants for admission must, as a preliminary step, present the diploma of Bachelor of Letters and that of Bachelor of Sciences. The University however has granted the permission of suppressing some of the branches required for this last, and the diploma is styled "*restreint*" (*i. e.*, limited). The degree of Bachelor of Letters suffices to begin attendance at the school, but after six months the student is allowed to proceed no further, unless he hands in the diploma of Bachelor of Sciences "*restreint*"—the meaning of this term has been explained above. Foreigners are subjected to the same law in this respect as Frenchmen, but Literary and Scientific degrees obtained in an American, or other duly authorized college, are considered equivalent to French diplomas. For this, however, a special permission, or "*Equivalence*," is required from the Minister of Public Instruction. This step is tedious and not always successful. The best way is to request the United States Minister—I suppose the applicant to be an American—to have the kindness to attend to the matter. The Minister has, on several occasions, to my knowledge, been very courteous. He sends the diploma and petition to the Minister of Public Instruction, and when this course is followed, the "*Equivalence*" is generally granted. A notice is served on the petitioner, who is required to go to the "*Sorbonne*" in Paris, or the Faculty of Letters and Sciences in the city he has selected for his medical studies. The certificate of "*Equivalence*" is then delivered, and 150 francs are demanded (five francs are equivalent to an American dollar)—100 for the literary, and the remaining fifty for the scientific degree. Hereafter, as the same laws apply to all the French medical schools, I will suppose that of Paris to have been selected. The next step is to leave this certificate of "*Equivalence*" at the Medical School, and if the student be a minor, a written permission from his father or tutor is exacted. When these formalities are over, it becomes necessary to take out "Inscriptions," of which there are sixteen in all, given four times a year at the following periods: The scholastic term begins in November, and consequently the year dates from that month. The inscriptions are given, one at a time, from November 1st to 15th, January 1st to 15th, April 1st to 15th, July 1st to 15th — four inscriptions yearly, so that four years must elapse before the 16th and last inscription is delivered. The object is to enable the Faculty

to ascertain at stated periods whether the students are in Paris, or whether their inscriptions are not taken by proxy, which is forbidden, unless some good reason can be furnished.

To avoid confusion, I will suppose the case of a beginner, and follow him from the outset to the completion of his studies. It will be remembered that the "*Equivalence*" has been left at the school, at the opening of the scholastic year. The next step is to take out the first inscription in November. Each inscription costs thirty francs. The lectures are divided into two courses—the winter and spring sessions. Attendance is entirely gratuitous, and no matriculation fee is demanded. The professors begin lecturing in November. A first year's student is required to study Natural Philosophy, Chemistry and Natural History. This last branch is not taken up till the spring term. Each lecture lasts an hour, and in winter the professors of Natural Philosophy and Chemistry teach on alternate days. Chemical manipulations can be performed in the laboratory of the Faculty, by paying 50 francs per month. Students have thus the benefit of the personal supervision of the Dean, Mr. Wurtz. (In summer, the chemical laboratory of the "Jardin des Plantes" is open *gratuitously* to all who express the desire to be admitted.)

To resume, during the first year, in winter there is a lecture lasting one hour every day. Attendance is not obligatory, and no roll is called ; nor is trouble ever taken to ascertain who follows the lectures. It will be seen that this system gives hardly any occupation, and hence, besides following the lectures on Natural Philosophy and Chemistry, ample time will be found to study Anatomy and to dissect. During the second year, the advantage resulting from such a course will be very apparent. Should anatomical studies be decided upon, a dissecting card is given for twenty francs. This card serves during the whole winter term, and no additional fee is exacted, the school furnishing the dead bodies. Supposing the month of January to be now at hand, the second inscription is taken out, at a cost of thirty francs. The same routine of study continues until April, when the third inscription is given—the fee being again thirty francs—and the spring session commences. The two terms follow each other closely, only a few days of vacation being allowed. The professor of Natural History now lectures during an hour three times a week. Thus again there is an abundance of spare time, which may be profitably employed in assisting at the lectures at the Sorbonne, School of Pharmacy, and "Jardin des Plantes," upon Natural Philosophy and Chemistry. These lectures are all gratuitous, and full notice is given of the days, etc., on which they take place. Preparation will thus be made for the first yearly examination, which has to be passed in July ; hence the advantage of exact attendance.

During the spring session, every Sunday an herbarizing party goes out under the direction of the professor. These excursions costs but a few francs and, besides their practical utility, afford a pleasant means of visiting the many lovely spots in the environs of Paris. The School of Medicine possesses, too, a botanical garden, and every one has access to the valuable collections of the "Jardin des Plantes."

In this manner the spring session glides along, until the period for paying the examination fee—thirty francs—approaches. Due notice is given some time before the first of July. From the first to the fifteenth July, the fourth inscription—costing thirty francs—is given, and immediately after the fifteenth the examinations begin. The board is composed of three professors, and thirty minutes are the average duration of the examination. If the result be favorable, one has done with the school till November following, *i. e.*, nearly four months of vacation are at hand. Should the candidate fail, however, another opportunity to present himself is furnished towards the close of October.

I must say here, that the fifth inscription is not given, unless the examination be passed satisfactorily. Hence the importance, if the July trial has been unsuccessful, of not losing the October opportunity; for, should this happen, the student is compelled to wait until July following; in other words, a whole year is lost. Supposing, however, the first effort at passing the examination to have succeeded, nothing can be done at the school until November, when the fifth inscription is taken (thirty francs fee), and the second year's course begins.

So far, I have said nothing of the hospitals, because it will become necessary, after the ninth inscription has been taken, to insist upon this point; still, as many may wish to visit these institutions, and as great advantage is to be derived from this practice, it may not be out of place here to furnish a few details. The hospitals are open to every one, and no difficulty is experienced in following the different services. Greater benefit, however, results from attending a particular professor regularly, than from going first to one, and then to another series of wards. A beginner would do well to select, at the commencement of the second year, a surgical service, in which he would become acquainted with the manner of applying bandages. To effect this, a card is given gratuitously by the "*Assistance Publique*," or Board of Directors of the hospitals, which, upon simple presentation to the medical gentleman one may have selected, suffices to obtain easy access to the patients.

To come back to the second year's course. The fifth inscription has been taken; a card for the dissecting room is indispensable, and costs twenty francs. The second yearly examination is devoted to Physiology, Anatomy and History. Lectures upon Anatomy and History are delivered during winter, and Physiology is studied during the spring session. The dissecting room is open daily from 11, A. M., till 4, P. M., and students are admitted from October 15th until the spring term begins. The museums and library of the school are gratuitous. In January, the sixth inscription is taken; and in April, the seventh is given with the opening of the spring lectures. During this session it is well to study Operative Surgery, a card for which costs ten francs. Besides, sufficient leisure time is at hand to enable one to devote daily some hours to the study of Medicine and Surgery, which, together with operations, although not forming part of this year's examination, still will be found very useful later. During the month of June, the examination fee, thirty francs, has to be paid. Immediately after taking the eighth inscription—fee, thirty francs—that is, on July 15th, the yearly examinations are opened.

What I have written concerning the successful result or failure to pass the ordeal of the first year, finds an exactly similar application for this trial, as well as for the third yearly examination. It will suffice, therefore, to recall to mind, that the inscriptions cannot be continued, unless the result be satisfactory. Supposing the candidate to have been successful, the school is again closed for him until November, when he takes his ninth inscription. Now attendance upon the hospitals becomes obligatory, during a period of two years, lasting from the ninth to the sixteenth inscription inclusively. During these two years, no inscription is given, unless the student has signed a double register, kept at the hospital, twenty-eight times every month. Formerly it was possible to elude this requirement to a certain extent, but lately measures have been taken to enforce twenty-eight visits to the hospital monthly. In case of illness, or some other good reason, a certificate from the "*Chef de Service*" (*i. e.*, physician to whose service one is attached) is considered equivalent to the number of signatures wanting. This obligatory attendance is styled "*faire le stage*," and there are two means of performing this duty. Every year, in October, the administration of the hospitals offers a competitory examination for about two hundred places of "*Eleves Externes*," *i. e.*, students who do not reside in the hospital. This examination is based upon Anatomy, Physiology and Pathology, and is not in general very difficult. The candidates are classed according to individual merit, and those who are sent to hospitals at a distance from the centre of the city receive thirty francs per month. The "*Externes*," when once placed in a medical service, are required to remain for a full year under the same physician. The advantage of the "*Externat*" is, that it is impossible at a later moment to enter the lists as a candidate for the "*Internat*" without having been an "*Externe*." The position of "*Interne*," or residing student, is to be obtained by competitory examination also. The "*Internes*" are named for four years, during which the hospital administration pays them a small sum annually, besides furnishing board and lodging. The "*Internes*" have charge of the wards, under the supervision of the physician, and are expected to visit the patients every evening, in order to report and attend to unlooked for and alarming symptoms.

Those students who do not compete for the *Externat* are called "*Stagiaires*;" whilst those who attend the hospitals voluntarily, *i. e.*, before having received the ninth inscription, receive the complimentary appellation of "*Eleves Bénévoles*." After the ninth inscription, no matter what the title, *externe* or *stagiaire*, every one is obliged to be at the hospitals twenty-eight days a month, during the period comprising the time in which the eight last inscriptions have to be taken. At the end of each quarter, the "*Assistance Publique*" sends to the School of Medicine a register, mentioning the number of signatures collected in the different hospitals.

To come back to the third year, the ninth inscription has been taken, and the obligatory clinical studies have been commenced. At the close of this year, an examination has to be passed upon Internal and External Pathology (*i. e.*, the Theory and Practice of Medicine and Surgery). There are lectures on these subjects during both sessions. Notwithstanding the hospital and the school, there

is still time left for Anatomy, and it may be well to take a dissecting card which, it has been seen above, costs twenty francs. The January and April inscriptions are received as usual. In April the spring lectures are opened. Although the programme does not require the lectures upon Obstetrics, Materia Medica, Pharmacy, etc., to be followed during this course, still it will do no harm, and lessen after work, to devote some attention to these subjects. During the spring session, a card for Operative Surgery is given for ten francs. In June, the examination fee—thirty francs—is paid. Immediately after receiving the twelfth inscription, in July, the third and last yearly examination upon Medicine and Surgery has to be passed. During summer, the school is again closed, but the hospitals must still be visited twenty-eight days a month, unless for some good reason a leave of absence is obtained. The thirteenth inscription is delivered in November. This year there is no examination, and the student is left free to prepare himself for the doctorship. In order to receive the diploma, there are five examinations and a thesis to be passed. These ordeals bear upon the following matters :

First examination, Anatomy, Physiology and Histology. An anatomical preparation has to be made.

Second examination, Medicine and Surgery. An operation must be performed on the dead subject.

Third examination, Natural Philosophy, Natural History and Chemistry.

Fourth examination, Therapeutics, Materia Medica, Medical Jurisprudence and Hygiene.

Fifth examination, Clinical Medicine, Surgery and Obstetrics. A patient must be examined in each branch ; the diagnosis, prognosis and treatment established.

Sixth examination, the Thesis. The subject is selected by the candidate, and is submitted to a verbal discussion.

Thus it will be seen that there is much to do in reviewing former studies during the fourth year. Of course, in winter students will dissect—the card, as above, costs twenty francs ; and during spring, Operative Surgery will be studied—the fee is ten francs. The inscriptions are taken out as usual, and the hospitals visited until July, when the obligatory attendance ceases. The lectures upon Medical Jurisprudence, etc., will be followed.

I omit the names of Professors, etc., as there are always printed lists of the days of lectures at the school. I will say, however, that there are *twenty-six* titular and *forty* supplementary professors (*agrégés*). Among these last, however, thirteen are waiting for vacant posts, before they can take an active part in the school. It may not be out of place to explain how the nominations are made. The supplementary professors are chosen for a number of years, after undergoing a competitory examination. They are styled "*Professeurs Agrégés,*" and when their terms of service expire, they are called "*Agrégés Libres.*" It is from this corps that the titular professors, when death or resignation produces a vacancy, are recruited. The titulars select whom they choose from among the *agrégés libres,* and their choice has to be confirmed by the Emperor. Lately a departure was made from this rule, and a professor (Dr. Germain

Sée) was selected to fill the chair of Therapeutics and Materia Medica, who had never been an *agrégé*. This proceeding caused some trouble and disappointment at the school. The number of professors may seem large, but it must be remembered that there are, in many instances, more than one occupant for each chair—I mean titular occupants. Thus, at the school in winter and in spring, there are lectures upon Internal Pathology (*i. e.*, Medicine), and there are two professors for this branch. So it is also at the hospitals, where, taking the "*Charité*," for instance, there is a clinical lecturer upon Medicine in winter, and another in spring. Each titular has a certain number of supplementary professors, who take the chair in case of illness, etc.

To return, however, to the fourth year's studies. When the July inscription—the sixteenth and last—has been taken, the summer will be well spent in preparing for the Anatomical examination, which can be passed as soon as the school opens in November. The cost of this, and the other examinations for the *degree*, independently of the thesis, is 450 francs, and as there are five examinations, it follows that each one costs 90 francs. Should the result prove unfavorable, one-half of the sum, 45 francs, is returned. The fee for the thesis is 250 francs; as it must be printed, the same amount may be set down for expenses, making the *thesis* come to about 500 francs. The diploma costs 100 francs additional. When the last inscription has been taken, students are at liberty to pass their examnations for the degree as rapidly as they may feel prepared. Beginning in November with the first, it is possible, provided no time be lost, to obtain the diploma at the end of the following May.

I will now recapitulate the different fees, starting from the very outset. Hitherto I have not mentioned a small government tax, which has to be paid, with every fee, for stamped paper:

First year's expenses	*f.* 181.40
(I omit the fee for the chemical laboratory, as this is not obligatory.)	
Second year's expenses	181.40
Third " "	181. 0
Fourth " "	151.20
(There being no yearly examinations, the expenses are smaller.)	
Examinations for the degree, thesis, diploma, printer, etc.	1051.40
Total expenses at the school, from the outset to the completion of the entire course of studies	*f.* 1746.80

In the above figures there are not, of course, included the purchase of books, instruments, and the lectures of private teachers. Books and instruments, especially the former, are not very costly, medical works being much cheaper than in the United States. In the preceding lines, I have endeavored to convey the information necessary to those who intend taking regularly the full course of the Medical Department of the University of France. Graduates from other schools, who wish to take the degree at Paris, are required merely to pass the five examinations for the Doctorship and the thesis, courtesy towards the school from which they come dispensing with the sixteen inscriptions. The Minister of Public Instruction must, however, be applied to, in order to receive permission thus to graduate. Applicants are, notwithstanding this permission, required to

pay for the sixteen inscriptions and the yearly examinations, just as if they had taken the former and passed the latter. The minister is empowered to dispense with some of the foregoing requirements, whenever he thinks such a proceeding advisable. The Government can, in certain cases, which are rare however, authorize a physician who has graduated at a foreign Faculty, to practice in France without passing through French schools. When this favor is granted, the applicant is obliged to pay the sum it would have been necessary to expend, had he received a French diploma. Foreigners who graduate at a French school, are entitled to practice in France, as though they were French citizens. A foreign physician is also allowed to exchange his *foreign diploma* for the title of "*Officier de Santé,*" which is an inferior medical degree in France. Whilst, however, a student who wishes to become an "*Officier de Santé*" has to take twelve inscriptions, and pass two yearly, as well as three other examinations, for the diploma; a *foreign physician* may be released from these formalities by the Minister, and be allowed to practice with the title of "*Officier de Santé.*" The privileges conferred upon persons invested with this degree are somewhat limited, for they are allowed to exercise their profession only in the department, *i. e.*, section of country in which they have been received; and when it becomes necessary to perform a "*grande opération,*" the presence of a *doctor* is requisite. Otherwise the "*Officier de Santé*" is liable to prosecution, not criminally, but he may be compelled to pay an indemnity, should the result of the operation be unfortunate.

I have given these last details, thinking they might be of interest to Americans who may desire to establish themselves in France. As to the expense of living in Paris, this depends naturally upon individual tastes and inclinations; where, however, economy is observed, but little difference will be found to exist between the prices of this capital, and those of the principal cities in America.

Thomas Layton,
of New Orleans, Louisiana.

Necrological.

The late Dr. G. A. Nott.

On the 6th day of June, 1867, Dr. Gustavus Adolphus Nott, one of the oldest members of the Faculty of the Medical Department of the University of Louisiana, died at Montgomery, Ala. He had but a few days previously left New Orleans, for the purpose of paying a visit to his native South Carolina, with the double object of restoring his lost health and enjoying the company of the few remaining members of his family and the scenes of his earlier days. The All-wise decreed that he should be called back to Him, far from them,

and far from those among whom he had passed the whole of his active life. But he was not among strangers: the medical world throughout the South knew him as a very accomplished and most amiable colleague, and those belonging to it in Montgomery, when they learned of his need of their attentions and sympathies, extended them to him with all the generosity characteristic of their noble profession. His last hours were comforted and soothed with all the kindness and assistance his condition demanded; and great is the consolation to his bereaved relatives and his intimate friends and associates.

Dr. Nott was born in Columbia, S. C., on the 29th of June, 1816. He was the youngest of seven children born to Judge Abraham Nott, a gentleman of the old school, highly esteemed in all the relations of life, and who took the highest pride in the education of his family. The names of Dr. Josiah C. Nott, of Dr. G. A. Nott, and of Prof. Henry Nott, are brilliant testimonies to the efficiency with which they were taught, no less than to their own natural talents.

Of the earliest days of the subject of our obituary, we have but little information. After passing through his scholastic course, he entered the Medical Department of the University of South Carolina, and graduated there. Shortly after this he went to Paris, and remained there for a couple of years, increasing his practical knowledge of his profession and of the French language, with the literature of which he became richly informed.

About 1837 he came to New Orleans, and in 1838 was elected Professor of Anatomy in the Medical College now constituting the Medical Department of the University of Louisiana. On the 16th of March, 1841, he resigned that chair on account of ill health, and returned to South Carolina, where in 1845 he married Miss Hannah, daughter of Judge Angus Patterson, a worthy legal associate of his admirable father. In 1848 Dr. Nott returned to New Orleans, bringing his adored wife with him. On the 27th of October in that year, he was elected to the chair of Materia Medica in the College, and this he continued to fill with efficiency and success up to the time of his death.

In the meantime, however, on the 24th of August, he had met with the severest blow of his life, in the death of his beloved wife, who died in giving birth to an only son, Angus Patterson Nott, who still survives. From the effects of this calamity Dr. Nott may faithfully be said to have never recovered. Not without cause he had

loved and honored her as the best of women while alive, and dead he cherished and revered her memory, at the expense of his own health and spirits, although he manfully refrained from exposing this to the gaze of the world, and pursued the even tenor of his way as a true gentleman.

Genial, generous, high-toned and scrupulous to a degree that some would even criticize; read in general literature to an extent but seldom attained by so thorough and exact a professional man; kind to the poor, a warm and true friend, he was beloved by the students and graduates of the University, esteemed by his associates, adored by his friends, admired by all with whom he came in contact, and he leaves nothing behind him or his name but honor and sympathy.

Dr. Nott did not write voluminously; but papers by him on interesting and important subjects are to be found scattered through the pages of the various medical journals published in his day. Among them is one on Bebeerine, the use of which he was the first to introduce here, and which he employed with great success. In his lectures he was singularly felicitous, and every branch of his subject was treated with a marvellously chaste combination of comprehensiveness, simplicity and accuracy. In addition to the chairs he filled in the Medical College, he also filled that of President of the Board of Health from 1861 until the breaking out of the war, when he joined "the lost cause," and sacrificed everything in it, serving in various medical capacities until all the patients under his charge in Columbus, Miss., after the surrender, had been disposed of. He then returned to New Orleans and resumed his duties in the University, which closed only with his lamented decease, after a connection with the Medical College of twenty-one years.

This brief tribute to his memory expresses only little of the extent or depth of regard in which it is held, or which it merits; but it is written with sincerity, and with regret that it is not more worthy of his excellent character in all the relations of life.

B. & D.

Dr. James Metcalfe,

For many years a successful practitioner in Natchez, Miss., and vicinity, and who recently died at the advanced age of 78 years, well deserves a tribute of remembrance for his medical skill and his

many good qualities of head and heart. He was among the first, if not the very first, to discover the great power and utility of quinine in large and sedative doses in the treatment of periodic diseases. At the present time, when this practice has become familiar to both the professional and non-professional, the merit of its initiation is apt to be undervalued, but the older members of the profession will remember that there was a time when doubt and uncertainty on this subject were universal; and then it was that Dr. Metcalfe had the penetration to discover, and the boldness to advocate, the truth. To him is great credit due, also, for the early and appropriate use of tartar emetic in the exacerbation of fever, and in pneumonia; and few are more successful in the treatment of these diseases now than he was forty years ago. The writer, with scarcely less experience in Southern practice, acknowledges great obligations to Dr. Metcalfe for his exhibitions of medical skill, and for his many manifestations of professional kindness.

M.

R. J. Breckinridge, M. D.

Dr. Robert J. Breckinridge, the third child of Wm. L. Breckinridge and Frances C. Prevost, was born in Kentucky, December 2, 1828.

His father is a distinguished divine, and both parents still reside at Danville, Ky., beloved by numerous friends. After having completed his literary education at Center College, Robert Breckinridge entered upon the study of medicine, and graduated at the University of Louisville. Immediately after this event, he went abroad and spent some eighteen months in the further prosecution of his professional studies.

Upon returning to America, he was married in 1853 to Miss Hunt, daughter of A. D. Hunt, of Louisville. About this period he was elected to a Professorship in the Kentucky School of Medicine, and likewise received from President Pierce the appointment of Surgeon in charge of the United States Marine Hospital, at Louisville, which position he retained during the administration of President Buchanan.

In 1856 he resigned his chair in the Kentucky School of Medicine, to accept that of Materia Medica and Therapeutics in the Medical Department of the University of Louisville. This position he continued to fill with great credit both to himself and the Institution with which he was connected, until the summer of 1861, when he

offered his resignation, that he might join his fortunes with those of the South in the conflict which had then commenced. The writer was witness to the deep sorrow with which this step was taken; yet Dr. Breckinridge regarded it as a solemn duty, and did not hesitate in its performance. Those alone are prepared to say how painful this sacrifice must have been, who knew of the enviable positions of preferment and social enjoyment which he abandoned; but more than all who knew of the happiest of homes whose endearments he forsook.

He was appointed Surgeon in the C. S. A., and served in that capacity with the 4th Texas Infantry. So strong was the attachment of this Regiment to their Surgeon, and his in turn to them, that he declined all offers of promotion until its reduced numbers required its consolidation with other commands. He then received an appointment as Inspector upon the Medical Staff of the Army of Northern Virginia, which position he retained until the surrender of the Confederate forces.

At the conclusion of the war Dr. Breckinridge removed to Houston, Texas, where he engaged in the practice of his profession, and where his death occurred on the 8th day of July, 1867, of apoplexy.

Few men were more gifted than our lamented friend. Nature had unstintingly bestowed upon him every endowment requisite to mark him as one of the most select of her noblemen. Of commanding stature and form; of strikingly attractive features; polished and graceful in manners; with a mind stored with learning; witty, versatile and fascinating in conversation, he won the admiration and regard of all who shared his society.

But that chosen number to whom it was a sacred privilege to claim admission to the inner sanctuary of his affections, found attractions more precious and enduring in the tender, refined and pure sentiments which filled his heart, and which only bloom where there are love and reverence for the holy and good, both upon earth and Above the earth. B.

Editorial.

Health of the City.

New Orleans has long enjoyed the distinction of preëminence in sickliness, as well as wickedness, among the cities of this happy country, and we are not disposed now to take these points up for controversy. As we are a people governed by majorities, it is probably becoming to admit the logic and "accept the situation."

Nevertheless a few notes on the sanitary condition of the city during the summer months may not be uninteresting to our readers, nor without value for future reference.

The prevalence of cholera in our midst last year led to a dread of its reappearance in a more threatening attitude the present season; and the occurrence of an alleged case in the city of Jefferson, contiguous to New Orleans, during the last week of May, excited considerable alarm. June passed without a realization of these fears, the mortuary reports published by the Board of Health giving only four deaths from this disease during the month. In July there was a gradual increase from week to week, giving respectively 2, 7, 10 and 17 deaths, amounting in all to 36 for the month. In August 39 deaths were reported, the number each week declining after the 11th. At the present time it has almost disappeared, and scarcely excites a remark.

The first authenticated case of yellow fever occurred during the second week in June, in the person of an Austrian living at the head of the New Basin, who died at Charity Hospital. At the opening of the warm season there had been the usual speculations in regard to a visitation of this dreaded disease, and this early apparition created considerable alarm among the unacclimated. Still the month passed without justifying their forebodings, only three deaths from the fever being reported. In July there was a slight increase, chargeable partially to the arrival of the bark "Florence Peters," a full account of which appears in this Number. The predicted outbreak from this focus of infection has not, however, been fulfilled, though it must be admitted that a pretty fair opportunity was presented.

During the month of August there was a very notable spread of the fever and increase of mortality, progressively from week to week and almost from day to day, giving an aggregate mortality for the month of 255. From August 12th daily mortuary reports were published, which may be relied on as correct for the entire urban population in civil life, and including about 40 cases from the gunboat "Mahaska," sent to Charity Hospital during the last week of the month. These reports are based upon the returns of the sextons at the different cemeteries, and do not include deaths among the land and naval United States forces. It is believed, however, that the latter would not greatly swell the total number.

Below we give a summary of the daily reports furnished by the Board of Health, from the date mentioned to the end of August,

premising that each return is made up to 6, A. M., consequently comprising the interments for the previous day :

Date.	Yellow Fever.	Cholera.	Various Diseases.	Total.
August 12	2	0	26	28
" 13	5	1	27	33
" 14	5	1	31	37
" 15	2	1	24	27
" 16	1	1	32	35
" 17	5	2	20	27
" 18	6	2	31	39
" 19	12	0	22	34
" 20	11	2	19	32
" 21	10	0	13	23
" 22	4	0	23	27
" 23	7	1	19	27
" 24	19	1	29	49
" 25	14	1	17	32
" 26	15	1	22	38
" 27	14	0	22	36
" 28	15	0	17	32
" 29	20	0	27	47
" 30	26	1	24	51
" 31	22	1	19	42
Sept. 1	17	0	18	35

It is to be observed that the requirements are nearly answered to constitute the disease epidemic—that it should be generally prevalent throughout the city, and afford a mortality exceeding that from all other causes. At the same time it must be admitted that the season is not too far advanced for the city to be severely scourged before the fever shall be checked by frost ; and it is a patent fact that the unacclimated proportion of the population has never before been so large since the fatal epidemic of 1853. On the other hand it is generally remarked that the malady is of an unusually mild type, although the unwonted coolness of the nights during the latter half of August might be expected to occasion an increased mortality.

The meteorological history of this season, thus far, is said by the old inhabitants to correspond closely to that of 1853 : rain has been frequent, and sometimes excessive ; northerly winds, sometimes cool, sometimes oppressively warm, have been unusually common. Apprehensions of a destructive epidemic have been freely entertained, even by medical men ; and the visitation of Corpus Christi, Indianola and Galveston, on the Texas coast, and more recently of the inland town of New Iberia, hitherto, except in 1854, an unvisited spot, has lately caused here serious alarm.

Another characteristic of the present epidemic, we learn, is that it occasionally attacks negroes, following the solitary precedent of 1853. We infer that this is one of the *civil rights* conferred on that fortunate class by the late enlightened Congress, of which they are already availing themselves.

The Charity Hospital, as usual, has been a fair index of the progress of the fever this year, though last year it failed to receive its accustomed share of the cases, probably because they mostly belonged to a better station in life than its inmates. During the last week in August the admissions of fever cases varied from 30 to 60 daily, and the month closed with the house filled to its capacity of convenience. There, however, as outside, the prevailing type is considered as remarkably mild, and late cases more so than the earliest, notwithstanding the unusually low temperature for the season.

A word upon the hygienic condition of the city will not be out of place here. The Board of Health, the Street Commissioner's Department and the Military Authorities have been coöperating harmoniously and successfully, and the sanitary police of streets, lots and premises is now confessedly better than at any other time since the close of the war. The disinfection of cholera dejections by carbolic acid and sulphate of iron, and of infected apartments by sulphurous acid, has been rigorously carried out under the supervision of the four District Health Inspectors, and to this chiefly is attributed the check and final suppression of that pestilence. The disinfection of premises and fomites exposed to the fever is supposed by the President of the Board of Heath, Dr. S. A. Smith, to have contributed materially in mitigating its severity this year. But the value of any means of disinfection on theoretical grounds is simply speculative, and can only be determined empirically ; while the experiments of a single season will not demonstrate them to cold medical reason, as specific or antidotal. At all events, however, the experience of this year would fully justify further and thorough trial of the means now so vigorously used under direction of the Board of Health and its energetic and efficient assistants, the District Health Inspectors.

New Orleans Dental College.

We have received a circular announcing the first course of lectures in this institution, to commence in November, 1867.

The Board of Trustees is composed of twelve well-known citizens, whose standing in the community gives a weight and promise to the undertaking calculated to command the confidence of the public. The Faculty, composed of some of the most able and active practitioners of Dentistry and Medicine in New Orleans, are well qualified by their zeal and attainments for rendering the course of instruction an efficient one.

When it is considered how much the public system of instruction in Medicine has promoted it in this country, both as a science and an art, and how great benefits have thereby accrued to humanity; and especially when it is considered how much the great South-west is indebted to its several Medical Schools, all founded in the last thirty-three years, we have reason to look with favor and high expectation on this attempt to place Dentistry upon a more elevated stand and advance its usefulness. New Orleans has become the Medical centre for an already vast and increasing territory, the recip rocal benefits of which establishment to the profession and the pub*ic* are incalculable. It is eminently proper that our city should also be the focus from which the Dental science and art should diffuse its rays. South of Baltimore there is no institution of this kind. The area tributary to this school is therefore ample, and the field an inviting one. We heartily wish its cultivators success, and have no doubt that their perseverance will be fully appreciated and rewarded.

Subscribers

Are again reminded of their obligations and our necessities. Our liabilities must be met with cash payments, and the proprietors cannot furnish the *Journal* without the subscription money. We wish each subscriber who is in arrears to consider this specially addressed to himself, and that all who desire the *Journal* continued send us its price in advance.

Erratum.—In the review of the second edition of Professor H. R. Storer's "Why Not," in our last issue, by a typographical error, "freemen," quoted from one of his closing paragraphs, was printed "freedmen." The author complains of being misquoted, and may be assured that the act was not intended. We add that this interpolation of the *d*, however, lends his proposition a partial correctness in fact, which it did not before possess; as is well known by those here whose recollection extends back to a period not very remote, when constitutions and laws were respected.

List of Journals Received.

Medical Times and Gazette (London)—June 15, 22, 29; July 6, 13, 20, 27; Aug. 3, 10, 17.
Gazette Médicale (Paris)—June 8, 15, 22, 29; July 6, 13, 20, 27; August 3, 10.
Journal de Médecine et de Chirurgie Pratiques (Paris)—June, July, August.
Chemist and Druggist (London)—June 15; July 15, August 15.
Druggists' Circular (New York)—July, August.
Atlanta Medical and Surgical Journal—July, August.
The Cincinnati Lancet and Observer—July.
The Western Journal of Medicine—July, August.
Medical and Surgical Reporter (Phila.)—June 22, 29; July 6, 13, 20, 27; August 3, 10, 17, 24.
The Medical Reporter (St. Louis)—July 15; August 1, 15.
The New York Medical Journal—July, August.

The Medical News and Library (Phila.)—July.
The Richmond Medical Journal—July.
The Boston Medical and Surgical Journal—June 20, 27; July 4, 11, 18, 25; August 1, 8, 15.
Buffalo Medical and Surgical Journal—June.
The Chicago Medical Examiner—July.
The Pacific Medical and Surgical Journal—June, July, August.
The London Lancet (reprint, N. Y.)—June, July.
Nashville Journal of Medicine and Surgery—July, August.
Southern Journal of the Medical Sciences—August.
American Journal of Science and Art (Silliman's)—July.
The Dental Cosmos (Phila.)—July, August.
The Galveston Medical Journal—July.
The Detroit Review of Medicine and Pharmacy—July, August.
The American Journal of the Medical Sciences—July.
Quarterly Journal of Psychological Medicine and Medical Jurisprudence—July.
DeBow's Review (New York)—June.
Braithwaite's Retrospect—July.
The Half-Yearly Abstract of the Medical Sciences (Ranking's)—July.
Journal de L'Anatomie et de la Physiologie (Paris)—July.
Boston Journal of Chemistry—August.

CONTRIBUTIONS HAVE BEEN RECEIVED

Since last publication from Robt. H. Chinn, M.D., Caney, Matagorda County Texas; Jno. S. Wilson, M.D., Bedi, Grimes County, Texas; and Thos. E. Broaddus, M.D., St. Charles, La., which will receive early attention.

Books and Pamphlets Received.

Notes on the Origin, Nature, Prevention and Treatment of Asiatic Cholera. By John C. Peters, M.D. *Second Edition, with an Appendix.* 12 mo., pp. 200. New York: D. Van Nostrand, 192 Broadway. 1867.

Menstruation, or the Menstrual Flow: an Epiphenomenon of Ovulation. An Argumental Treatise read before the St. Louis Medical Society, on the Question: Is Menstruation Ovulation? By G. M. B. Maugus, M.D., Prof. Obstetrics and Diseases of Women and Children in the Humboldt Medical College, of St. Louis, Mo. Pamphlet, pp. 59.

Thirty-First Annual Announcement of the Medical Department of the University of Louisville, Session of 1867–68. With a Catalogue of Students for Session of 1866–67.

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia. From December 6, 1865, to November 7, 1866, inclusive. Pamphlet, pp. 37.

Twenty-Fifth Annual Announcement of Rush Medical College, Chicago, Illinois, for the Session of 1867–8, with Catalogue of Previous Session.

Catalogue of the Medical College of Virginia, Session of 1866–67, and Announcement, Session of 1867–8.

Thirty-Third Annual Announcement of the Medical College of Georgia. Augusta, Ga. 1867.

The Physiology and Pathology of the Mind. By Henry Maudsley, M.D., Lond., Physician to the West London Hospital; Honorary Member of the Medico-Psychological Society of Paris, &c. 8 mo., pp. 442. New York: D. Appleton & Co. 1867.

Annual Report of the Commissioners of Emigration of the State of New York, for the year ending December 31, 1867.

Prize Essay on Medical and Vital Statistics. By Franklin B. Hough, M.D., of Lowville, N. Y., Superintendent of the New York State Census of 1855 and 1865. Pamphlet, pp. 37.

Ninth Annual Announcement of the Chicago Medical College, Medical Department of Lake Forest University, Chicago, Ill. For the Session of 1867–8.

Nineteenth Annual Catalogue and Report of the New England Female Medical College, Boston. 1867.

Administration of Chloroform by Deglutition. By Jerome Cochran, M.D., Mobile. Pamphlet, pp. 26. Nashville. 1867.

List of books, journals, reports, etc., contributed to the library of the medical department of the university of Louisiana, with the names of contributors.

Byford on the Uterus.

Byford—Medical and Surgical Treatment of Women. From the Author.

Smithsonian Miscellaneous Collections; vols. i. to vi.

United States Sanitary Commission; five volumes. From Prof. Henry.

Report on Interoceanic Railroads and Canals. B. F. Sands, Commodore U. S. Navy.

Mémoires et Bulletins de la Societe Medico Chirurgicale des Hopitaux et Hospices de Bordeaux. Tome 1st, 1866; Tome 2d, 1867.

Galveston Medical News. Editor.

Cholera as it appeared in Nashville in 1849, 1850, 1854, and 1866. W. K. Bowling, M.D., Prof. of Institute and Practice of Medicine, University of Nashville. From the Author.

Philadelphia Medical and Surgical Reporter. From the Editor.

From Henry C. Lea, Philadelphia: "Half-yearly Abstract of the Medical Sciences" for January, 1867. Various copies of "Illustrated" and "Classified" Catalogues.

From Metropolitan Board of Health: Report of the Metropolitan Board of Health for 1866.

Thirteenth Rhode Island Registration Report for 1865. From Dr. E. H. Snow.

Boston Medical and Surgical Journal, from May 1 to 30; June 1 to 26, and August. From Editors.

Physician's Report of the St. Vincent's Institution for the Insane, at St. Louis, for 1864 and 1865. From Dr. T. Keating Bandny.

Catalogue from Charles Scribner & Co., 654 Broadway, N. Y. City.

Fortieth Annual Report of the Board of Trustees and Officers of The Ohio Institute for the Education of the Deaf and Dumb.

Proceedings of the State Medical Society of Connecticut for the years 1864, 1865, 1866 and 1867. From Moses C. White, M. D., Secretary.

Circular No. 6, from Surgeon General's Office. From Surgeon General.

Mortality Statistics of Eighth Census. From Census Bureau.

Lessons upon the Diagnosis and Treatment of Surgical Diseases—by Professor Velpeau. James Campbell, Boston. From publisher.

Methomania—a treatise on Alcoholic Poisoning—by Albert Davy, M. D. James Campbell, Boston. From publisher.

From Dr. Edwin M. Snow, Register of the City of Providence, Rhode Island: Registration Reports of Rhode Island—Nos. 3, 5, 6, 7, 8, 9, 10, 11, 12 and 13. Census of Rhode Island, 1865. 19th Registration Report of Massachusetts. Various reports to Health Office of City of Providence.

American Journal of the Medical Sciences—from Henry Lea, publisher, Nos. 706 and 708 Samson street, Philadelphia.

Forty-third Annual Report of the Officers of the Retreat for the Insane, Hartford, Connecticut.

From the Editor—copies of Nashville Journal of Medicine and Surgery, for July, August, October and November, 1866, and June, 1867.

Richmond Medical Journal for July. From Editors.

New York Medical Journal for June. From Publishers, A. Simpson & Co.

Washington Astronomical Observations for 1851, 1852 and 1865. From the U. S. Naval Observatory.

Circular No. 5—from Surgeon General's Office.

Remainder of Contribution from the late Professor Hunt.

London Lancet—March, April, May, June, 1867. London Medical Times and Gazette—March 9, March 16, March 23, March 30, April 6, April 13, April 20, April 27, May 4, May 11, May 18, May 25 and June, 1867. Medical News and Library—May, June and July 1867. Robin's Journal de L'Anatomie et de la Physiologie—January and February, March and April, May and June, 1867. American Journal of Medical Sciences—July 1867.

THE

New Orleans Medical & Surgical Journal.

NOVEMBER, 1867.

ORIGINAL COMMUNICATIONS.

Scientific and Practical Essays.

ART. I.—ANEURISMS OF THE ARCH OF THE AORTA:

By EDMOND SOUCHON, M. D., New Orleans.

(Continued from the September No.)

COURSE OF ANEURISMS OF THE ARCH.

THE course of aneurisms of the arch is very variable, and is generally difficult to follow in the first stage of the disease. It is most often slow and unnoticed at the beginning, but sometimes very rapid in its development; in some instances the appearance of the tumor externally is the first symptom, but then it gives the start to a more or less rapid course.[1]

The symptoms of compression are remarkable from the irregularity of their course: they appear, decline, disappear and re-appear to fade away again, or to remain till the end, according to the direction taken by the aneurism in its development. Stokes[2] speaks of a case in which, after the existence of manifest physical signs and symptoms of aneurism, existing in front of the thorax, the extraordinary circumstance occurred of the disappearance of all physical signs of aneurism; so that, had the patient been examined at that moment by an observer ignorant of the previous circumstances of the case, and who trusted in negative results as proving the absence of aneurism, the patient would have been declared free from the disease, although at the time there existed a vast false aneurism which had,

1 Valleix, *op. cit.*, p. 200.

2 Stokes, *op cit.*, p. 608.

as it were, formed a chamber for itself at the expense of the bodies of the vertebræ.

DURATION OF ANEURISMS OF THE ARCH.

(a) In general, the duration varies from a few months to upwards of three years, the average being from nine to twelve months (Wood). Valleix[1] says that he has not found a case in which the disease had gone through all its periods in less than three years. Gairdner,[2] though, says that it may sometimes last nearly five years.

(b) In cases of rupture, Dr. Gairdner, consulting the works of Dr. Edward Crisp and Dr. Sibson, could find only nine cases in which an interval of a month or more existed between the hemorrhage and death. In a case of Dr. Sibson's manuscript, hæmoptysis is stated to have taken place seven years before death; but the connection of the hæmorrhage and the aneurism does not appear to be clearly made out by the history. In cases of rupture on the internal surface of the body, a considerable interval (four months, one year), existed between the opening and death.[3] In cases of rupture in vascular cavities or varicose aneurism, the disease has sometimes no duration, and death is instantaneous or takes place in a few hours; but, other times, the patients may struggle during several days, weeks or months; none, though, has yet resisted over ten months. In instances of dissecting aneurisms, death is earlier still, because, besides the deviation of the blood from its normal course, there is often obliteration of arteries distributing blood to important organs. The epoch or age at which death occurs, has been already stated (see Frequency).

(c) The seat of the aneurism influences the duration: as we have already said, in consequence of the absence of a distensible coat around the intra-pericardial portion of the ascending aorta, those aneurisms prove fatal from rupture at an earlier period.[4]

TERMINATION OF ANEURISMS OF THE ARCH.

We have very little left to say here about the termination. Having considered the termination as a stage of the disease, we have, in every preceding chapter, given a full account of the termination, and shall not repeat it.

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1 Valleix, *op. cit.*, p. 201.

2 Gairdner, *op cit.*, p. 509.

3 Communications of Mr. Ramsay, Surgeon at Broughty Ferry, to Mr. Syme, in *Monthly Med. Journ. of Med. Sciences*, Vol. 10, p. 89; or see Gairdner, *op. cit.*, p. 517.

4 Thurnam, *Aneurisms of Heart*, *op. cit.*, p. 232.

Diagnosis of aneurisms of the arch of the aorta.

We have arrived now at another very important part, if not the most important, of the history of aneurisms of the arch of the aorta. The following diagnosis will resume all that is practically possible to detect, and all that is also practically indispensable to know, in order to make a prognosis and institute a treatment. It may be said of aneurisms of the arch what is often repeated about obstetrical cases—that the diagnosis, when easy, is most easy; and when difficult, is most difficult. The practitioner at the bedside of the patient, when led by some cause or other to seek for an aneurism, to ascertain whether there is one or not, must be prepared to meet one of the four stages above mentioned. In discussing the diagnosis between aneurism of the arch and another disease, we shall enter into details only when there may be some special signs not mentioned, or not usually so, in our description of aneurisms of the arch, or in that of the said disease in our standard books. In all apposite circumstances we shall make it a point to refer the reader to the description of those diseases, because, to repeat the symptoms by which they differ from aneurism of the arch, would make it an endless chapter. Were we writing only on the diagnosis of aneurisms of the arch, it would be a quite different thing, and we should then transcribe here the symptoms and signs of these diseases given at length in books and presented by the patients. But this is not the case, and, in all similar cases, the plan, or better, the *method* of the diagnosis is, according to our judgment, the only real important and difficult part; as, we repeat it, the differential signs offered by aneurism of the arch and indicated in the diagnosis are to be found in the anatomy, physiology and pathology proper of these aneurisms, and the differential signs offered by the compared diseases are to be found in the ordinary descriptions of those diseases in every book on pathology.

1*st Stage.* The first or primitive stage, corresponding to the anatomical changes in the parieties of the artery and preceding the formation of the aneurism, is most obscure in its diagnosis. The general state of the patient, his habits (alcoholic), his age, the feeling of some superficial artery which may be hardened from atheromatous deposits, will give a pretty good ground. The blowing sound heard, in some of these cases, at the superior extremity of the sternum, might easily be confounded with that of anæmia or stricture of the aortic orifice, as those sounds are often propagated to a cer-

tain extent on the course of the aorta; but there will be this capital fact, that the sound will have its maximum of intensity at the base of the heart, as in anæmia and aortic stricture, but behind the upper end of the sternal bone, or on the right of it and at a level with the second rib.

2nd Stage, or Stage of Formation. (a) When the formation is rapid, and when the patient presents the anxiety, the dyspnœa, etc., accompanying this formation, the only diseases which present, at their beginning, any analogy with a rapidly formed aneurism, are rupture of the heart, rupture of the aortic valves, rupture of a pre-existing but undetected aneurism (followed by death or by a spontaneous varicose aneurism or a dissecting aneurism), embolism of the pulmonary artery, or lastly, formation of fibrinous concretions in the cavities of the heart. The doubt may exist for some time, but the subsequent course or termination of the disease,the phenomena accompanying death (when it occurs), and the symptoms, both local and general, that set in, should the patient survive, will generally soon allow to pronounce positively. (See, for details, the description of those diseases in standard or special books.) (b) If the formation is slow and gradual, it can only be suspected by the physician when he happens to set his mind on that disease; however, Dr. Billing considers the "resilient pulse," above mentioned, as a means of detecting aneurisms in the early stage of their formation.

3rd Stage. The diagnosis, when the disease is in the third or developed stage, is the most common one that the physician is called to make. It is the longest, the most complicated and the most important. It varies with the seat.

A—The diagnosis of aneurisms of the ascending and transverse arch comprises: (a) the differential diagnosis with diseases of other surrounding parts; (b) the diagnosis between arterial and varicose aneurisms; (c) the diagnosis of the peculiarities of arterial aneurisms; (d) the same of varicose aneurisms.

(a) The differential diagnosis, that is, to establish that there is an aneurism and that it is one of the ascending or transverse arch, is made by two different sorts of symptoms, the rational and the physical symptons.

(1) The rational symptoms, or symptoms of compression, when the patient is carefully and properly questioned, may permit the physician to make the diagnosis without the physical signs, should he

be prevented from examining physically by some circumstance or other; or even in the absence of the patient, being consulted by another person well aquainted with the patient and his complaints. We should always, though, control the results of the investigation of the patient by physical examinations of the chest. The interrogations of the patient may prove fruitless, as in the latent form of aneurisms of the arch, which may be suspected and sometimes positively ascertained by the signs of compression; though in some instances, as we have said, no trouble whatever leads to the suspicion of an existing aneurism of the arch, and death is the only thing that might awake the idea of aneurism, which idea cannot be confirmed but by the autopsy. However,[1] when obstinate and anomalous thoracic symptoms, which might be explained by the presence of an aneurismal sac, occur, in a person whose lungs and heart appear to be in every respect sound, and whose general health is not very materially affected, we may suspect an aneurism to be the source of the troubles. Thus sometimes from coincidences of compression recognized by the attentive physician, he infers the true nature of the case, although utterly unable to discover any of the ordinary physical signs of an aneurism. Considering each phenomenon of compression or each group of them, it is necessary to be guarded against some causes of error, which merely requires mention to be avoided, either in seeking the signs of the uncertain disease to learn its existence, or the other signs of the mistaken aneurism to confirm its presence.

(s) Compression of bones, when giving rise only to pain, may be confounded with a mere neuralgia; when followed by perforation, that perforation might be mistaken for caries, necrosis, abscess from ostitis and periostitis or hæmatic tumors, all of which generally have an indurated base. (t) Compression of the lungs, from the symptoms produced, may be mistaken for phthisis pulmonalis and tuberculous cavities, pneumonia, gangrene of the lung. (u) Compression of the bronchi, trachea and recurrent nerves has led to suspicion of laryngitis, asthma, stricture of the trachea. (v) Compression of the different nerves may be mistaken for different diseases, according to the nerve compressed and to the subsequent symptoms: of the pneumo-gastric and sympathetic, on account of the pains, for neuralgia and angina pectoris; on account of digestive troubles for dyspepsia, gastralgia, gastritis, etc.; on account of dilatations of

1 Da Costa, *op. cit.*, p. 324.

the pupil (proper to compression of the sympathetic), for the other causes of mydriasis. Compression of the intercostal nerves may be mistaken for ordinary intercostal neuralgia and muscular rheumatism; of the brachial plexus, for ordinary cervico-brachial neuralgia, and also muscular rheumatism of the shoulder and arm; of the phrenic nerve, for all other causes of impairment of respiration; lastly, of the spinal chord, for all other causes of paraplegia. (w) Compression of the œsophagus leads sometimes to suspicion of stricture of the œsophagus. (x) Compression of the different arteries may be mistaken for all the other causes of loss of power, atrophy, gangrene, softening of the brain from all other causes of obliteration or embolism of arteries. (y) Compression of veins may be confounded also with all other causes of development of veins, œdema and cerebral diffusion. (z) Lastly the skin, thin and of a pinkish blue, that covers the tumor, may be thought to be affected only by erythema, erysipelas, abscess or gangrene. It is, though, very important to bear in mind that every one of these diseases of the skin and of the subjacent cellular tissue may coexist with the aneurism.

(2) The differential diagnosis from the physical symptoms, or symptoms presented by the tumor, either internal (but detectable) or external, comprises two successive operations. We must, first, make the diagnosis with non-aneurismal diseases of other surrounding organs, presenting some similar symptoms—*i. e.*, establish that there is an aneurism; secondly, make the differential diagnosis with aneurisms of the neighboring arterial cavities (heart) or channels (arteries)—*i. e.*, establish that the aneurism detected is an aneurism of the ascending or transverse arch, and not of any other artery.

(y) The differential diagnosis from non-aneurismal diseases of other surrounding organs presenting some similar symptoms, *i. e.*, to establish that there is an aneurism, must be made with affections of the lung, heart, arteries, glands and tissues of the neck, and lastly, with effusions of bones. The affections of the lungs liable to be mistaken for an aneurismal tumor are hernia of the lung, modified by the respiratory movements; cancer of the lung, complicated with pulsations; throbbing of the lung, as was, according to Stokes, observed by Dr. Graves in a case of extensive pnuemonia. (See the author's description of the signs of the disease.)

The affections of the heart and blood capable of simulating an aneurism of the arch, are anæmia, hypertrophy, aortic regurgitations, transpositions of the heart (congenital), displacement of the

heart to the right side from an empyema with communication of the pulsations of the displaced heart to the whole of a large empyematous sac (pulsating empyema). We shall call special attention to the following facts : In hypertrophy or dilatation of the ventricles of the heart, there is but one single movement, that of the ventricle, and not two beats at some distance from one another; moreover, the signs of pressure are absent.[1] Aortic regurgitation sometimes masks the other symptoms of the aneurism, and it is advisable, in all cases of aortic regurgitations, to explore the suprasternal and infra-clavicular regions. It is no uncommon mistake to diagnose aortic regurgitation coexisting with an aneurism, and to overlook the aneurism. As for pulsating empyema, two instances in which the sac had become bilocular, so that the external tumor formed the pulsating mass, occurred to Dr. Graves, and have been reported by Dr. McDonnell.[2] The differential signs of the other diseases are too easy to detect for us to dwell upon them.

The affections of the arteries that might simulate an aneurism of the arch, are throbbing of the aorta, probably from aortitis (Stokes); ordinary pulsations of the aorta, in cases of permanent patency (Stokes); dilatation of the arteries arising from the arch, in cases of aortic regurgitation; the pulmonary artery surrounded by consolidated lung tissue and presenting distinct pulsations (DaCosta); lastly, constriction of the aorta. The arteries arising from the arch, dilated and marked by the characteristic jerking impulse, might, on superficial examination, be taken for an aneurism. Instances are on record of constrictions of the aorta giving rise to a marked thrill at the upper part of the chest in front, near the sternum, and to a murmur much louder there than over the heart; but the absence of the signs of pressure and the throbbing and distension of the vessels of the neck, head and chest, of the carotid, the subclavian, the temporal and the mammary arteries, may lead to the correct appreciation of such cases.[3] Amongst the affections of the veins we shall only mention varix, or dilatation of the inferior portion of the jugular vein (Grisolle). The affections of the glands and tissues of the lower portion of the neck may be the origin of solid or liquid tumors, which, lifted by the pulsations of the arteries, may lead to error. The distinctive signs are those described by all authors.

1 DaCosta, *op. cit.*, p. 323.

2 Stokes, *op. cit.*, a remarkable case, p. 607; or see McDonnell, in *Dublin Journ. of Med. S .*, Vol. 25, p. 1.

3 DaCosta, *op. cit.*, p. 323.

Some peculiar affections of the bones, of the sternum particularly, may be mistaken for an external aneurism; such is the pulsating encephaloid. We have seen twice men of the greatest repute and highest standing make this mistake. The following distinctive signs of the pulsative encephaloid are given: first, as for local symptoms by pulsation, a plate of bone is sometimes felt in the walls of the tumor;[1] whilst, on the contrary, when an aneurism eats into a bone, it simply chisels out a hole in it; the pulsation is usually more sudden, less heaving and less expansive, is equally forcible over the same space of tumor, whether the latter be large or small, while, in aneurisms, the bulk of the swelling and the force of its pulsation increase and decrease together. By auscultation, the *bruit* is but rarely as well marked, and is often altogether absent. As for the general symptoms, pulsating tumors being usually cancerous, the general symptoms of the cancerous cachexia may be present, or some other cancerous tumor may be seen. This latter remark is of the highest importance. One of the cases to which we alluded had another pulsating tumor on the anterior part of the skull.

(z) The differential diagnosis from aneurisms of the neighboring arterial cavities or channels, proving that the aneurism detected is upon the ascending or transverse arch, presents to study the distinctive signs between aneurisms of the arch and those of the heart, pulmonary artery, innominate, left primitive and subclavian arteries.

Aneurisms of the heart, according to Dr. C. J. B. Williams,[2] who speaks more from principles than from experience, would be the following: By inspection and palpation a pulsating spot is felt between the ribs; by percussion, dullness beyond the usual limits; by auscultation, the sound heard at the pulsating spot would be a short, loud one, coinciding with the systole of the ventricle (provided that systole be strong), perhaps accompanied with a whizzing, if the sac were elastic and its neck narrow.

Aneurisms of the pulmonary artery present the following distinctive signs (Hope): by inspection and palpation is detected a pulsation, a tremor, and sometimes a slight prominence between the cartilages of the second and third ribs of the left side, perceptible in a decreasing degree downwards, but wholly wanting above the clavicle; by auscultation a very loud, superficial, harsh, sawing sound above the clavicles and over the whole pericardial region, but

1 Case of Mr. Stanley, in *Med. Chirurg. Trans.*, Vol. 28, p. 318; or see Holmes, *op. cit.*, p. 383

2 Thurnam, *Aneur. of Heart*, *op. cit.*, p. 241.

loudest upon the prominence between the two ribs mentioned. Aneurisms of the innominate artery, left carotid and subclavian arteries are very liable to be mistaken for those of the arch, and especially of the superior portion of the ascending arch and of the transverse portion of the arch. It is generally said that aneurisms of the arteries above mentioned may be distinguished by the aid of the following signs: As for the physical symptoms, by inspection, it is seen that the tumor is situated higher, above the inner third of the clavicle.[1] By palpation, the compression of the arteries above the aneurism diminishes the pulsations of the tumor, while it has no effect on an aneurism of the arch; the arteries of the right side, in aneurisms of the innominate, pulsate more feebly; it is possible to trace with the finger the lower boundary of the tumor, while the head is powerfully bent forward, so as to relax the mastoid muscles as much as possible. Instances, though, are on record of aneurism of the innominate descending in front of the arch,[2] and of both the arch and the innominate being affected at the same time: in both cases the diagnosis is impossible. By auscultation the sound of aneurism of the innominate is compared, by Hope, to that of a small hand-bellows, and the sound of aneurisms of the arch to that of a forge-bellows. The murmur, in aneurisms of the innominate, is frequently heard in the carotid at the neck and in the subclavian above the clavicle, whilst that of aneurism of the aorta is more apt to be heard when the ear is applied to the back. The symptoms of compression are less marked, as a general rule, in aneurism of the innominate. The clavicle is more often seen displaced, and the larynx, trachea and œsophagus are often thrown to the left side. Phenomena resulting from the compression of nerves, but more especially of veins, are generally limited to one side, and to the right side usually. The differential diagnosis would be important enough to be made accurately, on account of the treatment; for if the aneurism is proved to be one of the innominate or left carotid or subclavian, the ligature above the sac might be resorted to; whilst if it is an aneurism of the arch, the operation is, to say the least, useless.

(b) Arterial aneurisms differ from varicose aneurisms principally in the signs furnished by auscultation. In varicose aneurisms, says Dr. Thurnam,[3] the characters of the sound, as regards intensity and

1 See Dr. Holland's Memoir, in *Dublin Quarterly Journal*, Vol. 12.

2 Hampries, Medecin, Jahrlücher des Kais. Kronighl. osterreichen Staates Jouveng, 1845, s. 19; or see Follin, *Pathologie Chirurgicale*, Paris, 1863, Vol. 2d, p. 377.

3 Thurnam, *On Var. An.*, *op. cit.*, p. 374.

duration (it is a superficial, harsh and peculiarly intense sawing or blowing one, is continuous, but is loudest during the systole, less loud during the diastole, and still less so during the interval), will probably distinguish it from any that is heard in or among cases of aneurism or disease of the heart.

(c) The aneurism being found to be arterial, we have to determine its peculiarities, that is, its anatomical variety and form, its precise seat or origin, the volume, the number of sacs, the state of the internal surface, and, lastly, the state of the blood that circulates in the cavity.

(1) The diagnosis of the anatomical variety and of the form consists in determining whether the aneurism is a true or a false one, and whether it is a sacculated, a fusiform or a uniform dilatation. Authors, in their books, are not at all at a loss for abundant differential signs, but that abundance itself depreciates their practical value. However, there are the signs; we give them for what they are worth; some of them are very poor, indeed, but we give them still, to enable the reader to judge for himself. As physical signs, by palpation, in true aneurism the beatings are uniform;[1] in false aneurism, the tumor is more circumscribed and inclines more on one side than the other of the sternum, principally the right side, under the third and fourth ribs.[2] By percussion, the dullness is not so extensive in true aneurism as in false, because the latter irritates more the surrounding tissues.[3] By auscultation, in true aneurism there is ordinarily no blowing sound, no thrill, no fullness of one or the other second sound of the heart[4] (though, according to Dr. Hope, the thrill is more observable[5]). The existence or the absence of the second sound is a good distinctive sign between true and false aneurisms, the second sound not existing in the latter variety.[6] In false aneurism there is usually a systolic murmur, accompanied or not by a diastolic one, and often by a thrill; in that case the second sound is seldom heard on the tumor.[7] As for the rational symptoms, or symptons of compression, in true aneurisms, the alteration of position of the lung and heart takes place slowly, gradually, and

1 Dr. Raycharles Golding, *On Physical Diagnosis of Thoracic Aneurism*, in *London Medical Gazette*, February, 1848; or in *Arch. de Méd.*, *4e Série*, Vol. 18, 1848, p. 217.

2 *Idem.*

3 *Idem.*

4 Dr Raycharles Golding, *op. et loc. cit.*, p. 219.

5 See Wood, *op. cit.*, p. 235.

6 Valleix, *op. cit*, p. 206.

7 Dr. Raycharles Golding, *op. et loc. cit.*

determines less disorders;[1] there is no change, or very little, in the characters of the respiration and of the voice, except in accidental compression.[2] The diagnosis of dissecting aneurism, which is a form of false aneurism, cannot be made but from the *ensemble* of the signs above described. The form of the sac is determined from the following signs,[3] all furnished by auscultation: In sacculated aneurism, no abnormal sound whatever, at first, because of the small size of the swelling; and subsequently, because the tumor is filled with coagula, impeding, if not preventing, the transmission of sound. In fusiform aneurism, and in simple but excessive dilatation, the sound is easily recognized throughout its entire progress.

(2) The diagnosis of the precise seat or origin, of the volume, of the number of sacs, may be drawn from the following signs. The precise seat or origin is thus diagnosed: As physical symptoms, if there is an external tumor, the point at which it shows itself will, as we have said, according to Chomel and Delmas, be a good sign; if there is no external tumor, the point where the pulsations and the sounds have their maximum of intensity will have the same value. As for the rational symptoms, or symptoms of compression, they must be taken into great consideration in both of those last cases, but especially if the tumor is internal. When the aneurism arises from the anterior part of the ascending arch, and, more especially, when it is intra-pericardial, the effects of pressure are little obvious; it may attain a very considerable bulk, and, coming forward, project and pulsate between the intercostal spaces, without any very noticeable pressure effects being induced. When the aneurism arises from the posterior wall of the ascending and inferior wall of the transverse arch, severe symptoms are early set up by the compression of the structures lying contiguous to the artery and along the spine.[4] We shall not insist upon this point, as the nature of the phenomena of compression results from the seat. Dr. Joy has suggested that the simultaneous presence of the "resilient pulse" of Dr. Billing, in the upper and lower extremities, or its presence in the latter and its absence in the former, might be an index of the position of the affection, in the one instance near the origin or at the arch of the aorta, and, in the other, at some point of the vessel below the origin of the left subclavian.[5]

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1 Dr. Raycharles Golding, *op. et loc. cit.*

2 *Idem.*

3 See Gross, *op. cit.*, p. 707.

4 Erichsen, *Science and Art of Surgery*, 4th Edit., 1844, p. 616.

5 See Wood, *op. cit.*, p. 234; see also *Tweedie's Syst. of Prat. Med.*

The volume of the sac, if there is an external tumor, may be pretty well ascertained; but if the tumor is still internal, it can only be guessed from the extent of dulness on percussion, and the varieties of phenomena of compression.

The number of tumors cannot be detected by any means, unless they are external. There may be an aneurism of another part of the body, coexisting with the aneurism of the arch, the former only having been detected. It should be a rule for the surgeon who is about to operate for the cure of aneurismal disease in the surgical regions of the body, to examine carefully the heart and aorta; for, by that, he may save himself from regret and mortification. Sir Astley Cooper once lost a patient upon whom he was operating for popliteal aneurism,[1] from the bursting of a small aneurismal tumor of the ascending aorta; the patient died during the operation. Four cases of similar kind are related in Dr. Crisp's table of aneurisms, as occurring either during or after the operation.

(3) The diagnosis of the state of the internal surface of the sac, that is, of the presence or absence of the atheromatous deposits, would be of some importance for the prognosis, as regards the chances or probabilities of rupture; but, unfortunately, we have no sign whatever to detect such state.

(4) The diagnosis of the state of the blood that circulates through the sac, that is, the existence or non-existence of fibrinous clots, is important for similar reasons. If there is an external tumor, the degree of reducibleness, the consistency of the parieties after the reduction, and the rapidity with which the tumor refills when the compression is removed, will give very correct notions. Whether the tumor is external or internal, the intensity of the pulsations and murmurs will permit us to judge within a certain limit, of the thickness of the fibrinous clots that line the interior of the sac.

(d) The diagnosis of the peculiarities of varicose aneurism consists only in determining the variety or precise seat of the communication. We have given at length in the symptomatology, all the signs relative to this point, and therefore shall not repeat them here.

B—The diagnosis of aneurisms of the descending arch presents here for special description only their differential diagnosis, all the other particulars and details given in speaking of aneurisms of the ascending arch being applicable to those of the descending portion.

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1 Dr. Lidell, *op. cit.*, p. 76; or see Dr. Crisp, *op. cit.*, p. 123.

Aneurisms of the descending arch can only be mistaken for the heart thrown in front of the spinal column, the heart bound down with pericardial adhesions, aneurism of the heart, encephaloid of the mediastinum,[1] Pott's disease, when the bodies of the vertebræ are destroyed and are followed by a gibbosity. We have nothing special to say here except about aneurism of the heart. In cases of aneurism of the heart, Dr. C. J. B. Williams (who speaks more from principle than from experience), thinks that the impulse does not follow, but accompanies the first sound of the heart, as heard at the sternum, and that there is unusual pulsation or grating sound to the left of the dorsal spine.

C—The diagnosis of the cause should always be guarded, as the prognosis, it is readily understood, varies with the cause.

D—The diagnosis of the variety and extent of the phenomena of compression is also important for the prognosis.

E—The diagnosis of the state of the heart should always be made.

F—Lastly, the diagnosis of the general health of the patient is so much more important to make, that it is from its results that the immediate prognosis will be made.

4th Stage. The diagnosis of the fourth stage has for its object to determine, as much as possible : A—whether the disease is stationary or has a tendency to termination ; B—whether it is cured or not, and what has been the process of the cure ; C—and lastly, if the disease terminates by death, whether it occurs or occurred (a) by rupture, (b) by incessant progress of the phenomena of compression, (c) by spontaneous syncope and its reasons, (d) or by one or several of the various complications.

Death by rupture, if the rupture is large and death sudden, may be mistaken for rupture of the heart, rupture of the aortic valves, for cardiac concretions, embolism of the pulmonary artery, spontaneous syncope. If the rupture is small and death slow, the real cause of death may be masked by the other causes of phenomena similar to those that follow a small rent ; such are : when rupture takes place in the spinal canal (paraplegia) ; when it occurs in the lung, bronchi, trachea (pulmonary tubercles); when in the œsophagus (cancer of that channel, or of the stomach, or even of the intes-

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1 See Stokes, *op. cit.*, p. 572; or Dr. Carswell in *Dublin Journ. of Med. Sciences*, vol. 21, p. 227 : Researches on Pathology and Diagnosis of Cancer of the Lungs and Mediastinum.

2 Thurnam, on Aneur. of Heart, *op. et loc. cit.*, p. 241.

tine, if the blood, taking its course through the stomach and bowels, is discharged by the rectum, mixed with the ordinary feces and giving them a strong suspicious character.) The extent and the seat of the rupture should be diagnosed, if possible, because their importance is capital for the prognosis. We do not at all insist upon the signs by which all these peculiarities may be diagnosed, as they have already been described in speaking of the symptoms. If we were to look upon the whole of the diagnosis above described, in a philosophical point of view, we should see that it can be divided into a scientifical diagnosis, a prognostical or practical diagnosis, and a therapeutical diagnosis.

A—The scientifical diagnosis is divisible itself into (a) a clinical diagnosis, comprising the differential diagnosis and its divisions, and the consideration of all the symptoms; (b) an anatomical diagnosis, by which we attempt to determine the anatomical conditions of the parts (seat, variety, form, volume, number, etc.); (c) and lastly, a physiological diagnosis, having for its aim to detect the changes that have happened in the functions of the diseased organs (course and rapidity of the current, changes of the blood, etc.)

B—The prognostical or practical diagnosis is not so difficult as the scientifical, which is often an ideal one. It comprises (a) only the differential diagnosis with non-aneurismal tumors and with aneurismal tumors of the neighboring arteries (*i. e.* to determine whether there is or not an aneurismal tumor, and whether that aneurism is or not one of the arch); (b) the probable duration of the disease; (c) the probable course; (d) the probable termination. These are all points that the family or friends of the patient will be anxious to know about, and that the physician should make a point to let them know, if he feels confident enough in his "prognostical diagnosis," in order to cover his responsibility and reputation.

C—The therapeutical diagnosis conists: (1) in determining the indications presented by the patient's state; (2) in choosing the means and remedies proper to fulfill those indications.

PROGNOSIS OF ANEURISM OF THE ARCH.

"Haret lateri lethalis arundo."—(*Virg.*)

Corvisart, speaking of organic diseases of the heart, has inscribed this fatal and sad epitaph at the head of the chapter, so little did he believe that there was a case of disease of the heart that had recovered. It is very much the same with aneurism of the arch, for

the cure, which seems to have been observed, is so rare, that for the physician to say that a person is affected with aneurism of the aorta, is equivalent to pronounce at once a sentence of death. For that very reason, the physician should be careful before pronouncing *pro* or *con* the existence of the aneurism. Should he pronounce lightly, he would, in the first case, throw anxiety and despair into a comparatively sound subject (for they generally know the so frequent fatal termination); in the second case, he would inspire a false security to a being whose life may be put to an end in a few seconds.

Treatment of Aneurism of the Arch.

The treatment of aneurisms of the arch of the aorta varies according to the stage.

1*st Stage.* The treatment of the first or primitive stage is the prophylactic or preventive treatment. If we can prevent the disease from coming on, if we have any remedy to prescribe, any advice to give, now, better than ever, would be the time to do so. Unfortunately we have not the means of preventing the evil, and so much less that, as a rule, we do not diagnose this stage.

2*d Stage.* The treatment of the second stage, or stage of formation, comprises two parts. In the first, we have to relieve the patient of the anxiety and pains under which he is laboring, from the moment the rent of the coat has taken place to the moment all the phenomena are over; we can do so with antispasmodics and derivatives (dry cups, mustard plasters applied to the extremities, etc.) The second part would consist in stopping the rent and the dilatation, if it was possible, but that is beyond our power.

3*d Stage.* As it is almost impossible to prevent the disease from coming on and to stop its progress when it is formed, we almost fatally arrive at the third stage. The treatment of the third stage, or stage of formed or developed aneurism, is divided into three parts. We should first try to cure the patient (curative treatment); if we fail, we should exert ourselves to relieve his sufferings (palliative treatment or treatment of symptoms); if we fail also in that attempt, we should do our best to prevent or check all complications of any sort that should break out and aggravate the state already so impaired of the patient (treatment of complications).

A—The curative treatment presents to study the indications and means to fulfill the indications.

(a) As for the indications, it should always be borne in mind by the physician[1] that the method of cure employed by nature is generally to fill the sac with fibrinous deposits or coagula of blood, and his efforts should be directed to assist in this process. The indications are three in number, but the two first are obvious: one is to lessen the distending force (the heart); the other to sustain or increase the coagulability of blood; the last, to produce contraction in the parietes of the sac.

(b) The means capable of meeting the two first indications[2] are those measures which at once suggest themselves, that are calculated to reduce the heart's action and lessen the volume of the blood. They may be divided into (1) general, internal or medical treatment, *i. e.*, furnished specially by materia medica; (2) local or external treatment, or treatment of the tumor; (3) surgical treatment, or, better, surgical appliances.

(1.) Amongst the general, internal or medical means or treatment, is (c) the treatment of Valsolva and of Albertine,[3] which may be looked upon as a sort of "specific treatment" of aneurisms of the aorta. It presents to study the means employed, the objections to its use, the indications of its use, or cases in which it may be profitable, and the results it gives when employed. It consists in repeated general blood letting, low diet and perfect rest in a horizontal position. Morgagni, (letter 17, art. 30) says that Valsalva, after taking away as much blood as was requisite, made it a custom to diminish the quantity of meat and drink more and more every day, till he came so far as to allow only half a pound of pudding in the morning and in the evening half of that quantity; and nothing else except water, and this also within a certain weight. After he had sufficiently reduced the patient by this treatment, so that he could, by reason of weakness, scarcely raise his head from the bed (in which he lay by Valsalva's order, from the very beginning of the disease), he increased by degrees every day the quantity of aliment, until the necessary strength returned. Hodgson thinks that it should not be continued longer than is necessary to arrest the immediate increase of the tumor, for it might induce other diseases by its continuance. He does say that it is desirable that the bleeding should be carried to such an extent as to produce fainting,

1 Wood, *op. cit.*, p. 242.

2 *Idem.*

3 *Idem*, and Dr. Lidell, *op. cit.*, pp. 78 and 79, all that treatment.

for the blood is so liable, during that state, to accumulate in the aneurismal sac and to form an impediment to the circulation when the action of the heart revives. He has seen fainting, under such circumstances, continue so long as to excite alarm, and Morgagni[1] mentions an instance in which it terminated in death. The bleeding therefore should be small in quantity and frequently repeated, so as to obviate this effect. For the same reason it is desirable that the blood be taken away in a small stream, rather than suddenly and through a large orifice. It probably was with this view that Pelletan[2] merely opened the vein in one of his patients, and did not apply a ligature at the upper part of the limb, so that the blood was allowed to dribble slowly into a napkin.

The objections principally directed against blood-letting or venesection are, in the first place, inordinate depletion does not always produce a reduction of the heart's action; on the contrary, by inducing a state of anæmia, it frequently occasions an irritable condition of the circulation, in which the pulse becomes frequent and jerking, and the heart beats tumultuously, a condition anything but favorable to the cure of aneurisms. In the second place, it impairs the coagulability of the blood, and thus deprives nature of the very instrument upon which she relied for the repair of the injury. Thirdly, it tends to increase that depressed condition of the vital forces, upon which the organic disease of the vessels, so often the first step in the formation of aneurism, probably, at least in some measure, depends. Fourthly, in a feeble constitution, especially when disease of the heart is associated with the aneurism, it would favor the tendency to dropsical effusion, and would greatly increase the danger, already considerable, of fatal syncope. Fifthly, the patient generally will not submit to such a rigid system of self-denial so long continued, which, if attempted, can seldom be carried thoroughly into effect.

The indication for this treatment, especially of the blood-letting, exists when the patient is phletoric, with a strong, full pulse and apparently rich blood; also if the aneurism or other parts become inflamed.

The results of the treatment of Valsalva were reported, at first, to be very favorable, but subsequent experience has not confirmed the

1 Morgagni, Letter XVII, art 32.

2 Pelletan, *Clinique Chirurgicale*, *Tome* 1*er*, *Deuxieme Observation*.

first favorable reports as to the efficacity of this plan, and the probability is that, from the uncertain means of diagnosis at the time employed, cases were occasionally mistaken for aneurism which were of a different nature. Some modern authors, though, think that, the real nature of the disease being known, remedial measures may be successfully employed to possibly effect a permanent cure of the disease. On this point Hodgson uses strong language. "It is," says he, "scarcely necessary to cite authorities, to prove the possibility of arresting the progress of aneurism by a practice suggested by Hippocrates and confirmed by the experience of Valsalva, Albertini, Morgagni, Lancisi, Guattini, Sabatier, Pelletan and Corvisart. Were it rigidly adopted, internal aneurisms would not be regarded as constantly fatal, which opinion has hitherto paralyzed that assistance which art can afford in their treatment." He further states that Pelletan has narrated fourteen cases of aneurisms, every one of which was materially benefited by this practice, and in two of them permanent cures appear to have taken place.

Dr. Joliffe Tufnell's treatment[1] is not so rigorous, and therefore is more practicable. It consists in restricted diet and perfect rest in the horizontal position, for periods varying from eight to thirteen weeks, combined with the employment of such remedies as may be necessary for special ends. The horizontal posture must be strictly and absolutely maintained, in a light and cheerful airy room, into which the sun shines, and from which the patient may be able to have as cheerful a view as possible out of the window. The diet must be confined to three meals, served at regular intervals, and restricted to the following, in kind and amount: breakfast, two ounces of white bread and butter, with two ounces of milk or cocoa; dinner, three ounces of broiled or boiled meat, with three ounces of potatoes or bread and four ounces of water or light red wine; supper, two ounces of bread and butter and two ounces of milk or tea. This diet should make, in the aggregate, ten ounces of solid and eight ounces of fluid food in the twenty-four hours, and no more. The object is to maintain life on as little as possible without inducing restlessness, as results in some irritable constitutions; but if such restlessness should occur, a little more food may now and then be allowed. Anodynes, especially lactucarium, aperients, narcotics, sedatives and tonics, are useful aids in the management of the case.

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1 Dr. Tufnell, in *Med. Report of the Army Med. Department*, 1862, p. 472; or in Aitkin, *op. cit.*, p. 722.

Acetate of lead[1] has been prescribed by many German physicians, but especially by Laennec, who had remarked that patients dying from lead colic presented a notable diminution of the quantity of blood. He said he gave from 15 to 80 *centigrammes* per day. and during months, without determining either colic or any other lead accident, and that it seemed often useful, but was never found to be heroic. Dusol and Legroux report three cases, in which a tumor of the front of the chest, presenting all the characters of aneurism, almost totally disappeared, with all the other symptoms, under the influence of this remedy. They gave first 20 or 25 *centigrammes*, and when the dose had reached 50 *centigrames*, it was not increased.

(t) Diuretics are employed by Hope, with the view of depleting the circulatory system without depriving the blood of its fibrin, as blood-letting does.

(u) Purgatives[2] have also been advised by Hope, for the same purpose. They assist besides in removing the dropsical effusion. Hope advises the use of the neutral salts, of jalap and of citrate of potash, but, above all, of elaterium.

(v) Digitalis[3] is recommended, as repressing the action of the heart without impairing the coagulability of the blood, and as having diuretic properties. It should be given in moderate quantities, long continued, with occasional intermissions, however, to prevent the effects of accumulation.

(w) Veratrum Viride diminishes both the force and the frequency of the heart's action. It appears to exert a much more prompt, certain, reliable and controllable influence over the force of the circulation than digitalis, and therefore will be found more useful than that remedy in the treatment of internal aneurism.[4]

(x) Aconite[5] might also be prescribed, as rendering the circulation slower.

(y) Hydrocianic Acid[6] may be used in reference to its sedative influence, but caution is required in its management.

(z) Ergot[7] would perhaps prove advantageous, as its admitted property is to restrain hæmorrhage and to have an extraordinary

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1 Valleix, *op. cit.*, p. 210.

2 *Idem.*

3 Wood, *op. cit.*, p. 243.

4 Dr. Lidell, *op. cit.*, p. 79; and Professor T. G. Richardson, of the University of Lonisiana [oral communication].

5 Aitken, *op cit.*, p. 730.

6 Wood, *op. cit.*, p. 243.

7 *Idem.*

sedative power on the pulse. To do good, it should be long continued, but with caution as to its effects on the vitality of the extremities.

(2) The local or external treatment, or treatment of the tumor, consists simply in applications, cold or astringent (cold water, ice in bags, cold astringent poultices, acetate of lead, etc.)

(3) The surgical means are of no operative class. They consist simply in establishing a compression on the tumor, as is sometimes done on aneurisms situated on the other parts of the body.

B—The palliative treatment, or treatment of symptoms, is the one that is generally followed, as the results of the curative treatment are so doubtful. It is also divisible into a general, internal or medical treatment, or means more specially furnished by the materia medica; a local or external treatment, or palliative treatment of the tumor; a surgical treatment, or operations which are sometimes performed to relieve some symptom which compromises life; lastly, a hygienic treatment, or rules of hygiene that the patient should observe.

(1) The general, internal or medical treatment comprises all the remedies above described. They often fail to cure, but they often succeed in palliating some of the symptoms depending upon the impediment of the circulation. Antispasmodics, opiates, etc., should also be resorted to, in order to soothe the pains and to procure refreshing sleep. Each particular symptom should be treated by the means usually employed against it.

(2) The local or external treatment, or treatment of tumor, should be fulfilled also by the same means that are put into use in attempting a cure. They generally fail in that aim, but they should be employed perseveringly, as their palliative effects are generally well borne.

(3) Surgical operations are seldom resorted to. Tracheotomy may prolong life in some cases, when stridor exists, if the laryngeal symptoms are the source of immediate danger.[1] However, if the pressure on the trachea is thought to be the cause of the symptoms of asphyxia, the operation of tracheatomy may be performed, provided a catheter should be introduced as far down as possible, so as to go beyond the point of pressure, and thus allow an easier breathing. A remarkable case of this sort, operated upon by Dr. Judd[2], was followed by a notable relief.

1 W. T. Gairdner. See Aitken, *op. cit.*, p. 721.

2 See Dr. W. H. Judd, in *London Lancet*, April, 1844; or *Archives de Médecine*, 4e série, vol. 6, 1844, p. 501; or in Valleix, *op. cit.*, p. 212.

(4) The hygienic treatment or means is general and local. (y) The general hygienic treatment comprises the following means: The regimen, as regards food, should be of a fair and good diet (Graves, Stokes); as regards liquids or drinks, all spirits should be expressly forbidden, unless by special indications. Hope advises us to give as little drink as is compatible with the comfort of the patient. Active exercise should be avoided, and also all that accelerates circulation or brings on disease of the respiratory system. Passive exercise, *i. e.*, in carriage, railroad, etc., might and should be freely used, to sustain the digestion and the general process of secretion and nutrition in a healthful state.

It is noticed that, when the patient walks or stands in an erect position, some of the symptoms increase; it is probable that it results from a destruction of the bodies of the vertebræ, and he should be furnished with crutches. The moral equanimity should be preserved with the utmost care, as few things have more powerful influence in calling the heart into undue and dangerous action than strong moral excitement. The bowels should always be kept open, in order to prevent strong efforts in defecation.

(z) The local hygienic means consists simply in applying over the tumor a protecting apparatus, that should, at the same time, exercise a slight compression.

C—The treatment of complications, or what may be termed such, varies according to the complications. These may be general (anæmia) or local (disease of the heart, inflammation of the sac. Anæmia should be treated by proper regimen, tonics, bitters, exercise, etc.

As regards the disease of the heart, the cases may be divided, according to Stokes,[1] into three classes: first, those in which the action of the heart is undisturbed, and in which there is no physical sign of disease in the valves or cavities of the organ. In these cases any medical interference beyond what is necessary for the relief of the pain is unjustifiable. Secondly, those in which there is an organically diseased heart: it is then proper to moderate the force of the heart by the usual means. Thirdly, those in which the force of the heart is below the healthy standard, without atrophy of the organ (very rare): then should be applied the treatment proper to weakened hearts. The inflammation of the sac, (announced by fever, excessive tenderness, redness, etc.), should be treated (but only

1 Stokes, *op. cit.*, p. 519.

when too intense) by general blood letting, cupping, leeching, and emollient or resolutive applications.

4th Stage. The fourth and last stage, or stage of termination, presents only one mode of termination that requires a prompt, and, it may be said, a special treatment. It is when the tumor ruptures either internally or externally; the extent of the rupture will influence the treatment in the rapidity of its application. The means to oppose to those external or internal hæmorrhages present nothing so special as to justify here their long and so well-known enumeration.

THE END.

ART. II.—CLIMATE AND DISEASES OF CENTRAL TEXAS.

By ROBT. H. CHINN, M. D., Caney, Matagorda Co., Texas.

I HAVE no theory to propose, sustain or annul, no speculations to offer or digest, and no experiments to explain, but a few plain, practical observations in reference to the subject, as they occurred to me in my sphere of medical usefulness. The topography of a country is inseparably connected with the origin of many of its diseases; consequently a description of our soil and its growth, of our climate and its changes, of our diseases and their varieties, and some data of vital statistics, all have a connection with the practical bearing of the subject.

The Colorado and Brazos Rivers arise in the plateau that separates the plains of Texas from the valley of the Mississippi River. They run nearly parallel to each other, their bottom lands being separated by a large prairie; and when within fifty miles of their mouth they approach each other, and their bottoms commingle by a connection with the bottoms of several anomalous streams running between them. Commencing at the east, we have Oyster Creek, the former bed of the Brazos, emptying into Galveston Bay by an artificial canal; the Brazos emptying into the Gulf; the San Bernard, which drains the prairie that separates the two rivers and empties into the Gulf; Cedar Lakes, which form a considerable stream, after heavy rains, of some twenty miles in length, that empties into the Gulf; Caney Brake, the former bed of the Colorado, which empties

into Matagorda Bay. The forest formed by these connected bottoms is forty miles wide and fifty miles long, frequently interspersed by isolated prairies, with a soil of unsurpassed fertility. It has for its principal growths the live oak and several other species of oak, the pecan, elm, ash, box-elder, hackberry, etc., and its undergrowth often forms a jungle so thick that it is impossible to ride through and very difficult to walk through. Large canebrakes are found besides in Oyster and Caney Creeks. The soil is about eighteen feet in depth, and lies on a bed of white sand intimately mixed with water (quicksand), about five feet in depth, connected by a bed of coarse gravel with a foundation of whitish clay. The rivers present the same muddy appearance as the Mississippi, with the same caving of the banks and the same deposits, but having decennial (as in 1823, '33, '43, '53 and '63) instead of annual rises.

The temperature is affected by the winds, rarely exceeding 80° F. in summer and 20° F. in winter. Our south wind is the most grateful and healthy, being a sea breeze from the Gulf. It generally commences at nine o'clock, A. M., and blows a considerable gale until five o'clock, P. M., passing over the prairies until it meets the mountain breezes. Coming directly from the Gulf and cooled and moistened by evaporation, it is always pleasant. The eastern winds, generally mild but always humid, are the certain forerunners of rain and storms. We require more accuracy in our examination of the phenomena of our northern winds. They precede, accompany or succeed storms and rains, or come and remain perfectly dry. Often after a calm, with only a few minutes' notice, they may in a couple of hours cause the thermometer to fall from 90° to 40°, or even lower, and blow a severe gale, the only cold weather we have, which will last from thirty-six hours to several days, and then quietly pass off and leave the air so chilled as to cause frost. Our western winds are usually hot, humid or dry, and the forerunner of calms and storms.

The decennial overflows mark the change of the seasons into decades of wet and dry years, which pass almost imperceptibly into each other. The periods from 1834 to '44 and from '54 to '64 were dry, and the alternated periods from 1844 to '54 and from 1864 up to the present date are rainy. These observations were made by old settlers, and as I removed to this delta in 1848, I can confirm them from that year. During the rainy years the natural drains overflow, and wash into the rivers, gulf and bay, a great deal of

sediment and *débris*. The principal drains are generally wide, shallow sloughs, or reservoirs with sluggish currents, into which the various flats and lagoons deposit their waters. They all run parallel with the larger streams, with which they communicate by bayous. In the summer evaporation occurs rapidly; the earth's surface quickly dries when exposed to the rays of a hot sun, but the humid atmosphere is soon removed by the currents of air. In the alternate dry decades the rains are rare, and the earth's surface opens in cracks, which grow in depth and size until they reach the substrata of quicksand, and an evaporation occurs from the action of the hot air on the moisture of the quicksand. This moistens the earth and amply supports vegetation, as our cotton and corn crops are the heaviest during the dry seasons, especially when planted on a soil which has the greatest number of crevices. We have no accurate knowledge of our dews.

The characteristic symptoms of malarial diseases of the two periods are very well marked, and are certainly influenced by the concomitant causes of miasm; as during the dry decades heat is in excess and moisture deficient, while the opposite prevails during the wet decades. I have observed since 1848 one entire dry decade and parts of two wet decades, from which I have collected the following diversity in the derangements of the various organs:

WET DECADES.	DRY DECADES.
Skin—perspiration free.	Skin—perspiration deficient.
Nervous system slightly disturbed.	Nervous system greatly deranged.
Digestive organs greatly deranged.	Digestive organs slightly affected.
Secretory organs greatly deranged.	Secretory organs deranged, but amenable to the action of medicine.
Typhous state soon supervening.	

"If the atmosphere be hot and dry, and also be in motion, both exhalation and evaporation go on with great rapidity. * * * * On the other hand, in a hot atmosphere saturated with moisture, exhalation continues; the evaporation is almost entirely checked, and the fluid poured out by the exhalant glands accumulates on the skin." (Carpenter, *Prin. of Phys.*, Chap. x., p. 241.)

During the dry period, from 1854 to '64, my *confrères* and myself were often consulted about lunatics, and called upon by our municipal Courts to diagnose cases of reputed lunacy. These were cases taken from every grade of life, without any apparent general predisposing or existing cause. My note-books during that period are filled with accounts of malarial diseases, com-

plicated with some anomalous nervous symptom, and recount some few cases of the supervention of apoplexy, epilepsy, catalepsy, chorea and tetanus on the ordinary remittent and intermittent fevers of the country. During this period there was no very great derangement of the liver, kidneys or spleen. A single mercurial, an antiperiodic, and a free use of anodynes and antispasmodics, were required. During the rainy years (from 1848 to '54 and from 1864 up to the present) I have been compelled to use mercurials freely, and at once "touch the gums;" together with a very free exhibition of quinine, as those malarial attacks, contrary to their usual way, may at any time become pernicious.

This forest lies at the junction of Brazoria, Matagorda, Wharton and Fort Bend counties; consequently no census reports can apply accurately to divisions of counties or districts, as they include each county or district as a unity. Therefore for vital statistics I am left to my own resources, which cannot be accurate, as I have not pursued the matter for pleasure or profit; but my long residence and large acquaintance are a sufficient guarantee that they are not very deficient. It contains about one thousand voters, and five inhabitants to each would give it five thousand inhabitants. There are thirty between seventy and one hundred years; seventy-five between sixty and seventy years; seven hundred and fifty between forty and fifty years, and the rest between twenty and forty years. These can only be proximate results. In *personnel* at least one hundred and fifty would weigh over two hundred pounds, and the same number could be found whose height was above six feet, all being generally above the average. On the gulf and bay shores, there are generally about two deaths out of one hundred inhabitants annually; but the mortality is much greater as you pass into the interior, being at the upper boundary of the forest, between the two rivers, four and a half to six in the one hundred *per annum*. The richness of its soil and geniality of the climate attracted the first settlers of the colony, and the land has ever since been owned by them and their descendants, with but few rare exceptions, and held at a high price. It has therefore received but few emigrants, still this immigration never materially increased the mortality. The diseases are generally miasmatic, mild and peculiarly amenable to the action of medicine, and the pernicious and congestive types are rarely seen. Organic diseases of the liver, spleen, pancreas and kidneys are rare, except when the subjects of them are dissipated. The epidemics of the

exanthematous fevers, pertussis and bronchitis are as usual in other localities. I have seen but very few uncomplicated cases of pneumonia, but more where inflammation of the lungs formed a prominent symptom in other diseases. Chronic and acute diseases of the digestive organs are common, and we have had the usual epidemics of dysentery. In 1833, the Asiatic cholera ravaged the village of Brazoria, and afterwards made its appearance once on a plantation, but did not spread. In 1862, Matagorda village was scourged by yellow fever, but entirely from local causes.

An alluvial soil, excessive vegetation, heat and moisture are the causes, and, when in excess, the antidotes of miasm. The opening of new plantations increases the number of malarial diseases, even to the surrounding homesteads, where the miasm may be removed by the continual breezes. Dr. Wood, in his *Practice of Medicine*, vol. i, p. 144, asserts the probabilty of the incompatability of fire and miasm, and as, in the opening of all plantations, the vegetable matter is usually destroyed by fire, before decomposition can possibly commence, and the exposure of the under virgin soil by ploughing will produce miasm, it is more than probable that it is eliminated by the primary cultivation of the soil. The old plantations and old homesteads, especially when surrounded by trees and shrubbery, may owe a considerable portion of their freedom from miasmatic attacks to the consumption of miasm by the vegetation. (*Vide* Wood, *Pract. of Med.*, vol. i., p. 143.) "Water appears to have the property of dissolving and retaining them (miasmata), whether in a proper liquid state, or in that semi-liquid form in which it constitutes fogs and mists." (*Vide supra*, Wood, p. 141.) The use of the water, whether from off or from under the surface of the soil, will certainly produce malarial diseases; and if continued, as is shown in our ruminantia, will eventually disorganize the liver and spleen; so we are confined to the use solely of rain water. Our principal drains are wide and shallow, exposing a large surface to the action of the air, and the currents of all the streams are sluggish, never having waterfalls and sprays, which have a tendency to purify the water and set the miasm free in the atmosphere. (*Wood's Pract., vide supra*, p. 142.) In our very wet seasons the proportion of moisture for the elimination of miasm is lost, as "excess of moisture checks its development" (*Williams' Prin. of Med.*, by Clymer, p. 62); and, on the contrary, "a very dry season which desiccates a marsh, stops the malaria" (Williams, *v. s.*, p. 61); so, either moisture or dryness in

excess act simply as a miasmatic preventive. Early in the morning, before the southern breeze commences, we have our highest temperature; and as the day progresses, the air becomes cooler, and our nights are very cool. By exposing a bright polished surface to the action of the southern wind, it becomes clouded; then upon drying it, there are deposited on it small particles of sea-salt. Our eastern winds are always the forerunners of rain and storms; our northern winds are always cold, and sometimes perfectly dry; our western winds are short in duration, and may be the forerunners of storms; so that the drying process may be attributed to the two general causes—the rays of the sun and the passage over it of a rapid, cold, dry wind—the one the cause, the other the destroyer of miasm. Our temperature, moderated by the action of our southern breezes, seldom exceeds 80° Fahr., and Dr. McCormack says, "If the temperature proves habitually below 50°, whatever be the exuberance of vegetation or the quantity of marsh lands, malaria is never generated. (*Vide supra* La Roche, p. 199.) During those periods (the "dry decades") when we have no dews, and rarely a rain, with some moisture from a subsoil evaporation, the drying process is complete, and the humidity of our sea-breezes softens the parched atmosphere and adds to the growth of vegetation. During the other periods (the "wet decades"), when the surface of the soil is moistened by having rains and dews, and partially dried by the action of the sun, the digestive and glandular systems are usually most affected. But during the first named periods (the "dry decades"), when the soil is pierced to its foundation by crevices, and by that process an immense surface is presented to the action of the air, and an exhalation of almost imperceptible mist arises by evaporation from a semi-fluid mass (quicksand), the nervous system is most seriously affected, showing the influence of miasm from decomposing vegetable matter on the surface of the earth, and the effect of miasm from decomposed vegetable and other matter below the surface of the earth. But all this is not fully determined, as the preventives and removers of miasm exist contemporaneously with its elimination, and render the cases too mild and few to establish such an hypothesis.

The Cordillera from the Rocky Mountains that divides the plains of Texas from the valley of the Mississippi, is the source of our principal rivers, and the Gulf of Mexico, with its inland bays, is the receptacle of our water-courses. From the principal and opposite

standpoints of health, they communicate with each other in direct parallel lines, by the rivers, forest and prairies. From these two sources issue continual and rapid currents of air, which coöperate in freeing the atmosphere from all impurities, until they meet and become inert. Drs. Williams (*vide supra*, p. 61), Wood (*vide supra*, p. 142,) and La Roche (*vide supra*, p. 194) coincide in the principle that malaria is carried off by strong currents of air, and to what an extent dispersion may occur is somewhat doubtful. Late in the spring, during the summer and early in the autumn, a northern wind is attended with physical and mental depression and, should it continue, with many attacks of malarial diseases, collecting their causes in its journey from the mountains over the bottoms and prairies. So with the southern wind. Leaving the shores of the gulf and bays, collecting and dispersing to some extent all atmospheric impurities, its advance into the interior is marked with the increase of malarial attacks and their effects in a progressive ratio, until it declines from inertia caused by an opposing wind. The opposing wind, or mountain breeze, pursues the same course with the same effects, and where they meet is the mesial line of disease. Observation has proved the correctness of the action of these winds, for the effects of malaria are very plain, where both are declining in their force, and increasing in a progressive ratio up to a point where neither exists. Dr. La Roche (*vide supra*, p. 194) says that "free ventilation and strong unimpeded currents of wind are inimical to the generation of malarial exhalations." The continual breezes passing over the prairies render them healthier than the confined places in the bottoms, and malaria must exist where there is no check to the winds; this becomes another abetting cause for a mesial line of disease. A coincidence in this matter exists in what is called the Cross Timbers, a forest belt of several miles in width, running directly across the prairies and communicating freely with the bottom lands of the various rivers. In this forest exist all the concomitants of malaria, and at the same time but few mild malarial dieases, which rarely leave their effects. General S. F. Austin commenced its settlement in 1818, and there remain some of the first settlers. Their descendants of the second generation have, in many instances, passed the age of forty years, and still are not declining in mental or physical abilities; and the third generation is rapidly coming on, who bid fair to become equal to their grand-parents in mental and physical abilities.

Dr. Brown, in the *Cylop. of Pract. Med.*, vol. 3, p. 178, thus describes the natives of malarious districts: "Their aspect is sallow and prematurely senile, so that children are often wrinkled, their muscles flaccid, the hair lank and frequently pale, the abdomen tumid, the stature stunted, and the intellectual and moral faculties degraded." A stock-raiser, with his mustang, his lariat, double-bellied gourd of rain water, tin cup, sack of provisions and blanket, perfectly regardless of where he eats or sleeps, by day or night, in wind or rain, calm or storm, sunshine or shade, rapidly caroling over the prairies, or piercing the bottom jungles after cattle, successfully defies disease. A good many men have pursued this life over twenty years, and are now our most healthy and vigorous citizens. In examining fully the subject of miasma, we find that heat in excess will destroy it, water absorb it, vegetation consume it, and rapid currents of air carry it off and no doubt disperse it; and that excess of heat, moisture, dryness, commotion of the atmosphere, and a certain temperature will prevent its elimination. My observations have satisfied me that all these exist here, that malaria is present in our atmosphere, that by these concomitant forces it is rapidly removed, prevented from being eliminated in excess, and that it is neutralized by some inherent unappreciable cause; that there is some belt in the State where it becomes more concentrated, where its effects are seen, felt and known by any one passing there or near it, and that this belt is formed from the want of a commotion of the atmosphere; that both the mountain ranges and the gulf coast are as healthy as any other known places; that the breezes from these two points continually purify the atmosphere, and that these long dry and long wet spells of weather by their own excess annul many causes of disease.

Art. III.—MODUS OPERANDI AND THERAPEUTIC USES OF QUININE: By Jno. Steinback Wilson, M. D. of Bedi, Grimes Co., Texas.

[Written for the Association of Army and Navy Surgeons, while on duty in Richmond, Va.]

THE prevailing, I might say, the almost exclusive idea, among medical practitioners, appears to be, that quinine is a tonic and anti-periodic alone. That it possesses both these properties, I do not doubt. But the extensive use of this drug, for many years,

in a great variety of affections, convinces me that its tonic and anti-periodic effects are really, in a great degree, secondary and subsidiary; and that we are far from giving it its true therapeutic value, when we restrict its administration to cases of debility, well marked periodicity, or of real or presumed malarial origin.

To what, let us inquire, is the anti-periodic action of quinine due? Is it to some incomprehensible, unexplained and inexplicable power that it possesses over the diurnal revolutions of the system? Is periodicity either a cause or effect of disease? Is it a pathological element—an entity to be combatted by material agents? Is it not rather an epiphenomenon, so far as the disease itself is concerned—a mere continued action of a law of the economy which is not abrogated or held in abeyance by the morbid condition, but, preserving its sway in spite of this condition, modifies the course of the disease and causes these periodical revolutions—these alternate remissions and exacerbations, so well marked in malarial fevers, but which may be distinguished in a less degree and with less regularity in almost every variety of disease? This appears to be the most philosophical view of the subject—the one most consonant with known facts and daily observations, and one certainly sustained by my experience, which is made the basis of the theory, instead of building a practice or experience on a preconceived hypothesis.

Periodicity, then, is not an essential element of disease, nor is it even a pathological condition; but a normal physiological manifestation, continuing to a greater or less extent in almost every form of disease, and by no means confined to the so-called periodical or malarial fevers, or other affections attributed to marsh exhalations. Now the practical conclusion from these premises is too obvious to detain us. Suffice it to say then, that, while periodicity is not to be disregarded as a modifying influence in disease, but is to be taken advantage of in the treatment, yet our remedies should not be directed against it, but against the morbid condition of the inflammation, the congestion, the lost balance of the nervous and vascular systems

Almost every form of disease is marked either primarily or secondarily—in its inception or progress—by this loss of balance in the nervous or vascular system, and often in both. Experience teaches me that quinine is the great equalizer of the circulation—most potent of all remedies for restoring the nervous and vascular equilibrium, and consequently for relieving inflammation or conges-

tion, from whatever remote or exciting cause—whether periodical or non-periodical in type—whether malarial or non-malarial in origin. In my view then, quinine is indicated in all these cases where there is a preternatural determination of blood to a part, with corresponding deficiency in other parts—where, in short, the very rare condition of universal hyperæmia does not exist, but the far more common one, a want of proper distribution of the circulating fluid; or, as it may be more tersely expressed, a lost balance of circulation. I have accordingly given quinine for its tonic and equalizing effects in asthenic bronchitis and pneumonia; in cerebral and uterine inflammations and congestions; in diarrhœa, dysentery and cholera infantum; in the suffocating stages of croup and catarrh; and, indeed, in every variety of disease attended with contracted pulse, coldness of the extremities, and other evidences of want of proper diffusion of the circulating fluid. And this has been done in cases where I had no reason whatever to attribute the affections to malaria, and where periodicity was not sufficiently well marked to attract special attention. I am now treating a case of double bronchopneumonia, supervening on measles, involving both lungs throughout the greater part of their extent, and attended, of course, with great dyspnœa and a weak compressible pulse. In this case I have no reason to suspect anything like a malarial origin, though there are well marked morning remissions and evening exacerbations. The treatment consists mainly in five grain doses of quinine, in combination with two grains of calomel, every three hours. The calomel is given to defibrinize the blood, and the quinine to equalize the circulation and relieve the pulmonary hyperæmia; but without any regard to the periodicity. The case, from the extent of disease, is very unpromising, but I know of no treatment more hopeful, whether viewed in the light of theory or experience.

I have already mentioned the use of quinine in diarrhœa, and will only add further, that I have never seen the irritant effect on the intestine canal attributed to it by many writers. In hæmaturia and intestinal hæmorrhage, I have used it with the most happy results. Yet it is but just to add, that these were undoubted cases of congestive fever. In traumatic hæmorrhages, I have never had occasion to resort to it. Still I am not one of those to whom "the suggestion of quinine, as one of the *adjuncts* in the treatment of hæmorrhage, will appear a most extraordinary proposition." This is the language of the writer of the able article on the "Arteries,'

in the "Manual of Military Surgery," recently published by order of the Surgeon General. But while I agree with the writer, as to the propriety of the remedy, I cannot adopt fully his explanation as to its mode of action. For he goes on to say: "The febrile excitement which attends upon the early stages of a gun-shot wound is generally of the paroxysmal form, and it is during these paroxysms of arterial agitation that the bleeding is most apt to take place." To all this there is not a word of objection. But then we have this concluding paragraph, of which the same cannot be said: "In the cases above described, the use of quinine in *anti-periodic doses*, during the intermissions, is a valuable adjunct to mere specific treatment." (*Op. cit.*, p. 99.) It is with much pleasure that I find my views as to the extensive prevalence of the law of periodicity, from so able and, doubtless, experienced a writer as the one just quoted. For, if the feature of periodicity marks even a traumatic injury which is strictly local in its nature and origin, is it not still more likely to attend idiopathic and constitutional affections?

But to return to the explanation of the *modus operandi* of quinine in hæmorrhage. Here the writer seems to be striking at that same vague, indefinable something called a paroxysm, or periodicity. With due deference, I must say that the quinine should not be given as an "*anti-periodic*," but as an equalizer of the circulation, in order to divert the current of blood from the wound which has become the centre of irritation and afflux. But after all, our writer may have reference more to the size of the *dose*, and the *time* of administering the quinine, than to its anti-periodic *action*. This I think highly probable, and when the practice is so good, we will not cavil about the theory. Still our practice is more likely to be consistent, and I may add *persistent*, when it is directed against a tangible reality—a well-known and easily-recognized physical condition, rather than an intangible nonentity which may not be recognized.

The use of quinine in hæmorrhage being admitted, then, as correct, it may, at first sight, appear paradoxical to assert that it is equally, if not more strongly, indicated in some cases of suppresed discharges, and especially in promoting the menstrual flow. But this is nevertheless true, as I think I could show several striking and, to me, conclusive cases, did the limits of this article admit of their introduction. Several years since, I called attention, through the pages of the *Southern Medical and Surgical Journal*, to the remarkably prompt emmenagogue action of quinine. I adduced cases

in which this remedy was used in various diseases, without any view to its action on the uterus, in which the lochial discharge was reproduced a number of days after it had ceased to flow by natural limitation. I also referred to cases where a sanguineous discharge occurred from the uterus, on the administration of quinine, *out of the regular time for menstruation.* Now how can this be explained? Shall we attribute the uterine flow to the tonic action of the remedy? This could not be; for the action of tonics is slow, and the effects mentioned supervened after the first few doses of the medicine. As to the anti-periodic action, it is needless to say a word, for certainly there was nothing of this kind. How, then, did the quinine excite the uterine flow? To me the explanation does not appear difficult. It is to be found in that same wonderful equalizing action on which I have before insisted. Some of the organs had become a centre of afflux—were the seat of congestion—while other parts, the uterus included, were deprived of their proper quota of blood. The quinine relieved this congestion—diffused the circulation into all parts; and the uterus, happening to be prone to action from recent delivery or menstruation, or from the approach of the menstrual period, the flow was reproduced or precipitated, giving rise to the lochia in the one case, and to menstruation in the other. This explanation is not at all incompatible with that in hœmorrhages.

In traumatic hæmorrhage, the wounded organ or extremity, as the case may be, inflames, becomes the centre of afflux and active hyperæmia; while other parts do not receive their normal supply of blood. Quinine is given, the equilibrium of the circulation is restored, and the hæmorrhage is abated, or arrested, if the bleeding vessels be not too large. On the other hand, where sanguineous discharges are promoted, there is preëxisting congestion of some organ or system of organs. Quinine is administered, the congestion is removed, the blood is sent bounding into its partially deserted channels, and hæmorrhage occurs from any part predisposed. But whatever may be the explanation of the emmenagogue action of quinine, it is gratifying to me to state that the fact of its possessing such action has been sustained by the published evidence of some of the most experienced physicians in the Confederacy. I may be excused for adding also that, so far as I know, I was the first to call attention to the interesting fact that quinine has a speedy and decided action on the uterus, which cannot be due to its effects either as a tonic or anti-periodic.

A few words in conclusion on the action of quinine in tetanus—a subject which has recently engaged so much attention in the Association of Army and Navy Surgeons. In my view, quinine is not only an equalizer of the vascular, but also of the nervous fluid. Indeed, it appears to me to be plain that the primary impression must be made on the nervous system, and that, through this, the vascular system must be impressed. If this be correct, it is not unreasonable to regard quinine as one of the most promising remedies in the hopeless disorder under consideration. For however obscure may be the pathology of tetanus, this much, I think, may be safely assumed: (1) That there is a lost balance of the nervous influence; that this instead of being equably and healthily diffused to all parts, is thrown into whirling eddies of morbid excitement, which is concentrated on some portion of the spinal centre, and thence reflected by the efferent motor nerves on some muscle or set of muscles, throwing them into a state of tonic contraction. (2) This state of the nervous system may or may not be attended with something like a corresponding loss of balance in the vascular system. But whether the vascular derangement be present or not, the nervous is certainly never absent. (3) That the exhausting effects of the malady are very great; and therefore that a tonic and supporting treatment is always indicated.

Now, these positions being admitted, it would seem that quinine is as promising as any other remedy, if not more so; for we know of no drug which combines such tonic and equalizing powers, and none more likely to fulfill the indications of restoring the lost nervous equilibrium, increasing the strength and sustaining nutrition, till the terrible commotion be overpast.

It will be remembered that Prof. Campbell reported to the Association a very interesting case of tetanus, in which large doses of quinine were given with success. This case sustains the views advocated in this article, so far as a single case can do so, and it is to be hoped that the remedy will have a more extended and thorough trial. Finally, let me add, that this brief glance at the mode of action and therapeutic uses of quinine will serve to give some idea of the extent of its remedial application; while, at the same time, it may subserve the purpose of relieving practitioners in southern latitudes, who have learned something of its wonderful virtues, from the charge of *hobbyism* and *one-ideaism*.

Art. IV.—TRANSVERSE FRACTURE OF THE PATELLA BY DIRECT VIOLENCE : By W. B. Dobson, M. D., New Orleans.

THE subject of the following report was of medium size, temperate habits and about thirty-six years of age ; and while riding in a buggy, on a smooth level road in Texas, his horse became restive and kicked violently, inflicting a severe blow upon the knee, causing a fracture of the patella about the centre. Favored, no doubt, by the position of the limb, it being semi-flexed, the extensor muscles violently contracted, fixing the patella upon a firm bony basis.

The immediate result to the patient was, of course, such as follow all these accidents, and need not be described here. The application of bandages, straps, etc., described in the books and familiar to every practitioner of medicine, had been resorted to, but without special benefit. About the middle of November, 1861, four months after the receipt of the injury, when Mr. B. applied for treatment, there was little or no ligamentous connection of the bone, the fragments being separated upwards of an inch. There was no undue degree of inflammation or tenderness, but excessive lateral motion of the patella and atrophy of the limb were observed. The utmost force that could be applied by the hands failed to approximate the separated fragments of bone nearer than within half an inch ; but, with the appliance to be described, they were brought together and the desired position readily maintained.

To approximate and retain in position the separated fragments of the patella, a piece of binder's board, two inches in length and sufficiently wide to incase the limb to about one-half its circumference, was procured, rendered plastic by dipping in water and applied to my own leg, extended, and there secured by a roller, until sufficiently dry to retain a perfect outline of the limb. Two collars or bands were applied about three inches wide, made of firm fine-grained harness or sole leather, of sufficient length to encircle the limb and pasteboard splint and lap about one-third, with two straps and buckles on each, placed upon the inside for convenience; also five other straps and buckles, two on the outer and two on the inner side, the fifth and middle one passing directly over the centre of the patella, the buckles being attached to the lower band. The edge of each band was scalloped where it infringed upon the patella. The

splint was lined or padded with soft material, applied to the posterior part of the limb and secured by a suitable roller. The bands having been moistened and adapted, were applied above and below the knee, with padding of lint beneath and secured by the lateral buckles. The coäptation of the two portions of the patella was accomplished by the longitudinal straps, the anterior or middle one passing directly over the centre of the fractured bone, preventing the projection of either portion, and most effectually securing them in their position.

The apparatus thus arranged was applied in my office, from which the patient immediately walked to the St. Charles Hotel, and daily thereafter attended his business, with comparatively very little inconvenience, more than to remove it at certain intervals and bathing the limb with dilute whisky or vinegar and water.

The above report was transcribed from my note-book nearly a year ago, but was delayed to obtain special information whether the union of the fragments was osseous or ligamentous, and the length of time to effect the union. The information desired has not been communicated, and the report is consequently submitted with this imperfection.

ART. V.—A NEW ANTHELMINTIC:

BY THOS. E. BROADDUS, M. D., St. Charles, La.

IN 1861, Mr. L., a gentleman of robust frame and remarkable muscular development, became subject to frequent attacks of gastro-intestinal irritation, and I was repeatedly called upon to prescribe for him. My usual prescription was mercury, in some form or other, combined with a sedative. This treatment invariably relieved his most urgent symptoms; but he was rarely willing to admit that he felt perfectly well.

On one occasion, when he was more than usually afflicted—complaining of considerable pain in the umbilical region, with frequent ineffectual efforts at evacuation—I requested him to take fifteen grains of blue mass, to be followed, in a few hours, by an ounce of castor oil. Upon visiting him the following day, I saw, from the expression of his countenance, that something unusual had occurred

and that it had not been of an unpleasant character. With the first dejection, after taking the oil, he had passed more worms (lumbricoides) than I have ever known to issue from another patient, and declared himself "a new man."

Being somewhat astonished at this more than usual vermifuge effect of my remedy (especially as my diagnosis had not included the existence of worms), I inquired if he had taken anything besides what I had recommended. He assured me that he had followed my directions to the letter, and that he had even "swallowed the blue mass in lumps"—he had not been able, with all the flour he could add, to make it into pills. Upon examining his pot of "blue mass," I discovered that it was *mercurial ointment*, which fully explained the difficulty he had encountered in making the pills.

A few months after the case alluded to above, I was called to see a negro woman, about fifty years of age, belonging to Mr. P. M., of this parish. From all appearance, her disease was intermittent fever, without any complication that I could discover. As the treatment of the case had been perfectly orthodox, I was surprised to learn that its frequent repetition had not been able to carry her beyond the relapsing period; and as the buccal secretions were viscid, and the tongue presented the same *puncta* we so often see in wormy children, I thought it would not be amiss to administer a vermifuge. Fifteen grains of the ung. hydrarg., followed by an ounce of castor oil, brought away a large number of worms; and, without any more quinine, her tertian disappeared.

With these two cases as a basis for experimentation, it is not surprising that I should have been tempted to use this remedy when, doubtless, our ordinary anthelmintics would have answered every purpose. Satisfied as I now am, that its antagonism to verminous life is as great *within* the body as upon its surface, I reserve its use for cases which rebel against common modes of treatment. The immediate object, however, of what I have written, is to doubly call attention to the following case:

Mrs. ——, wife of a wealthy planter, had, at different times, discharged several pieces of tape-worm, but had not been fortunate enough to expel the head. Having failed to obtain lasting relief, she remained for several months without treatment. In the autumn of 1864, as she was suffering greatly, I advised her to resort to a new remedy. The treatment was as follows: From breakfast until 8 P. M., she took absolutely nothing into the stomach—neither liquid

nor solid. At this latter hour, she drank a cup of sweetened milk. An hour after the milk, she took twenty grains of ung. hydrarg. made into an emulsion. Early on the following morning she had a draught composed of an ounce of castor oil and a drachm of spts. of turpentine. A few hours after the draught, she had a copious and very bilious evacuation; and, with it, discharged some ten or twelve feet of tape-worm—the head being this time expelled. Her health has been invariably good since that event.

PROGRESS OF MEDICINE.

Operatic Surgery—Surgical Pathology.

ART. I.—*On Contraction of the Anus, and Forcible Dilatation:* By Professor ROSSANDER.

IT is well known that the first description of the contracted or fissured anus was given by Boyer, who also devised an effectual plan of treatment. Subsequent writers have studied the ætiology and the nature of the malady, and have sought for a milder method of cure. For this purpose it has been essential to determine what was the first step in the disorder, whether the contraction was the cause of the fissure, or the result of reflex irritation proceeding from it. In other words, to which of the principal features of the disease the surgeon should direct his attention.

Prof. Rossander states that, according to his experience, the malady is more frequent than is commonly supposed; and that it is not seldom the cause of symptons that are attributed to other conditions. During the decade of 1853–63, fifty patients suffering from it came for operation into Hospital, under the care of the author and his colleague, Prof. Santesson; and in private practice, the author saw eight cases in 1864. Of the hospital patients twenty-four were males, and twenty-six females; but the statement of most writers that females greatly preponderate (among 150 cases, treated by Maisonneuve, 120 were in women) agrees with the author's experience in private practice. Of the last eleven cases treated by him, nine were in women. Most of the patients were between twenty and forty years old; but in private practice the author operated upon a woman sixty-five years old; and, in hospital, upon a child of four years. That the malady may occur in young children, and may even be congenital, had already been shown by Boyer; and Prof. Abelin has found fissured anus with contraction without fissure, in sucking infants as well as in older children.

The causes of the disease are not easily determined, although most authors are agreed that it commonly attacks persons who are habit-

ually constipated. Rossander thinks this statement goes too far, and confounds an effect with the cause. The disease infallibly produces constipation; and, when the patient has thus suffered for several years, he is often unable to say positively what was the earliest symptom. It cannot be denied, however, that difficult defæcation may produce fissure in various ways; among others, by laceration of the mucous membrane by scybalæ. But this occurs less frequently than those assume who regard the fissure as the first and essential phenomenon of the disease; since very large and hard fæcal masses will pass, without doing the smallest injury, through an anus that is not morbidly contracted; and of all the patients seen by the author, only one declared that the pain had commenced suddenly. When, however, contraction of the sphincter is already present, the formation of fissures by hard fæces may happen very easily. Habitual constipation may also occasion the disease indirectly, by its influence upon the portal circulation, giving rise to hæmorrhoids and varicose vessels in the neighborhood of the sphincter, and thus causing irritation which may excite in that muscle a similar reflected contraction or spasm. All circumstances, indeed, that tend to congestion of the anal or perineal region, are liable to occasion contraction. Hence the disease often commences in the later periods of pregnancy. Tumors of other kinds in the abdomen or pelvis, and any sources of irritation about the genito-urinary organs, may act in a similar manner. Lastly, contraction may be excited by injuries and other local causes, among which may be reckoned anal ulcers, whether they be fissures or not.

The subjective symptoms depend chiefly on the pain in defæcation; pain that is at first inconsiderable and transitory, but that becomes more severe and of longer duration. Those who maintain that the whole disorder is dependent upon an anal fissure, describe as the first symptom a penetrating and burning sensation in a limited and determinate part of the anal circle, but this has never been observed by the author. Purgatives are commonly much used by the patients, either to soften the evacuations, or because without them there would be no evacuations at all. At first they diminish the pain, but not subsequently, and a loose motion becomes as tormenting as a hard one. If the disease be complicated by internal piles, these will be forced out during evacuation, and then constricted by the sphincter; and their return, always painful, will at last become scarcely possible. In such cases there is often considerable bleeding during evacuation; but otherwise the stools are usually less bloody than they have been described. The pain radiates in various directions; but the genito-urinary system is usually the first to share in it. There is often spasm of the bladder with frequent and painful micturition; and these symptoms may be sufficiently severe to divert the attention of both surgeon and patient from the original malady. Coitus may also become painful, especially to women, and so also may menstruation. Rossander found contraction of the anus in a young lady who consulted him on account of cramp in the calves of her legs; she refused to submit to operation, so that he could not determine that the contraction was the cause of the cramp. Lastly, many of the so-called nervous diseases, such as hypochondria, hysteria, cardialgia, and others, are found among the conse-

quences of contraction; while the author has never seen them associated with fistula.

Among the objective symptoms the contraction of the anus is the most constant. Even from outside, the sphincter may be felt as a hard ring, and the finger introduced into the bowel is met by considerable resistance, and occasions the patient the most acute pain. The breadth of the hard circle by which the finger is constricted is often only a few lines, but it is sometimes much more.

Occasionally two rings are felt, one above another. The author has not observed the general flattening of the whole anal region that has been described by others, but, on the contrary, has found it strongly wrinkled, so that the folds of skin and venous membrane were deeper than usual. There will often be one or more ulcers, commonly elongated in shape. The edges of these ulcers are hard, their surfaces velvety, but only visible at the lower part. The ulcers may be more or less deep, are often situated posteriorly, not exactly in the middle line; and when the folds in which they are situated are stretched out, are found to possess an oval form. Sometimes the fissure is first discovered when the patient presses forward the folds of the mucous membrane by straining. Sometimes the most careful examination discovers no fissure, or only an excoriation of some folds of skin. Such excoriations are produced in the more or less wrinkled and inflamed mucuos membrane by small portions of excrement, left unremoved by the patient on account of the sensitiveness of the part.

It is impossible, according to Rossander, to consider these small excoriations, present one day and healed the next, as the source and origin of the disease. The essential morbid phenomenon is spasm of the sphincter, one of the causes of which, perhaps even the most common cause, may be fissure; but still fissure alone does not constitute the disease. There are many instances of anal ulcer (*e. g.*, syphilitic ulcers) in which there is no pain on evacuation. It is necessary to cure the spasms; and it is a matter of indifference whether a fissure coexist or not. This opinion is best confirmed by the results of treatment, which furnish the strongest argument in favor of Boyer's views. The author states that when he is consulted by a patient who complains of the characteristic pain, and in whom the sphincter is strongly drawn together, he does not endeavor to ascertain whether a fissure exists; since the examination would only give the patient unnecessary pain The use of a speculum is for the same reasons objectionable. The finger should be introduced in order to determine the existence of contraction, its extent, the state of the intestine and mucous membrane above the sphincter, and to discover the evidence of any tumor that might require removal. It should not be moved to and fro, in order to ascertain whether any one point of the anal circle was especially painful. Although the diagnosis is generally easy, on account of the remarkable character of the symptoms, yet the author is of opinion that these symptoms are very often overlooked. It is common to meet with patients who have believed their sufferings to be due to piles, and who, in that belief, have employed a variety of remedies without consulting a surgeon; or who, especially women, have refused to submit to any proper examination.

To confound this disease with others would not be easy. The subjective symptoms of cancer of the rectum resemble it in some degree; but with ordinary attention the two can readily be distinguished Hæmorrhoidal tumors may simulate contraction; but the two conditions frequently coexist, and in special cases there could be no difficulty in determining whether the latter was present or not.

The prognosis, if the disease be left to itself, is always unfavorable. The author thinks it possible that actual contraction may disappear after the removal of its exciting cause; but such cases would be difficult to recognize. When the disease is treated, the prognosis is especially favorable, there being few surgical operations so certainly curative and attended with so little danger as those for anal contraction, especially forced dilatation. Although some surgeons profess to effect a cure by various ointments, local applications, and laxatives, yet the treatment is essentially operative. The author does not advise immediate operation in every case, and thinks that, when contraction is excited by a recent fissure, other means, especially cauterization with nitrate of silver, may be of service. With regard to the ointments, he thinks that their liberal application and introduction within the sphincter may produce some degree of dilatation.

Among operative procedures that by incision is the oldest and best established, and Boyer believed that by this means he had radically cured all his cases. The author has never himself employed the large and deep incision recommended by Boyer, but he holds that Boyer's statements are worthy of all credit. Many other surgeons have failed to obtain good results by incision; and it is possible that their incisions may not have been deep enough to relieve the spasm. Some have observed evil results from the incision, whence Vidal, Dupuytren, Guérin, and others, have modified Boyer's operation in various ways. The author describes several of these modifications; and among all of them, gives the preference to Blandin's suggestion of a subcutaneous section. This is, however, difficult of accomplishment, and has been little practiced, since the same end may be attained more easily by the method of *forcible dilatation.* Soon after Boyer's discovery of the nature of the disease, it was suggested that dilatation might afford a remedy. Dubois, Marjolin and others sought to attain this end by a succession of tents, lubricated with anodyne ointments. Velpeau advised that the first dilatation should be complete, without regard to pain. For this purpose the author recommends the procedure of Maisonneuve, known as "forcible dilatation." On the day before the operation the patient should take a purgative of castor-oil, and on the morning of the operation an enema, so that the bowels may be undisturbed for a period of from twenty-four to forty-eight hours. The patient is placed upon his side and chloroformed, both to diminish pain and facilitate dilatation. Many patients, however, and especially ladies, have refused chloroform, because they feared it more than the pain, and because they objected to the presence of a second surgeon. The operation is commenced by introducing one well-oiled index finger with its volar side towards the os coccygis, and the other exactly opposite to it, so that the backs of the two fingers are in contact. They are so bent that the third phalanx of each forms

a right angle with the second, and is carried completely above the ring of muscle. The dilatation is then commenced by pulling with the two fingers directly forwards and backwards, and the distance between them is gradually increased, until the sphincter is stretched as much as possible. The muscular fibres will be felt to yield, and some of them may perhaps be torn, but this is of no consequence. In order to obtain a good result, considerable force is necessary, and the distance between the backs of the two fingers should be at least an inch, often an inch and a half, at the end of the operation.

The anus remains for a short period wide open; but after a few minutes it closes again. The little rents or fissures made in the mucous membrane, and the trifling bleeding from them, as well as the ecchymosis produced in the anal region, are of no consequence, and require no treatment. Pain commonly continues for some hours, and is sometimes very severe. Usually it is not worse, and and is more transient, than that which has followed every evacuation; often it is much less severe. Frequently there has been some difficulty in micturition, not continuing after the second day. After simple dilatation, Rossander has never seen any abscess or other unfavorable complication. The paralysis of the sphincter is very temporary, and has never given rise to incontinence of fæces. Indeed, the effects of the operation were so slight, that many persons requiring it have been treated at the hospital as out-patients, and allowed to proceed to their homes after a short repose. As a dressing, nothing is required but cold compresses, renewed as often as they become warm, so long as the pain continues. Among all the cases treated at Stockholm there has been no relapse; and, commonly, the first stool after the operation (especially when delayed for forty-eight hours or more), and always the second or third, has been wholly free from pain. With the removal of the pain, all secondary or sympathetic sufferings have also disappeared.

The various methods of operative treatment that have been advised for contraction of the anus may all cure the disease, but none of them so speedily, certainly, and safely, as dilatation The small incisions are often insufficient. The deep incision of Boyer is equally effectual and often less painful But it has been followed by abscess, and even by death, and the resulting wound is always many weeks in healing. Blandin's subcutaneous incision is less dangerous than Boyer's; but it is very difficult of accomplishment, and requires a special apparatus. The dilatation also is advantageous on account of the facilities it affords for the ligature or removal of piles, which very often complicate the original disorder, and which may be treated with great facility as soon as the sphincter has been stretched.—*Ranking's Abstract*, Jan., '67.

ART. II.—*Interior of the Urethra Viewed by a Magnesium Light:* By E. ANDREWS, A. M., M. D., Professor of Surgery in Chicago Medical College.

THE invention of the endoscope, simultaneously by a French and by a Dublin surgeon, has opened a new field, both in the pathology and treatment of the urethra. The endoscope consists of

a lamp, a perforated mirror, and an urethral tube. These, when combined, throw a condensed light into the urethra, and enable the surgeon to inspect every part of it. One of the important fruits of this instrument is the discovery that the chronic inflammation remaining after certain cases of gonorrhœa is granular in its character, and is, in fact, the same disease as granular conjunctivitis, granular laryngitis and granular inflammation of the cervix uteri.

Some months ago, I had an endoscope constructed after the Parisian plan, and used it with some degree of satisfaction; but there is often a deficiency of light in these instruments, rendering the view unsatisfactory, unless all parts are in perfect order. Seeking to overcome this evil, I one day procured some small magnesium wire, which, when held in the flame of a lamp, burns with a white light, whose brilliancy dazzles like the glare of the sun at noonday. Introducing the endoscope into the urethra of a patient, I caused a friend to insert the wire into the flame of the lamp. The result was to illuminate the urethra magnificently. The mucous membrane, with every little fold or patch of varied color, was as plainly in view as could possibly be desired. It could not have been seen any better, had it been dissected and laid in the sunlight. By gradually withdrawing the tube, the whole of the canal may successively be seen as it collapses across the end of the tube. Seeing the perfection of this illumination, I have ordered a spring and some small wheelwork attached to the lamp, so that the wire may be made to advance into the flame without the help of an assistant. In this way, no doubt, the difficulty of the illumination will be fully overcome, and the urethra can be inspected almost as easily, and quite as perfectly, as the tongue.—*Chicago Med. Ex.*, Apr., 1867.

Art. III.—*Cure of Opaque Cornea.*

IF we are to believe M. de Luca, opacity of the cornea is no longer one of those intractable affections which shame the Doctor in the public mind. In the memoir just presented to the French Academy, the *savant* we have mentioned states that he has found that sulphate of soda has the power of removing corneal spots in an almost incredibly short space of time. M. de Luca was led to experiment with this reagent f om the circumstance that it maintains the fibrine of the blood in a state of sclution. In his first trials he employed the sulphate dissolved in distilled water. This liquid he allowed to fall drop by drop on the ball of the affected eye, and the result was that, after some days' treatment, the opacity was to a considerable extent diminished. It then occurred to him to try the sulphate in the state of fine powder. On using it in this condition, and allowing a few particles of the powder to fall upon the eye, a more decided result was obtained—in one instance, a patient who had been previously almost blind regained a certain amount of distinct vision. These results are, if true, exceedingly remarkable. We trust English ophthalmic surgeons will give the new remedy a trial, and we hope that the beneficial effects may not be of an evanescent character.—*Med. Times & Gaz.*, June 22, '67.

ART. IV.—*Ingrowing Nails: Cauterization by Means of Vienna Paste.*

ONE of the most expeditious processes for overcoming this painful affection, is that just brought into practice by M. Jarjavay. Nothing is more brilliant, nothing more rapid, than this enucleation of the nail by means of an elevator carried behind the posterior edge of it. The sufferer himself is charmed with it! But it must be acknowledged that the process requires great manual skill, and since some may hesitate to have recourse to it from want of experience, they may substitute for it the cauterization of the fleshy excrescence, according to the method which M. Didiot, chief physician of the army, has described in the *Union Médicale de la Provence.* When the affection is slight, limited simply to the anterior part of the lateral groove of the nail, it will in general suffice to excise the ingrowing edge, raised up with forceps, and to make a single cauterization of the flesh with the Vienna paste, with the perchloride of iron, or with burnt alum, mixed with picked lint, in such a manner as to form a crust with the eschar, and to favor thus a rapid healing underneath. Most frequently the patient begins to walk the day after the operation, and never has M. Didiot seen it followed by a return of the evil. In more serious cases preliminary precautions and careful attention are necessary to insure success to the method. "I apply," says the author, "during two days at least, emollient poultices to the toe, and the morning of the application I make use of a foot-bath for an hour, in order to prepare the injured tissues for the action of the caustic; I then bind around the toe a bandage of adhesive plaster, with an opening sufficiently large to leave exposed the soft parts of the affected edge and the root of the ungual matrix, which I cover with a thin coating of the Vienna paste; this I leave in contact with the tissues about fifteen or twenty minutes, in order to permit the formation of an eschar, which extends through the thickness that I wish to destroy; this result obtained, the toe is again covered with emollient poultices and the foot submitted to the action of baths for three or four days, to hasten the separation of the eschar; as soon as it becomes loosened, it should be removed by means of scissors, or a bistoury, and at the same time should be effected the excision of the ingrowing edge of the nail, which, having become membraniform, admits of the operation without causing the least pain. At length, to prevent any reproduction of the edge of the nail, and to avoid thus the danger of the return of the evil, I take the precaution to cauterize slightly the bottom of the groove, even to the root, either with Vienna paste, or simply with solid perchloride of iron, as the case may be. The sore is then dressed simply; it heals in the course of ten or fifteen days, and regains an epidermic tissue which gradually increases in density, and at length becomes horny, so to speak." In no instance has this method given rise to any unpleasant accident; there is nothing in it which can delude a skilful operator, but it is within the capacity of the most modest practitioner; and what ought, moreover, to render it preferable to other methods, is the safety of its results.—*Jour. de Méd. et de Chir. Prat.*, May, '67.

Art. V.—*Animal Grafts.*

A BRILLIANT French novelist not long since wrote a curious tale, recently translated for the American public, with the original title, "The Man with the Broken Ear." The plot was based on the scientific truth that viability in the part and system can be retained when function ceases,—that what we call *life* is but function in action.

Plastic surgery recognizes this life in a part, and grafts one portion of the body on another, or replaces a portion of a nose or a finger when lopped off, and witnesses its growth. In lower animals this principle is more astonishingly developed. Cut a polyp into a dozen pieces, and each fragment will develop itself into an independent and perfect type of the species. A French naturalist, M. Vulpian, cut off the tails of tadpoles, and saw them not only live but *grow* for ten days, indifferent to all theories of nervous centres, digestive apparatus, or circulatory systems. But the member that seems to have the strongest dose of the "vital principle," is the tail of a rat. This is the very ideal of life, and here, if anywhere, we ought to locate the seat of vitality. The following experiment was made by Mr. Bert. He dried a rat's tail under the bell of an air-pump, and in immediate proximity to concentrated sulphuric acid, so as gradually to deprive it of all moisture. Then he placed it in a hermetically sealed glass tube for five days. At the end of this time he subjected it for a number of hours to a temperature of 98 degrees, centigrade, in a stove, and subsequently sealed it a second time in his tube. Four days more having elapsed, he united this tail by its cut extremity to the freshly cut stump of a living healthy rat, and quietly awaited the result. His success was as complete as it was marvellous. It commenced to expand and perform the natural duties of a tail, and three months afterwards, he demonstrated by a second amputation, and a careful injection, that it was furnished with proper vessels and was a living part of the second rat.

What rich lessons practical surgery may learn from such experiments, can be imagined. A careful anatomist has transplanted a fragment of bone from the skull of one rabbit to the skull of another, and found it form adhesions and replace the lost portion perfectly. A piece of periosteum taken from a rabbit twenty-four hours after death, grew and produced bone when grafted neatly on a living animal of the same species. Nerves have also been removed from one body to another with success, and some very singular results noticed where a portion of a motor was excised and supplied by a fragment of a sensory filament. The diseases to which grafted members are subject, after they have been exposed to certain reagents, are also full of hints for the pathologist and the physician. But we must refer our readers, curious on such matters, to the papers of the writers mentioned.—(Phila.) *Med. & Surg. Rep.*, Aug. 24, '67.

Art. VI.—*Reduction of Hernia by Administration of Coffee.*

THAT coffee has a very much more powerful influence on the peristaltic movement of the intestine than tea is pretty generally known; but we doubt whether this action has hitherto been

brought into play in the reduction of hernia. The following instance in which coffee was accidentally and successfully employed for this purpose will therefore interest our readers: A man who had for some years a reducible hernia, while over-exerting himself converted his hernia into an irreducible one. On being seen by Dr. A. Bourillon, who describes the case, he was suffering from colic and nausea, the pulse was small, and a round, hard tumor, giving a tympanitic sound on percussion, existed in the right groin. The relations of this showed that it was a strangulated right inguinal hernia. The taxis was tried in vain for hours. Applications of belladonna, tobacco, salt, etc., were also unsuccessfully tried. The next day the condition of things was worse, and all efforts to reduce the hernia were fruitless. It was therefore determined to operate on the following day, and the patient was meanwhile ordered to have infusion of coffee (100 grammes of freshly roasted and ground coffee to five cups of boiling water). On coming to operate in the morning, Dr. Bourillon found that the hernia was reduced. According to the patient's own account, the coffee having produced movement of the intestine, seemed to extend the contraction to the hernial sac, which passed inwards suddenly with a distinct *gargouillement.—Ranking's Abstract*, July, '67.

ART. VII.—*Formation of Artificial Urethra.*

IN the following case, which presented difficulties not very frequently met with, Mr. Teale carried out a plan of operation suggested to him by his colleague, Mr. Wheelhouse, during the consultation upon the case.

Joseph H., aged thirty-six, was admitted into the Leeds Infirmary on December 30th, 1866. Two years before he suffered from a phagedænie chancre, which destroyed the under half of the glans penis, and, extending some way down the urethra, produced stricture of the meatus and anterior two-thirds of the urethra. This stricture was kept pervious until four months ago by occasional use of the bougie, and then became so much contracted that an instrument could not be passed, and all the urine escaped by a fistula at the side of the penis.

During January frequent attempts were made to tunnel through the urethral cicatrix, but without success.

January 31st.—Whilst Mr. Teale was considering the propriety of opening the urethra behind the stricture, and, by stitching mucous membrane to skin, of securing thereby a permanent opening even at the inconvenience of producing hypospadias at the root of the penis, a suggestion made by Mr. Wheelhouse appeared to solve the difficulty, and was at once carried out. The strictured urethra, extending backwards two inches from the meatus, could be readily felt as a hard cord, beyond which the remainder of the canal appeared to be perfectly natural. The loose skin covering the penis having been reflected from the corona glandis backwards like an inverted glove, until the anterior two-thirds of the penis was com-

pletely denuded, the healthy urethra was opened behind the stricture, and the stricture and cicatrix were slit up as far as the meatus. A catheter was then introduced into the bladder, and laid in the newly-made groove in the strictured urethra. Lastly, the reflected skin was drawn forwards over the denuded penis and catheter, and stitched to the base of the glans.

February 4th.—A narrow ring of the preputial skin has sloughed, and is partially detached.

12th.—Catheter removed.

March 7th.—Middle-sized bougie passed. Patient returned home.

April 23d.—His medical attendant reports his condition as follows: "He passes urine in a good stream through the opening you made, and can easily pass No. 6. All the fistulæ are healed, and the man's health is quite restored."—*Ranking's Abstract*, July, '67.

Art. VIII.—*Excision of Joints for Traumatic Cause:* By Z. B. Adams, M. D., of Roxbury.

THE very complete and able monagraph of Dr. Hodges,* which received the Boylston Prize for 1861, prepared the way for the vast accession to our knowledge of the subject of excision of joints furnished by the published reports of the surgery of our late volunteer armies. These reports are not yet complete, but they are nevertheless sufficient to establish certain points of great practical importance. The valuable work of Dr. Hodges enables us at a single glance to see precisely what was known and what had been done in this branch of surgery previous to 1861, and to compare it with what has been done in this country since. So far as its influence extended, this carefully written monograph must have inclined the profession to regard these operations with favor, and may have directed the practice of our army surgeons. However that may be, the number of cases of excision of joints for traumatic cause during our late war was by many times greater than that of all cases on record previously, and considerably greater than that of all recorded cases of excision of joints for whatever cause. No one surgical procedure practised in our armies has had so much light thrown upon it as this; no one can be compared to it in the importance it bears in encouraging us in the path of true conservative surgery.

From the account of the early history of these operations given in Dr. Hodges' paper, it appears that the practice of excision of joints for injury or disease is probably of recent origin, dating no farther back than the latter part of the last century, and that it has been recognized as a legitimate resource of surgery only within a few years. The first example in this country was a case of excision of the shoulder-joint, successfully performed by Dr. William Ingalls, of Boston, in the winter of 1812–13, for gun-shot wound.

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* Excision of Joints. By Richard M. Hodges, M. D. Boston, 1861.

Circular No. 6, War Department, Surgeon-General's Office, November, 1865,* contains a summary of the surgery of the war, during a period of about three years, or three-quarters of the time. In this report is a very complete account, in tabular form, of thirty-two cases of excision of the head of the femur, four of which recovered. Previous to 1861, there had been twelve cases for gun-shot, and one recovery. This report contains five hundred and seventy-five (575) cases of excision of the head of the humerus. Previously, there were ninety-six (96) for traumatic cause, and fifty (50) for disease.† Of excision of the elbow there are three hundred and fifteen (315). Before 1861, there were but sixty (60) cases on record for injury. These numbers include both partial and complete, primary and secondary, excisions.

It is to be regretted that we are not yet in possession of certain statistical facts relating to these operations of higher importance, perhaps, than their numbers and rates of mortality. The very able and thorough manner in which the work has been thus far prosecuted at the Surgeon-General's Department is a proof that much light will yet be thrown upon the obscure points, and that, from data furnished, by this country alone in the short space of four years, will be deduced for the first time an estimate of the value of these operations, very nearly approximate to the truth. One point of special importance has yet to be elucidated, and that is to know the ultimate results, and to compare them with those of amputation and with those where there has been no operative interference. Another point of great importance, especially in excisions of the elbow and other ginglymoid joints, is the question of the relative dangers of partial and complete excisions, and to determine the precise value of the fact that in those joints the former are more unsuccessful than the latter. "The returns for three-fourths of the entire period give 315 cases of excision of the elbow, and the results are ascertained in 286 cases. In 16, amputation of the arm became necessary; 62 terminated fatally, or 21.67 per cent., which is a mortality a fraction greater than that resulting from amputation of the arm. This result is altogether opposed to the Schleswick-Holstein and Crimean experience, and will doubtless be modified when the statistics are completed. It may be ascribed partly to the fact that the returns for the earlier period of the war include quite a large proportion of partial excisions, which are far more hazardous than complete removal of the articular surfaces."—(Circular No. 6.) It seems, therefore, to be admitted that excisions of the elbow, if complete, are less fatal than amputations of the arm. But were this not so, the exceedingly happy results of this well established operation‡ would fully justify its performance in all such cases of injury

* Reports on the Extent and Nature of the Materials available for the preparation of a Medical and Surgical History of the Rebellion. Philadelphia. J. B. Lippincott & Co.

† Taken from Dr. Hodges, who seems to have thoroughly sifted the bibliography of the subject.

‡ "A single illustrative case" is given in Circular No. 6. A soldier, aged 23, was wounded by a musket ball, "which shattered the inner condyle of the right humerus and the olecranon process of the ulna." Twenty three days after, "Surgeon Charles Page, U. S. A., excised the elbow-joint, employing the H-shaped incision. Two and a half inches of the lower extremity of the humerus, an inch of the upper extremity of the ulna, and a small portion of the head of the radius were removed." Two years after, the soldier re-enlisted. Surgeon Dougherty, Medical Director of the corps, who examined him, says: "The man went through the Manual before me, and stated his readiness to do all the duties of a soldier. The degree of motion was perhaps one-third of the normal amount."

to this joint as would otherwise call for amputation above the elbow; for, in deciding between excision and amputation in cases of joint-injury, there is, besides the relative fatality, a question of scarcely less importance, and that is, how far the value of the member which it is sought to preserve may be impaired by excision; or in case of amputation, to what extent the loss of a limb may be supplied from the resources of human ingenuity. But, as Dr. Hodges observes, the question is not always the easy one between excision and amputation, but often the more difficult one between excision and the chances of expectant treatment. This is sometimes exceedingly perplexing, nor is it easy to define the precise grounds upon which to found a decision. This point, also, will doubtless be elucidated in a great degree, when the Reports of the Surgeon-General's Office are completed.

Of excisions of the wrist there are thirty-five (35) cases, and the mortality rate is about 8 per cent. less than that of amputation of the forearm, and perhaps a little greater than that of amputation at the wrist. But the important point of the amount of mobility and usefulness of the hand after this excision, is not yet clearly ascertained.

With regard to the lower extremity—The mortality from amputation at the hip-joint for gun-shot wound is found to be 88-03 per cent. for all recorded cases (103); that for excision in like injuries in our army, 87-5; whilst the results of expectant treatment, so far as they appear upon the records, are yet more disastrous.

Prior to the late war, there were but seven (7) cases recorded of excision of the knee-joint for gun-shot, with two recoveries. This operation was performed eleven (11) times in our army, with two recoveries, also. The mortality, then, is 77-78, which shows that this operation is one of the most hazardous in army surgery, being perhaps more fatal than amputation at the upper third of the thigh.

The results of excision of the ankle-joint are also very dicouraging. Our army returns thus far show 18 terminated cases, of which 12 recovered and 6 died. "The judicious use of the gouge and bone-forceps is admissible in gun-shot wounds of the ankle-joint; but formal excisions are rarely successful."

From the foregoing facts can be deduced the following maxim: When dealing with severe injury of any of the joints of the upper extremity, the surgeon should never overlook the fact that the best mechanical appliances which the ingenuity of man has yet devised, make a quite ineffectual substitute for the wonderful mechanism of the human forearm and hand, even when motion is impaired or partial, while it is an established fact that the dangers of excision are, on the whole, inferior to those of amputation.* Whereas, in case of compound dislocation or fracture of one of the joints of the lower extremity, it should be remembered that excision is attended with more danger than amputation; that the various forms of

* The rate of mortality in amputation at the shoulder (according to Malgaigne 50 per cent.) is, in our army, 30-24 per cent.; that in excisions of the head of the humerus, primary and secondary, 32-43, or about 7 per cent. less.

artificial leg serve both the purposes of support and locomotion; and that a leg from which a joint his been excised is often worse than useless.

What has been learned concerning excision of the shoulder-joint for injury? Dr. Hodges collected 96 cases for traumatic cause. In our army there were 575 cases, or six times as many.* Of the previous cases, 53 were known to be primary, and 34 secondary, operations. Dr. Hodges draws the inference from these numbers that primary operations are more dangerous than secondary, and further adduces the authority of Esmarch and others in support of this opinion. He also states that this was a conviction established in his own mind from a consideration of the many circumstances which seem to favor secondary operations in these cases. In point of fact the reverse is shown to be true from our hospital reports, by an accumulation of evidence so great as to put out of the question all previous statistics on the subject. In 252 primary operations the per centage is 23-3 fatal, and in 323 secondary ones the ratio is 38-59, being 15-29 per cent. in favor of primary excision of the shoulder-joint for gun-shot. It would seem that this must be admitted to be very near the truth, when we consider under what adverse circumstances many of these primary operations must have been performed, while the secondary ones were probably most often practised in comfortable hospitals, and "with all the appliances and means to boot" to guarantee success. The surgeons who performed the secondary operations we may assume to have been on the whole more skilful, or at least, primary operations, being most frequently practised on or near the field of battle, or among the distracting and pressing emergencies of crowded field hospitals during sanguinary and dubious engagements, were necessarily often performed in a hasty and unskilful manner. Not only this, but as Dr. Hodges remarks, "as a rule it is the less grave injuries, those which hold out some hope of success under expectant treatment, that are reserved for secondary operations, while time, and the establishment of suppuration, enable the surgeon to define the extent of the lesion more exactly than can ordinarily be done at the moment of receiving the injury, thus securing a more thorough and perfect removal of all diseased or injured structures." To these considerations must be added the fact, that, after secondary operations, the patient is rarely subjected to exposure to the elements, or to dangers, fatigues and shocks, from transportation or other causes, to all of which soldiers operated on at the field of battle are liable. It may be quite safely asserted that primary excisions of the shoulder-joint for gun-shot are much less fatal than secondary ones.

Excision of the head of the humerus is the operation appropriate to all serious injuries of the upper part of that bone, unaccompanied by damage to the great vessels or nerves, or by very extensive destruction of the soft parts. Mere splitting of the shaft longitudinally does not necessitate amputation, which may, however, be proper in case the bone is splintered or comminuted for more than half its length. Excision, and not amputation (with the partial ex-

* The whole number of amputations at the shoulder in our army was 453, or 147 less than the number of excisions thus far reported. This is highly creditable.

ceptions above noted), should be resorted to in all severe compound injuries of the upper part of the humerus, not lesions of the head of that bone alone, but in those occurring about the surgical neck, and accompanied with longitudinal splitting, even though the epiphysis, as is frequently the case, be not implicated in the fracture. It is found that no good purpose is served by excising a portion of the shaft and leaving the head, while excellent results have followed excision of the head, with five or even six inches of the shaft.

In Circular No. 6 is cited the case of private Jno. F. Reardon, 6th N. Y. Cavalry, in whom the head and upper third of the shaft of the humerus were excised on the day following the receipt of the wound, and a piece of shell four inches long and one broad extracted from beneath the deltoid muscle. Two years after the operation, he could move the arm backwards and forwards, and carry his hand to his mouth, while motion in the forearm and hand was unimpaired. This is given as a typical case.

Gun-shot wounds of the upper end of the humerus are often complicated with injuries to the coracoid and acromion processes, to the glenoid cavity, to the clavicle, or to the body or neck of the scapula. Ordinarily, decapitation of the humerus is alone required. Fragments of the scapula may be removed or left to exfoliate without danger, although the suppuration is thereby increased and recovery protracted. Complete excisions have, however, been successfully practised, and large portions of the clavicle and scapula have been removed, together with the upper part of the humerus. On the other hand, partial excisions have been found to succeed remarkably well in the shoulder-joint, and we have good authority for the opinion that the glenoid cavity had better be left alone, and not interfered with by sawing, cutting or gouging. Where only a portion of the head is removed instead of the whole, motion, it is said, is apt to be more restricted after recovery. Fatal or unfortunate results of partial excisions seem to be less frequent in the shoulder-joint than in the ginglymoid.

In excisions for traumatic cause, no precise form of operation can be laid down, and the procedure must vary according to the extent and nature of the lesion and the condition of the soft parts. It is certain that, in a very large number of cases, the extent of the lesion cannot be accurately defined previously to the operation. The rule should therefore be to begin the operation as if it were exploratory, destined to be completed or amputation substituted, according to the nature of the case, the first incisions being such as would apply in case of amputation.

Great care sould be taken to cover the soft parts while sawing or cutting the bones, as undoubtedly suppuration is often prolonged, and recovery retarded, by the presence of dust, shavings or splinters of bone, in the wound. It is unnecessary to do more than snip off the sharp points and irregularities of the shaft, and by no means is it essential to follow a fissure far down for the sake of cutting only through soft bone.

The success of these operations, especially primary ones, in military practice, would seem to show that the after-treatment is

very important. The parts should be guarded against irritation or great displacement. It has been recommended to put a pad in the axilla to prevent the upper part of the bone from being drawn inwards. It is doubtful if this is of the slightest use. Rest upon a pillow for a few days, and a gentle compression to prevent burrowing afterwards, appear to be all that is required. The limb should, of course, be supported by a sling. Passive motion may be begun early, although anchylosis is little to be feared. The chances of this latter accident are said to be greater in rapid than in slow recoveries from excisions of joints; but this opinion, like that of Esmarch that excisions of the right side are more successful than those of the left, will very likely prove to be unfounded.*

The following paragraph from the monograph of Dr. Hodges is peculiarly applicable to-day: "At the present time the value of a limb from which the joint has been excised, the comparative dangers of the operation, the joints to which experience shows it to be properly applicable, and the conditions of disease or injury under which it may be performed, as well as the extent and manner of operative interference, can all be estimated better than ever before." Taking into account the dangers of primary excision for traumatic cause as compared with those of the amputation which it replaces, and looking at excision of joints in the light of a method of conservative surgery, having regard to the ultimate value and usefulness of the limbs which it seeks to preserve, the following conclusions may be drawn from what has been said above.

Excision of the shoulder-joint is greatly preferable to amputation, inasmuch as it lessens the risk to the patient, and leaves him with a useful forearm and hand. The excision should be primary. The same is true to a less extent of the elbow, and still less of the wrist.

Whenever operative interference is required for injuries of these joints, especially for gun-shot, amputation should, if posible, be made to give place to excision.

On the other hand, while excision of the head of the femur offers no advantages over amputation, the latter is to be preferred to the former in injuries of the knee- and ankle-joints, the question in these being between amputation and the chances of expectant treatment.

NOTE.—The whole number of cases of excision of the knee- and ankle-joints is perhaps too small to warrant conclusions to which may be given the significance of rules. That they are few is due to the fact that their danger is well recognized, since the opportunities for them must have been very numerous. There still remains much to be learned concerning excisions.—*Bost. Med. & Surg. Jour*, Apr. 25, '67.

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* This opinion of Esmarch is not sustained by the statistics of our army surgeons.

Art. IX.—*On Operating when one Eye only is Blind:* By Haynes Walton, F. R. C. S., Surgeon to the Central London Ophthalmic Hospital, and to St. Mary's Hospital.

THIS is a question that is put to me many times in the course of a year. I gather from my intercourse with Professional men that there exists an impression against interfering, although I could never discover among them any sufficient grounds for the opinion, nor indeed collect any data. The idea seems to have come down traditionally from an age when ophthalmic subjects were but little understood. I have sought in vain for any definite rules among the treatises on the eye by our countrymen. What is the opinion of the surgeons of the present, who are fitted by their connexion with Ophthalmic Surgery to speak authoritatively, and who have no doubt examined the question, I do not know. I could wish to have the opinions of each of them all as they exist at this moment, and to hear such in its genuineness, without the influence, bias, or effort inseparable from a discussion.

There is a necessity for me to have some definite rules to act on. The exercise of my calling demands them. My patients, too, seek for them.

In discussing the subject, there are facts to be recognized, conditions and circumstances to be considered. There must be reviewed the physical causes that render the eye useless, the operations that are needed, and the probability of the result, and the quality of the sight that may be restored.

It may be stated in general terms that a person who has lost an eye, besides being blind on one side, has but a very limited field of vision for near objects beyond the centre of the face, and which angle is regulated by the degree of prominence of the nose; that the definition of sight which depends on binocular vision is totally lost; that the power of accurately estimating distance is lost, and in consequence of this mistakes are made in certain mechanical acts, as the pouring of a liquid from one vessel to another, although the vision is quickly rectified by touch. This defect may remain in degrees. Whether it is always entirely overcome by those who have lost an eye in infancy I do not know, for it has never occurred to me to ascertain. That with labor requiring minute sight there are more readily developed the many effects of impaired vision than when two are used, because the one organ cannot do the work of two. These are points that some one-eyed people are loth to confess, and they cannot be blamed for their caution. It is, therefore, apparent that an individual is the better for two sound eyes, and that that measure is admissible which, while it restores sight, does no harm elsewhere.

And here it is necessary to observe that nothing of value can be gathered from the mere spontaneous expression of patients as regards the question, for they cannot understand the subject. Even more than this, when the data from which conclusions can be formed are set before them, they are as likely as not to act wrongly. The accepting or rejecting, then, of a proposal put to them, must be recognized only as a matter of will, which they have the power to exercise or not, and not as a valid opinion.

I know of several persons who are now blind in both eyes, because they cannot make up their minds to have anything done. Every surgeon must have seen patients die rather than submit to any operation that would save life.

As the physical defects of the eyeball proper that need operation for the restoration of the function of sight are cataract, and the loss of the pupillary aperture, it is impossible for perfection to be restored. After the removal of cataract, peculiar glasses are needed. In the formation of an artificial pupil, the aperture must be either at the margin of the iris when the quality of the sight is lessened, or in the centre when the lens is absent, and minute use of the eye must depend on cataract glasses. Unfortunately, an eye cannot be fitted with a cataract glass, and brought up to a healthy state so as to match the other eye. The adjusting power is gone, and, for seeing at different distances, glasses of different foci are needed. Therefore arises this important consideration on which the whole matter hinges. Will this kind of sight, which must be inferior to that of the other eye, and at times in marked degrees, be really of material service? It may be premised that, if a surgeon is to answer from his own knowledge and experience, a long time is required to gather facts and dates; and, to avoid errors, the patients should be watched for years. I speak then from what I have seen, and say yes. I should be deterred from operating only by the probability of the eye being too much damaged to give that amount of sight which is known as useful sight, on which point much discrimination and a long familiarity with ophthalmic surgery are imperative. I have made lateral pupils, the crystalline lens being present, and central pupils, the lens being absent. I have selected those cases only in which I was as sure as I could be that the fundus of the eye was sound, and the retina unimpaired, and the other conditions such as would insure the best amount of sight to be derived from such an operation. I place stress on this; for without it, without useful sight can be fairly expected, I would not operate. The false pupil I have invariably made either upwards or downwards, never inwards or outwards, on account of the double vision which would probably ensue. In every case decided benefit has followed. Side-blindness has been removed, and direct vision assisted; in those cases in which the lens was present there has been restoration of the ocular adjustment. I am giving general results, and avoiding minute detail. My last patient was operated on at the Central London Ophthalmic Hospital in September of this year. He was a soldier in a hussar regiment, and was acting as groom to a captain. When he was sent to me I found that there was a dense central corneal opacity with prolapse of the pupil, almost the whole pupillary margin being adherent. I made an upward pupil by drawing out a bit of the iris and cutting it off. Mr. Wilkinson and Mr. Taylor, my colleagues, assisted me. Perfect success ensued. My patient was highly delighted at the addition to his vision and in the improvement in the focussing power of the eye. He was particularly proud of his distant sight, but he could, too, read quickly No. 9 of Jaeger's test type. There was not the slightest confusion in vision. His master, who examined him with care, wrote to thank me for the result, and enclosed a donation for the Hospital.

In every case in which I have made a central pupil after the loss of the lens, the patients have expressed their satisfaction and pleasure at the benefit they have received. I am certain, therefore, from the result of practice, of the advisability in certain cases of making a false pupil when one eye is sound. It would seem that confusion of vision does not, and is not likely to, ensue when there is perfect vision in the one eye. This agrees with the fact that in "colomba iridis" in one eye no confusion follows.

I have a far more extended experience in operating when cataract affects only one eye. In the cases selected for my trial and observation, I was quite sure that the eye was sound and not invaded by cataract.

In nearly all, my patients were under adult age; a few were young adults, and two were past sixty years of age. I will allude to five of them specially, because they were in private, were persons of intelligence, and all were seen several times after they had left me as patients. One was a well-educated, clever publican, about thirty-two years of age. Cataract formed without any apparent cause. I operated by solution. No better result could have been obtained. The last time I saw him he assured me that he was as pleased with the new eye as ever. He said: "The more I think of it, the more satisfied I am. I no longer run against people and things."

Another was a master builder, twenty-six years old. His cataract was idiopathic. He sought treatment because the blindness on the one side was "the plague of his life." The result of the operation enabled him, as he expressed it, "to get on better with his business."

The third patient, about forty years of age, was a clerk in a house of business. His disease was idiopathic. He was fully satisfied. He found the benefit he had been told he might expect.

The fourth was a governess. She came to me several times to show herself after my professional attendance had ended. She was well pleased at what had been done.

The last was a guard on a railway. He was thirty years of age. The eye-ball was wounded by a splinter of wood, and cataract ensued. Since my operation he has been able to attend to his work satisfactorily. Before I operated he frequently blundered, and his defect was apparent to others.

As, then, the evidence which I have collected establishes the propriety of endeavoring to restore an amount of sight less than the standard of health in the one eye, while the other is healthy, I advocate such practice when my opinion is sought. When a child with a wounded eye and an opaque lens is brought to me by his distracted parents, anxiously asking what can be done, I set before them the state of the case, and recommend the removal of the cataract.

After fifty years of age, when, as a rule, the operation for solution is no longer applicable, because the lens is harder and the operation for extraction is the more proper, circumstances are somewhat altered, and the opinion I give a patient is modified, and for this reason. The operation for solution being so very safe, I can with confidence promise success to my patient, if time be allowed me. Extraction is attended with risk of failure. Although I suspect,

from all I can learn, that I get as good results from this operation as my neighbors, I know that I cannot get the success that I can command in solution. Then there is one more degree in the quality of restored sight in the extraction cases. The sight may be very good or very inferior, although the term success is applied to all. Added to this, when a person is old, he has pretty nearly done with the active affairs of life, and he can then get on tolerably with one eye. I endeavor to do my duty in explaining all this to a patient —adding, "If nothing untoward happen, you will be the better for the operation; if it do, you will be none the worse as regards the other eye"—and leave him to determine between the unpleasantness of the operating process and chance of failure, and the probability of success and the addition of a certain amount of sight.

It does not come within the scope of this paper to entertain the question of the removal of a cataract to improve the appearance, nor in early life to prevent a squint.—*Med. Times and Gaz.*, Feb 2d, 1867.

Medical Pathology and Practical Medicine.

ART. X.—*Nightmare of Children:* By SYDNEY RINGER, M. D., Professor of Materia Medica and Therapeutics at University College; Physician to University College Hospital; Assistant Physician to the Hospital for Sick Children, Great Ormond street.

VIOLENT screaming, which cannot be quieted, and which may last for a few minutes to several hours, is frequently witnessed in children. This is generally produced by one of three causes—hunger, pain, or nightmare. These remarks treat of screaming from the last cause.

The following account gives a fair example of a case of this kind:

Charles L., two years old, came under my care at the out-patient department of the Children's Hospital. The child was badly nourished, and was afflicted with a frequent hacking cough, that troubled him much more at night than day. For two months he had, twice or three times each night, started from his sleep, screaming violently. Each paroxysm of screaming lasted about half an hour. Sometimes he rolled about the bed, threw his arms wildly about, and knocked his head violently against the bed; on other occasions he sat up in the bed and screamed so violently that he became black in the face. While thus afflicted his eyes rolled, and he appeared to be quite unconscious, as he did not recognize his mother, and could not be brought to by her care and attention. His mother stated he did not appear to have his senses. He gave no signs of being in pain. He did not talk, he only screamed violently. After each paroxysm he fell asleep, but his sleep was disturbed, and his eyes still rolled,

and he frequently moaned. His gums were neither red nor swollen. His appetite was good, but his bowels had been relaxed for three weeks, and his motions were green and slimy, but no worms were ever seen in them. He was fed judiciously. He wetted the bed at night. During the fortnight that preceded his application for relief at the Hospital, he had suffered from two convulsive fits, when his arms worked and his face twitched. Each of these fits lasted twenty minutes.

This case may be accepted as a very fair example of the screaming of which we are now speaking.

Such screaming may occur in children of all ages; but, while it is met with in children of 10 or 12 years of age, it is of more common occurrence in those of a few months to two or three years old.

These attacks may last a very variable time, for though the paroxysm may pass away in a few minutes, it sometimes continues for half an hour to one or even two hours. During this time the screaming is violent and continuous. Sometimes the children appear to be asleep throughout the paroxysm, while other children wake from their sleep, but continue to scream with unabated violence; but even when awake they often appear to be unconscious of what occurs around them. They seem to be, as their mothers state, "out of their senses;" thus they for the most part cannot be quieted. Others appear to awake thoroughly, and are then terribly frightened, and often tremble all over. Such children can generally be quieted in a short time by kindness and attention paid to them, but they remain for some time much agitated, and refuse to be left alone, or, if removed from their bed, they are afraid to return to it. Some children cry only a little, but they wake up frightened and trembling.

Such screaming may continue to occur for months and even years, sometimes disappearing for a time, and then, from various causes to be immediately mentioned, it returns again. It is often repeated several times each night for several months.

Such attacks are naturally a source of much annoyance and much anxiety to the parents, and thus medical men are not unfrequently consulted for this affection. The screaming may be so violent that the child becomes "black and blue" in the face, and occasionally it even terminates in a general convulsion. This, however, is unusual, and in my experience occurs only in children who suffer from convulsions without screaming and from other causes. Such paroxysms of screaming sometimes recur only with long intervals. The child may have one attack, but this may not be repeated for some weeks, or even some months. On the other hand, they may recur ten or twelve times a night.

This screaming differs from delirium, as it does not occur in those diseases accompanied by delirium. Moreover, there is no incoherent talking or muttering, while some children can be roused from this state and are then perfectly rational, although greatly frightened; it occurs only during sleep. The mothers often call it nightmare.

The children, the subjects of this affection, are very generally pale, often ill-nourished and out of health. The immediate cause of this screaming appears to be some disturbance of the stomach and intestines. The nature of this affection of the intestinal canal may be very various in different cases, for one child may suffer from consti-

pation while another is troubled with diarrhœa. This disturbance is very generally dependent on food ill-suited to young children; for this irregularity of the bowels, and the screaming which accompanies it, are especially frequent in those children who have been brought up by hand, and who, consequently, suffer on the one hand from diarrhœa, on the other from constipation. Children thus reared suffer, as is well known, very generally from constipation, and pass hard, pale, lumpy motions, something like marbles. These masses may consist of fæces; they are often composed of coagulated undigested milk, of a yellowish or greenish-yellow color outside, but are white and cheesy within, looking like, and, indeed, being composed of, curds of milk. (It may be here mentioned, in passing, that not uncommonly children pass by the bowel, or sometimes vomit, large masses of the same composition. These are generally two or four inches long, and about an inch in diameter. They often excite much wonder and anxiety on the part of the mother. When broken, the white curdy appearance at once declares their nature.) Children who suffer from the affection now under consideration are sometimes infested by thread worms, and also show signs of the altered condition of the mucous membrane of the stomach and intestines by itching, heat, and dryness of the inner part of the nose, with itching at the anus. This screaming is increased by anything that interferes with the general health of the child. Thus, it is observed to be worse when the teeth are making their way through the gums, although the irritation and pain which arise from teething appear to be incapable of themselves of exciting the screaming. It is also made worse by slight attacks of catarrh of the lungs, or eruptions on the body. By treatment this screaming can usually be at once arrested. Both general and local treatment are in most cases required, the former to improve the general health, the latter to remove the conditions immediately exciting the screaming.

The diet should be attended to, and any irregularity in the hours at which food is given to the child, or any unsuitability in the nature of the food, must be remedied. Attention to these points will very generally arrest any diarrhœa which may be present, but constipation with hard shotty motions will generally prove more obstinate, for such motions are almost invariably passed by young children under six months old when brought up by hand, and this although they may be correctly fed and take nothing but good cow's milk sufficiently diluted with water. We have seen that these hard, round, lumpy motions are partly composed of coagulated undigested milk. This coagulation in mass can sometimes be stayed by the addition to the milk of alkalies, such as lime-water or bicarbonate of soda. The latter is preferable for this purpose, as lime-water confines the bowels, and thus bicarbonate of soda should be preferred.

If the bowels are confined, an active purgative will, in the great majority of cases, suffice to stay the screaming, and will insure to the child calm and refreshing sleep. A powder of rhubarb and soda repeated every night, or every other night, till three powders have been given, is useful. If the child be pale, and the constipation recurs and is obstinate, the following prescription will be found very advantageous—namely: steel wine, to which is added a few drops of tincture of rhubarb, in quantities adapted to the age of the

child and to the obstinacy of the constipation. Usually six drops of tincture of rhubarb in a teaspoonful of steel wine given three times a day will open freely and comfortably the bowels of a child from six to nine months old.

In order to effect a permanent cure it is often necessary to give medicines to improve the general health of the child, as these children are frequently pale and badly nourished.

Thus, in children suffering from the affection we have just described, to effect a permanent cure, if the general health be bad, treatment must be directed to the restoration of the body to sound health. In these cases iron, cod-liver oil, with cold sponging, prove most useful. Of the various preparations of iron, the tincture of the sesquichloride, in my experience, is decidely the best. It has appeared to me that bromide of potassium is able to stay this screaming, but as its administration has been accompanied by the use of purgatives, or a regulated diet, it is difficult to determine how far the bromide was useful. It is, however, I feel sure, worthy of a trial in obstinate cases. Cold baths must be given with care; for while they may, if properly administered, do much good, if administered without certain precautions they will do great harm to children. If too great a shock be given to the child, depression of the system will be produced, and this may last even several days after the bath is administered, when the child may be languid and depressed, and may suffer from much chilliness with loss of appetite. Thus the amount of shock produced by the bath must be regulated to the age and strength of the child. In cold sponging of the body the shock caused is proportioned to the coldness of the water and the length of time the bath is continued; while the younger the child, or the weaker its health, the less able it is to bear up against the effect of the shock to which it is exposed. Hence with young children, and especially with those whose systems are depressed, the bath should be continued only for a short time, and if the weather be cold, the water must be slightly warmed. When the child is weak, the bath should be continued at first for a few seconds only, and its duration be gradually increased as the child becomes accustomed to its use.

If the following simple plan be adopted, the child, even if very weak, can take the cold bath with advantage, and all chance of depression is removed. The child should be placed before a good fire with its feet in warm water, while the cold water is freely poured over every part of the body except the head and face. The healthy reaction, with the agreeable sensations which follow the use of the bath, may be much increased by placing the child for a short time in the warm bed from which it had just previously been removed. The bath should be given immediately the child leaves its bed, and the breakfast should be taken soon after the sponging is completed.—*Med. Times and Gaz.*, May 4, '67.

ART. XI.—*Syphilis in the Lower Animals.*

M. AUZIAS-TURENNE has presented to the *Académie de Médecine* a final report on this subject. It is well known that he has for a long time been investigating the question of the

susceptibility of the lower animals to inoculation with the syphilitic poison, and has very positively asserted that such inoculation can be produced. The last number of the *Archives Générales de Médecine* contains the conclusions arrived at in Turenne's memoir. It should be stated, however, that these views are not yet accepted by the best syphilographers, and that whenever the subject has been brought up in the Academy, Turenne's "unfortunate cat" has afforded occasion for no little merriment. At the conclusion of the reading of the report in question, Ricord objected strenuously to its conclusions, and maintained that thus far there had been no demonstrative evidence of constitutional syphilis in the lower animals, but in the cases reported as such there was such a complication of morbid phenomena that it was impossible to come to any positive solution of the question; and besides, the differential diagnosis in these cases was by no means well established. Turenne's report was referred to a committee consisting of MM. Ricord, Bouley, and Guérin. We present the conclusions of Turenne's paper, that our readers may see what is being done abroad by way of investigation of this interesting subject :

1. Certain of the lower animals—the monkey and the cat especially—can contract syphilis of different forms, either primary or consecutive.

2. The mucous membranes of these animals do not appear to be very favorable to the development of these syphilitic symptoms.

3. Nevertheless, the chancre and false chancre do develop on these mucous membranes.

4. I have seen on the lower lip of a cat a large, slow-growing tubercle, which was three times reproduced in precisely the same spot, and which each time was ulcerated. At the time of each reappearance of this tubercle the cat was pregnant, and afterward gave birth to young which lived but a few days.

5. The primary symptoms in the monkey and the cat are the chancre and the false chancre.

6. I am in doubt whether these animals are susceptible of contracting syphilitic blenorrhagia.

7. Twice I have found roseola—once in the monkey and once in the cat.

8. Scattered eruptions of acne constitute a common and persistent symptom in animals.

9. These eruptions present in the monkey, cat, and rabbit the same characteristics as in man, with only this difference, that while in man they are confined to the scalp and certain hairy portions of the body, in animals they are generally distributed over the whole body.

10. Alopecia is an undoubted symptom of syphilis in the monkey and the cat.

11. Mucous patches and onyxis are unquestionable manifestations of syphilis in animals.

12. It is true that animals are subject to rheumatoid pains, for under the influence of syphilis they become very sensitive to cold, and sometimes the movements of their limbs are interfered with.

13. The hair-bulbs and the scalp become the seat of pain in animals in certain cases of syphilis.

14. Circumscribed acne, syphilitic vegetations, gummy tumors and tubercles of the skin, have frequently been observed in the cat.

15. This animal is subject to ostcocopic pains and adenitis.

16. The cat which is the subject of this paper, has a muscular tumor of a syphilitic nature.

17. Periostoses and also exostoses have been ascertained and proven in the cat.

18. A syphilitic cat, after giving birth to young infected with hereditary syphilis, becomes sterile.

19. From all these primitive and consecutive symptoms, we are able to say there is probably not a single one that will not spontaneously disappear. Each one has a beginning, a continuation, and a termination. This is not accidental, but a natural evolution which is accomplished. They are not arrested by treatment, but they yield spontaneously. The disease itself, in its various manifestations, has a beginning, a culmination, and an end.—*N. Y. Med. Jour.*, May, '67.

Art. XII.—*Hooping Cough and Asthma Cured at the Gas Works:* By W. S. King, Surgeon, U. S. A., of Detroit, Michigan.

SOME facts having fallen under the observation of the writer, showing that decided benefit has been derived from a system of direct medication, whose claims to unlimited confidence are still *sub judice*, he is induced to lay them before the profession, that attention may be drawn to the subject and information elicited from those of extended experience in its use.

It is well known that the gas manufactured from coal for the purpose of lighting our cities, is purified by causing it to pass through a covered chamber containing shelves, on each of which is placed a layer of hydrate of lime. The cover of this chamber is daily taken off, and fresh lime substituted for that which is saturated with sulphur and other impurities. At the time this cover is removed, it has been the practice for the past two years for parents to bring children troubled with the hooping cough, affections of the lungs, *id omne genus*, to the gas works at Detroit, in order that they may inhale the vapor from this lime. The relief afforded is said to be immediate, and the little sufferers are either cured at once or greatly relieved by the first inhalation, a few more visits sufficing to complete the cure. I have only visited this lime room three times, my information being almost entirely obtained from the superintendent of the gas works. During my first visit, a case of asthma was relieved at once by remaining in the room for a few minutes; and at my second visit, a poor woman brought three children with hooping cough, who kept up an incessant cough among them at the time of their entrance. As soon as they entered the room containing the lime mentioned, they ceased coughing, and did *not cough again during my stay of nearly thirty minutes.*

Old cases of asthma, and even phthisis pulmonalis, are said to be greatly benefited, and even cured entirely, by remaining daily a

short time exposed to the gases given off by this lime purified, which, without aiming to be chemically accurate, may be inferred to contain carbonic acid gas, sulphide of hydrogen, free coal gas, free sulphur, and from the odor, I should judge, also sulphuretted hydrogen.

The inhalation of atomized liquids and vapors, as a curative process in diseases of the air-passages is not new. The inhabitants of Solfatara, in Italy, have long been in the habit of exposing themselves to the vapors of gases which there issue from the earth in the cure of prevalent diseases, and as these inhalations are strongly impregnated with sulphur, the use of sulphurous vapors, which have been long employed and highly recommended by various writers, may have been thus suggested. The writer can recollect, more than twenty years ago, of witnessing the good effects arising from the accidental inhalation of sulphuretted hydrogen, and recommending the use of the same to a former professor in the University of Philadelphia during the paroxysm of asthma. As the sulphites, particularly of lime and soda, have justly acquired much reputation as remedial agents in zymotic diseases, the good effect of the lime inhalation in hooping cough might be due, in part at least, to the action of the sulphite of lime, as that disease has been held by Rosen to be caused by the irritation of an insect or morbid poison, partly inhaled into the lungs and partly swallowed with the saliva. Although our list of remedies, if we include the medicines of those systems which *possunt quia posse videntur*, may bear some proportion to the number of diseases and their causes, yet our ways of applying them to and introducing them into the human body are very limited, and not to be compared to the countless avenues by which disease gains an entrance, when it lays siege to the citadel of life. From the days of Hippocrates to the present, medicine, to be given per *vias naturales*, must be administered either by the stomach or bowels. One need only to glance over the various medical journals, to see how eagerly the profession is searching for some new method for administration. And now, while so much is being written on the subject of inhalation, a few facts, showing that the people had decided in favor of the process by the *experimentum crucis*, the author thought would not be out of place.

Should the writer find, upon further investigation and observation, any results worthy of interest, they will be communicated.—(Phil.) *Med. & Surg. Rep.*, May 18, '67.

ART. XIII.—*Some Objections to Dr. J. H. Salisbury's Theory of the Cause and Pathology of Intermittent and Remittent Fevers:* By S. P. BRECKINRIDGE, M. D., Danville, Ky.

WE are all more or less familiar with Dr. J. H. Salisbury's theory of the cause of intermittent fever, presented to the profession in the columns of the *American Journal of the Medical Sciences*, for January, 1866. It is a theory of "elimination," and like Dr. Geo. Johnson's theory of elimination, in the case of the cholera poison, it is characterized by the boldness of its statements

and the unhesitating positiveness with which they are made. Unlike Dr. Johnson's, it is not a theory built on facts which have long been the common property of the profession, but one which rests on the broad foundation of a special discovery. Not that the sweating stage of an ague had never before been regarded as an effort of nature to throw off some morbid product from the system, for such an idea is not by any means new, but adopting this old supposition as his own, and moulding it to fit certain supposed facts just brought to light, he presents us with a theory which, if true—and it can readily be tested—settles at once the long vexed question of the origin of intermittent fever. It is not usual for a great discovery in medicine to be made, elaborated and announced as true within the space of a few months. Jenner was a long while engaged with the cow-pox virus, and Bassereau devoted years to the discovery of the duality of the syphilitic poison. Perhaps, however, as Americans are the fastest people in the world, and take the "shortest cut" on every occasion, they may carry this national peculiarity even into the realm of science. It has been said that Dr. Benj. Rush thought nature was a good deal shaken by the Declaration of Independence, and it may be that she has not yet recovered her self-possession, but yields up her secrets upon the first demand of a free-born American. However that may be, we are told positively by Dr. Salisbury that he has discovered the cause of intermittent fever, and it consists in nothing more, or less, than the introduction into the system of the spores of certain kinds of cryptogamic plants. Now, a good many years ago, Dr. J. K. Mitchell suggested* that malaria might be due to a vegetable agent pervading the atmosphere, and too minute for even microscopic detection; but Dr. Leidy† declared this to be an absurdity. "The smallest of all known beings," he said, "is the Vibrio Lineola of Müller, measuring only the 36-000th of an inch, and the smallest known vegetable spore is very much larger than this, whilst particles of inorganic matter can be distinguished the 200-000th of an inch in size. To assert, under these circumstances," he continued, "that there are spores and animalcula capable of giving rise to epidemics, but not discernible by any means at our command, is absurd, as it is only saying in other words that such spores and animalcula are liquid and dissolved in the air, or in a condition of chemical solution." These observations do not apply, however, to Dr. Salisbury's proposition, for that is quite different in one respect from Dr. Mitchell's. The theory of Dr. S. is simply this, that there are certain plants—called palmellæ and palmelloid—which act as a direct poison to the epithelium of the mucous membrane—that they are easily detected both in and out of the body—that they multiply until nature becomes irritated at their presence and makes an effort to expel them, and that this effort is seen in what we call a chill. In a large number of cases of intermittent fever, he thought he could trace a connection between the disease and the presence of these malignant little plants, growing somewhere in the vicinity. Indeed, he subjected the excretions "of several hundred cases to careful microscopic examination," and states

* "On the Cryptogamic Origin of Malarious and Epidemic Fevers."
† "Fauna and Flora," see Introduction.

that his examinations "establish the fact that ague plants, the same as grown upon the ague soil, are constantly developing in the system of the intermittent fever patient." Many other observations, by other observers and in different places, will be needed to confirm this statement. Even if it should be ascertained that these vegetable spores frequently exist in the excretions coincidently with malarial paroxysms, the relative positions of cause and effect could not, from this alone, be assigned to them. And, furthermore, as was recently remarked,* "after the relation between the poisonous palmellæ and the febrile attacks shall have been established to be causative, and not merely coincidental, we shall by no means regard it as proved that these algoid spores constitute malaria, or are to be considered as the exclusive producers of periodical fevers."

One thing must be said in compliment to Dr. S., that whether his supposed discovery be real and destined to live, or an enthusiastic illusion which shall perish after an ephemeral notoriety, he certainly deserves the thanks of the profession for the untiring energy he has displayed throughout the period of his researches. No doubt, he wishes more than thanks. As his only object has been the attainment of scientific truth, he will be desirous of having his observations carefully scrutinized and put to the test.

Unfortunately, there are many malarious districts in our country, and abundant opportunities will be offered for confirming or refuting his results; yet, heretofore, little or nothing seems to have been done in this respect. It is a rather singular circumstance that this bold and interesting paper has elicited so little comment from the medical journals. Those to which we have access—English, French and American—gave the discovery a passing notice when it was first promulgated, and then dropped it, apparently, for ever. Now, one of several alternatives must exist in this case. Either they regarded it (the discovery) as being so plainly true and self-evident that discussion was uncalled for, or they considered it too important for any but the most serious debate, accompanied by experimental researches which they have not had time to institute, or else they looked upon it as too shallow and worthless for their attention. But none of those suppositions is altogether satisfactory. The first one we cannot admit. The second might have held good a year ago, but has lost its force now, and as for the third, who would think of applying it? Perhaps the main cause of this general silence is, that most members of our profession are not familiar with the different varieties of cryptogamic plants, and hence find themselves unprepared at once to investigate questions pertaining to this class of medical botany.

If it shall unhappily appear that this discovery cannot stand the test of investigation, we will not be utterly discouraged. We remember vividly Dr. Salisbury's article on the cryptogamic origin of camp measles†—an article which displays a warm love of discovery and a spirit of buoyant hopefulness—and we cannot but feel that, if there be any poisonous spores pervading our atmosphere, his keen eye will detect them.

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* Dr S. H. Dickson on Causation of Diseases.—"Richmond Medical Journal," Jan. '67.
† "American Journal Medical Sciences," July, 1862.

While awaiting the publication of further researches on this subject, the following objections to his theory are respectfully submitted :

1st. Dr. Salisbury declares,* "so far as I have examined (and my observations have been widely extended) I never have found a case of ague, *in situ*, where I did not find these plants ("three species of palmellæ, or palmelloid plants, one green, another red, a third lead colored") growing near; and *vice versa*, I never have found these plants growing in any locality but that (if such locality was inhabited) intermittent or remittent fever, or both, prevailed in proportion to their extent and profusion." Now the first part of this sentence is quite credible, for the place of growth of the Algæ is extremely various.† Whenever moisture of any kind lies long exposed to the air, Algæ of one group or other are found in it. Moisture and air are the only requisites in the development of this class of cellular plants. Different species may be found at all temperatures. Some flourish in the tropics, others in the temperate zone, and still others, like the red snow plant (which is of the family Palmellaceæ and is analogous in form and color to the "Gemiesma rubrum" of Dr. S., "which produces intermittents of a congestive type") find an appropriate soil on snow-capped mountains, or on the surface of polar ice. The very air which we breathe is supposed by some authorities to be the natural home of that form of vegetable life now under consideration. "It has even been supposed," says Mr. Wm. H. Harvey, of the Dublin University, from whom we have just been quoting, "that the minute Diatomaceæ, whose bodies float through the higher regions of the atmosphere and fall as an impalpable dust on the rigging of ships far out at sea, have been actually developed in the air; fed on the moisture semi-condensed in clouds, and carried about with these 'lonely' wanderers. When this atmospheric dust was first noticed, naturalists conjectured that the fragments of minute Algæ of which the microscope showed it to be composed, had been carried up by ascending currents of air, either from the surface of pools, or from the dried bottoms of what had been shallow lakes. But a different origin has recently been attributed to this precipitate of the atmosphere by Dr. F. Cohn, Prof. Ehrenberg, and others, who now regard it as evidence of the existence of organic life in the air itself! This opinion is founded on the alleged fact, that atmospheric dust, collected in all latitudes, from the equator to the circum-polar regions, consists of remains of the same species, and that certain characteristic forms are always found in it, and are rarely seen in any other place. Hence it is inferred that the dust has a common origin, and its universal diffusion round the earth points to the air itself as the proper abode of this singular fauna or flora—for minute animals would seem to accompany and, doubtless, to feed upon the vegetable atoms. If Algæ thus people the finely divided vapor that floats above our heads, we shall be prepared to find them in all water condensed on the earth. The species found on damp ground are numerous. These are usu-

* "American Journal of Medical Sciences," January, 1866, page 63.
† Wm. H. Harvey on Marine Algæ. Smithsonian Reports, 1855.

ally of the families Palmellaceæ and Nostochaceæ." One of the plainest conclusions to be drawn from these remarks is, that palmelloid plants, being spread generally over the earth, will frequently enough be found in districts where intermittent fever prevails, just as confervæ are often found under like circumstances; but while naturalists acknowledge the value of the latter plants, as respects their influence upon the atmosphere, they have heretofore never discovered deleterious effects accompanying the growth of those first mentioned. The mere fact of the existence of malarial disease in the vicinity of this form of cryptogamic vegetation, no matter how often it may occur, is no evidence of the relationship between them of cause and effect. But, on the other hand, instances may be pointed out of the prevalence of periodic fevers in places where the most scientific explorers could detect in the air neither vegetable spores nor any solid particles whatever. * "Frequently," says Dr. Joseph Leidy, "I have examined the rains and dews of localities in which intermittents were epidemic upon the Schuylkill and Susquehanna Rivers, but without being able to detect any animalcula, spores, or even any solid particles whatever. I have examined the air itself for such bodies, by passing a current through clear water. This was done by means of a bottle with two tubes passing through a cork stopper; one tube dipping into the water, the other reaching not quite to its surface. By sucking upon the latter tube, a current of air passed through the former, and was deprived in its course of any solid particles. Ordinarily, when the atmosphere was still, early in the morning, or in the evening, neither spores nor animalcules could be detected. When piles of decaying sticks or dry leaves were stirred up, or the dust was blown about by the wind, a host of most incongruous objects could be obtained from the air; none, however, which could be supposed capable of producing disease." Dr. Leidy has since stated that he has had palmellæ and many other species of Algæ growing in his chamber without experiencing from them any symptoms of periodic fever. It may be said that this is negative evidence. We reply, that is true, but if it is established, in even one case, that the febrile attacks were not caused by vegetable spores, it has become manifest that these spores are not the exclusive cause of this disease.

2. There are numerous instances of regions rich in cryptogamic growth—possessing the varieties of Algæ in the most luxuriant profusion, and yet apparently exempt from the ague poison. Such are portions of Hindostan, some islands in the Indian Ocean, the bayous of Louisiana, and the Dismal Swamp in Va.†

On the other hand, the arid, rocky island of Malta, where no vegetable growth is said to exist, is especially obnoxious to the periodic fevers. When the British army, in 1794, was decimated by malarial disease in Walcheren, it was encamped on soil consisting "of a fine white sand and about a third part clay," which supported no vegetation but stunted heath plants.‡

* Introduction to Flora and Fauna within Living Animals.

† Dr. S. H. Dickson, on the Causation of Diseases. "Richmond Medical Journal," January, 1867.

‡ Sir Gilbert Blane, quoted by Dr. Thomas Watson.

3. The statement of Dr. S., to the effect that quinia checks the multiplication of yeast plants in fermentation, seems to be incorrect.

We made the test first with Sulphatis Quiniæ gr. v., and yeast ʒi., and wheat flour enough to show plainly the process of fermentation, if it should occur. On examination, sixteen hours afterward, fermentation was seen to have proceeded just as if the quinia had not been present. The same amount of yeast (ʒi.) and flour (one teaspoonful) was tried with sulph. quiniæ gr. x., with a like result. Then twenty grains of salt were used, and finally *half a drachm* of the same to the above mentioned quantities of the other substances—but still fermentation went on as usual. The dough "rose" to the customary height, and after being baked presented the appearance of a very respectable breakfast roll. It tasted extremely bitter—that was all. On microscopic examination, the risen quinine dough presented appearances identical with those of the risen unmedicated dough, with the exception of the presence of quinine crystals.

Thus the analogy sought to be established between the action of quinine in controlling the development of the "malarial cryptogams," and its action " in checking the multiplication of yeast plants in fermentation," cannot exist—except where it would be useless to science to find it—in the author's imagination.

4. A paroxysm of intermittent fever cannot be regarded as an effort to eliminate poison from the system, because its prevention, or arrest, benefits the patient. The latter *fact* is too obvious for comment.

5. The arrest of a paroxysm by the mere application of ligatures to the limbs of the patient,* points to the nervous system as the actual seat of the disease. According to Brown-Sequard, than whom there is no higher authority, the malarial poison produces fever by a peculiar influence upon the spinal cord, and the success of the ligatures against fever and ague is due to a favorable change in a nervous centre, induced by a peripheric irritation of incident nerves.

6. In many cases of intermittent fever *there is no sweating stage,* but simply a chill and a fever. Consequently the poison is not eliminated according to the theory under consideration—yet the patient may speedily get well.

7. On the other hand, the health of the patient fails in proportion to the frequency and copiousness of the morbid diaphoresis which accompanies a paroxysm.—*Richmond Med. Jour.*, May, 1867.

Art. XIV.—*Atmospheric Influence upon Mortality at Different Ages and in Different Countries.*

M. LOMBARD, of Geneva, has arrived at the following conclusions: Cold increases mortality among newly born and very young children, and among old men in a proportion decreasing with age in children and increasing with age in the old. Heat also exer-

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* Brown-Sequard. London Lancet, Reprint. May, 1866.

cises a disastrous influence upon children of from six to twenty-four months, who die in numbers increasing as we approach the equator, in consequence of the heat. The capacity of resistance to atmospheric influences increases with age from the time of birth; it attains its maximum between twenty and forty years, from which point it diminishes with the advance of years.

Paludal emanations have great influence upon the distribution of mortality. They constantly diminish the power of resistance to atmospheric influences in such a manner that, in marshy regions, children from the age of one month to ten years die in greater numbers during the warm season; and if that influence appears inconsiderable from ten to forty years, it returns after that period with an increasing intensity, but in a contrary way; that is to say, if heat is particularly fatal until the age of forty, from that period cold causes the greater ravages, the capacity of resistance to cold gradually diminishing in direct proportion to age and with the greater rapidity as the country is more marshy and the latitude more southern.—*Jour. de Méd. et de Chir. Prat.*, July, 1867.

ART. XV.—*Influence of Artificial Lactation on Infant Mortality.*

THE use of the sucking-bottle is so extended in Normandy, that in the department of Calvados, for instance, two-thirds of the children born in the year 1865 were subjected to artificial nursing. In regard to the general mortality, it will be seen below what proportion falls to each of the two modes of nursing:

Mortality of children at the breast, 10 per cent.;
Mortality of children at the sucking-bottle, 30 per cent.

But this is not all. M. Denis Bumont makes this very judicious remark, as already stated by M. Jules Guérin, that what causes death to some, emaciates a great many more. Thus are explained the singular results brought to light by levying recruits in that province: the number exempt from deficiency in stature was only forty-seven, while three hundred and ten were invalided on account of infirmities.

We may venture to assert, with M. Denis Dumont, and with M. Jules Guérin, whose authority is so great upon this subject, that in a country where the milk is infinitely superior to that of Paris, where it approaches, in point of composition, as nearly as possible to the milk of the human breast, there must be other causes to account for the deplorable results which we have just mentioned. Among these causes we need not hesitate to place first, ignorance of the most simple rules of hygiene, persistence in fatal prejudices and absurd customs, and, above all, premature feeding.—*Jour. de Méd. et de Chir. Prat.*, June, 1867.

Art. XVI.—*Blanching of the Hair.*

A PAPER read before the Royal Society, London, by Mr. Erasmus Wilson, has thrown new light on the question as to what causes the sudden whitening of the hair, often produced by fright or profound grief. He cites a case in which the hair was colored white and brown alternately from end to end. The white segments were about one-half the length of the brown, and the two together measured about one-third of a line. Under the microscope the colors were reversed, and it was obvious that the opacity of the white portion was due to a vast accumulation of air globules packed closely together in the fibrous structure of the hair, as well as the medulla. There was no absence of pigment, but the accumulation of air-globules veiled and obscured the normal color and structure. Mr. Wilson suggested the possibility of the brown portion being the day growth and the white portion the night growth. He also said, in reference to the sudden blanching of the whole hair, of which there were many cases on record, that during the prevalence of a violent nervous shock, the normal fluids of the hair might be drawn inward toward the body, in unison with the generally contracted and collapsed state of the surface, and that the vacuities left by this process of exhaustion might be suddenly filled with atmospheric air. An interesting discussion followed the reading of the paper. Dr. Sharkey alluded to a recent case of sudden blanching of the hair reported by Dr. Landois, of Griefswald, in *Virchow's Archiv*, which was ascertained to be the result of an accumulation of air globules in the fibrous substance of the hair.—*Phil. Med. and Surg. Rep.*, July 27th, 1867.

Art. XVII.—*Influence of the Sewing Machine on Female Health.* By J. Langdon H. Down, M. D., Physician to the Earlswood Asylum, and Assistant Physician to the London Hospital.

IN this very interesting paper, Dr. Down says: "It has fallen to my lot to meet with, at the out-patient department of the London Hospital, a large and rapidly increasing number of patients who have discarded the labor of the sempstress, and assumed the business of the machinist; and I have been for some time struck with the similarity of symptoms which many of them present. So marked have been some of the features, and so frequent has been the coincidence of the symptoms with the use of the sewing-machine, that I have been in the habit of pointing out this relation to the students who have attended my practice, and have regarded the use of the machine and the symptoms to some extent as cause and effect.

"These patients for the most part complain of palpitation of the heart; of palpitation, not depending on exertion, but frequently troubling them at night, when they assume the horizontal position. They speak of severe pain in the back, the pain extending down to the thighs. Their pupils are usually dilated, and not very responsive

to the stimulus of light. They complain of supra-orbital headache, of a feeling of giddiness, and a sensation of cobwebs floating before their eyes. The eyes have diminished lustre; and beneath the orbits the skin presents a darkened hue. They nearly all complain of great debility, and it is manifest that there is existing a mental as well as a physical hebetude, betokened by the slowness with which questions are answered, and the statuesque manner of the patient; they frequently, after the examination of the pulse at the wrist, allow the arm to remain flexed for a short time in a semi-cataleptic condition. Leucorrhœa exists in nearly all the cases.

"Further inquiry being prosecuted, I found that those cases which presented the most marked features of disturbed health, were in the habit of working the machine sent out by one manufacturing house, and that the machines were so constructed that the motion was imparted by a treadle worked by the alternate up and down movement of the legs, and were heavy in their construction, being adapted for coarse work. The symptoms, which were thought to be associated with machine-working in general, were not observed among those who used machines of a lighter structure, which were worked by the flexion and extension of both feet simultaneously. I found, however, that the first kind of machine was the one in more frequent use among those who employed machinist labor, and that, consequently, a far larger number, who used the former, fell under my observation.

"While prosecuting inquiries, and endeavoring to ascertain the cause of the frequent association of the before-mentioned symptoms with sewing-machine work, I was struck with the similarity of some of the effects presented to those which my observations at Earlswood had taught me to connect with habits of masturbation. Aided by this suggestion, I was not long in discovering that the series of symptoms met with among machinists was not due to machine labor *per se*, but to immoral habits, which had been induced by the erethism which the movement of the legs evoked. In several cases the patients admitted the fact, and they recovered health on discontinuing the machine work, using cold affusion, resorting to out-door exercise, and taking bromide of potassium, with salts of iron.

"In three cases the patients were so convinced of the disturbing influences of machine labor on their health, that they resolved on adopting the work of domestic servants, and on not returning to an employment which they felt would tend to a weakened power of will, and injury to both health and morals as a sequence. They had sufficient firmness to abstain from practices which they were assured were the cause of their illness, but they were affraid to rely on their own power against the abnormal erethism which machine labor induced.

"It will be gathered from what has been adduced that, if machines are to be employed, those should be selected where the motor power is effected in a manner not liable to produce local hyperæmia.

"It is not my purpose to discuss the plan which has been proposed of interfering surgically with the integrity of the female organs. Only one case has come under my observation where operative measures had been employed, and the result in that case was not such as to lead me to expect much physical or moral good from resort thereto.

"In the majority of cases where the mental power has not been shattered, physical and moral treatment is of avail. In some cases, the sudden awakening to the fact that the existence of the practice can be discovered by others, calls to their aid a resolution which breaks the chains of habit, and effects a complete cure."—*Ranking's Abstract*, July, 1867.

Art. XVIII.—*Physical Therapeutics:* By Benjamin W. Richardson, M. D., F. R. S.

HITHERTO in these lectures I have confined myself to an exposition of the direct influence of cold on natural functions, but the facts that have been brought forward have a bearing also on some matters of therapeutical interest. I might enlarge, indeed, greatly in this direction, but not without referring to experiments which you have not seen demonstrated—a position which in these lectures I am anxious to avoid.

Unity of General and Local Anæsthesia.

Dwelling on such demonstrations as have been before us, or as may be at hand, I would first observe that there is an intimate connection of action between cold and those agents which produce general anæsthesia. Here is a solution of brain matter. I freeze it; it becomes solid, and it ceases at once to act as a conductor of force. I dry it down, and I reduce it to the same state; I add to it alcohol, and interfering with the water constituent—abstracting that, in fact, from the solid matter—I have condensation of fluid, liberation of heat, and solidification of the mass. Now the sollidified and, as it would be called in this case, coagulated mass, is in appearance like to the frozen mass, and in respect to its conducting power it is also like; in a word, the true and necessary relations of force and of matter are destroyed, and there is no conduction. When alcohol in excess is introduced into the living brain, the same changes must be induced, differing only in the matter of degree; the alcohol must seize a certain measure of water for a time, the equilibrium of force must be disturbed, and so much matter must be rendered inert, as is the case by cold. And this is really what the attendant, or rather the succeeding, phenomena testify; there is stupor of brain, and there is paralysis of power in all the organism; which symptoms last until, by the generation of more animal force from the combustion of blood, the alcohol is raised out of the organism.

There are some bodies which interfere with the force and matter of the brain in a more subtle, but not less determinate way than alcohol. I allude to those agents which can be made to reach the brain readily through the respiration by their inhalation as vapors—chloroform, ether, amylene, and their analogues. These substances carried to the vast expanse of blood surface in the lungs, and condensing to commingle with the blood, float with it to the brain and other nervous centres, and with the liberation of force in the process

of solidification of structure are directly acted upon in the brain by its force at the expense of the cerebral water, and owing to their ready expansion, with increased pressure on the cerebral substance. Thus, again there is disturbance of equilibrium of force and matter; again a condition is induced in essence the same as that produced by cold—viz., inertia of brain matter; and again follow the symptoms which are inevitable—insensibility, paralysis, and temporary death of the sentient being. Thus, when we are using chloroform as a general therapeutical agent, or when we are using ether spray as a local therapeutical agent, we are, in fact, carrying out the same physical process, with this difference only of detail, that in the first case we are separating brain from the part, and in the second case we are cutting off the part from the brain.

ACTION OF SALINE SUBSTANCES.

The action of saline substances as medicines is well explained and greatly simplified by these studies on the influence of cold. Salines have at all times been considered cooling medicines, and so-called antiphlogistic remedies; but why they should cool and allay over-action has been little inquired about. What they did has been received as matter of faith; how they did their work has been left as an impossible or even useless problem. Yet when we have before us a few leading principles, a child may understand the action of salines on animal bodies. They act, in short, only by one process, that of removing from the nervous centres and the body at large so much caloric; this they take up and augment up to a given extent their own fluidity, and as they retain the same fluidity and heat of fluidity until they are excreted from the organism, so they carry off as much caloric as they have seized, and definitely reduce the temperature. You will ask me for a visible experiment bearing upon this subject, and fortunately I can give you what you ask in a manner very peculiar and striking. I have here so much water, and I have here so much of the salt called chloride of ammonium. I now place a thermometer in the water, and the instrument tells me that the water is at 93° Fahr. I now begin to pour in the salt, and down comes the thermometer; not to lose time, I will stop when the temperature is reduced to 45°, and pass you the reduced fluid. You see clearly enough that the reduction of temperature has been due to the circumstance, that the salt has taken up so much heat of fluidity in becoming itself fluid; it has fixed so much caloric.

So far all is obvious out of an animal body; let us next go to an animal. We take a frog, and we look into the eye of the animal, and we observe a perfectly bright and transparent crystalline lens. If we killed the animal and immediately opened the eyeball, we should take out this lens to find it round, of the size of a large shot, and very clear. If we experimented, however, we should soon discover that it was readily rendered opaque and dense by cold; in fact, the lens of a frog is a kind of natural thermometer. Well, then, I have here two living frogs, and I will use them, acting on the above information, to prove by visible means the identity of action between mere cold and saline substances undergoing solution.

The first frog we will treat with ether spray until it is insensible to pain; we will then direct the spray over the eyeball, and see

almost in an instant what appears; the eye is densely cataractic, the lens having become entirely opaque. This is the direct action of cold. We remove the cold; we place the creature in a condition to recover, and as it regains its power, the dense lens will clear again as surely as the sun will rise in the morning; the lens will clear under the reabsorption of caloric. How often soever you may repeat this experiment, it will not fail you.

Now for the comparison. We take this second frog, and, instead of applying cold direct, we treat him in another way. Here is the solution of chloride of ammonium, of specific gravity 1150, to which degree it must be brought before it will act. I put into a syringe one fluid drachm of this solution, and with a fine perforated needle I throw the fluid, subcutaneously, into the dorsal sac of the animal. I watch the eye for a few minutes, and observe that the posterior part of the lens—the part first cooled—becomes dense; the opacity spreads, and in this brief time I hand the animal to you with dense cataract of both eyes. If you did not see the experiment, you would not know which of the two frogs was made cataractic by direct cold, and which by the indirect action of the saline solution. The comparison extends: If I place the second frog in water with a temperature a little above 50° and under 60°, exactly in proportion as the animal regains caloric, its powers will revive, and its crystalline lenses will of a certainty once more become clear.

It would be impossible to show with more exactitude than is shown by this experiment the identity of action between simple cold and salines. In some cases of disease, where salines of themselves are too slow in their action, they might well be supplemented by the direct action of cold, and, indeed, there is no reason why cold air should not be directly inhaled, so as to cool the currents of blood which pass over the pulmonic circuit.

USE OF COLD FOR SUBDUING NERVOUS OVER-ACTION.

Extreme cold has been applied apparently with great benefit in cases where the nervous centres are over-active. In acute mania the ether spray douche to the head has been followed by sudden quiet and refreshing sleep. In chorea the spray has been applied along the spinal column also with immediate relief to the convulsive symptoms. In this direction there is much room for new research, as one concluding experiment will prove.

We have before us a large powerful frog. We will insert under the skin the forty-fifth part of a grain of strychnia. As the alkaloid makes its way to the nervous centres, we see the tetanic convulsions duly pronounced. We have exalted the force of those centres. Let us next reduce the force. To do this I will suddenly freeze the cerebro-spinal tract, the result being, as you observe, entire cessation of the tetanus. Here is another frog in which the tetanic action has been held in abeyance by the cold for eight hours, but when the cold is withdrawn straightway the tetanus returns.

At the present moment I have no comment to make on this important experimental truth. I do not know to what it may lead, and I would not suggest the hope of its leading immediately to any new point of practice; for a man is not a frog, and by the extremest cold at my command I cannot reduce the temperature of the spinal

column, even of the dead human subject, one degree. But, for all that, there is a positive truth in our possession, that in an animal whose spinal cord can be reached, extreme cold, so long as it is in action, will stop tetanic convulsion of the intensest kind.

In October next, gentlemen, I hope to have the pleasure of continuing these demonstrations, and of being honored by seeing you here again.—*Med. Times and Gaz.*, Sept. 28, '67.

ART. XIX.—*The Inoculation of Phthisical Sputa.*

AT the last meeting of the Medical and Chirurgical Society, a paper was read by Dr. Marcet on the above subject, which, to our mind, is extremely suggestive. This gentleman, whose accurate and scientific investigations are already well known to the profession, was, at the time when the inoculation of the tubercle began to be much talked of, engaged in certain researches connected with sputa. It struck him that, as the sputa of phthisical patients usually contain tubercle, these might be introduced into an animal, and it might be ascertained whether or not the tubercle would be propagated. He performed the experiment, and cheesy masses were produced in various parts of the animals experimented on. So far so good; but, not satisfied with this result, Dr. Marcet sought to ascertain whether he might not effect the same changes by means of tubercular matter taken at an earlier stage. He accordingly introduced below the skin of a guinea pig some blood from the body of a patient who had died of phthisis. Again the cheesy matters appeared in the animal experimented on. Still further, however, for he next tried the effects of fluid from an empyema; this time, also, cheesy matters were found. Dr. Marcet proposes this plan of inoculating animals with sputa for the purpose of ascertaining if tubercle actually exists in the lungs of a patient, or if tubercle has ceased to be formed after it has been known to exist.

His experiments are of great value, though not, we think, in the way he wishes to utilize them. Let us see if they will not bear another application, and, as matters stand, probably a far more important one. We have already entered our protest against the universal application of the term tubercle to all sorts of substances in the lungs and other organs. We would limit the term entirely to the gray granulations met with along the cerebral arteries and in the serous membranes of the peritoneum and pleura. They introduced pus into the blood—in other words, induced artificial pyæmia—and the result has been caseous pneumonia; that is, the cellular product of the inflammation of the lungs (or other organ) has rapidly undergone fatty degeneration. But in Dr. Marcet's cases these masses are detected not only in the lungs, but also in the liver, spleen, kidneys, and mesenteric glands. Surely we cannot call these masses of dead degenerated matter the result of *caseous pneumonia* also, occurring as they do in organs altogether distinct from the lungs both in structure and function. Are we to conclude that this effete, worn-

out substance—dead we may call it—which, under proper conditions, may for years and years remain dormant in the system, yea, may disappear and leave little or no trace behind, contains within itself such a virulent poison that, when introduced into the system of a healthy animal, it straightway reproduces immense quantities of matter similar to itself? This we might do, provided nothing else would give rise to similar results; but when blood and purulent matter do so, we begin to have our eyes opened, and to see more clearly than before. We have said that, in at least one of Dr. Marcet's cases, the so-called tubercle was produced by inducing artificial pyæmia; so also in Dr. Andrew Clark's experiments. Now, if we are to accept the most recent views, the local consequences of pyæmia (we have nothing to do with its general effects) are produced, according to Virchow, by the breaking down of fibrinous clots, the circulation of this disintegrated matter with the blood, the choking up of minute arteries, and the consequent destruction of the surrounding tissues. In his most excellent article on pyæmia in the first volume of Russell Reynold's "System of Medicine," Dr. Bristowe admits that the more general symptoms of pyæmia may be produced by the fluid portion of the pus coming from the point where the disease originates, but maintains that the pus corpuscles have to do with the formation of local abscesses, if we may call them so, as well as the disintegrated fibrine of Virchow—nay, more, he distinctly says pus may produce cheesy masses in the lungs in the very same way as it gives rise to purulent deposits. If, then, pus acts in this way, becoming arrested in the pulmonary and other capillaries, and giving rise to caseous formations merely by stopping up the vessels, and altogether apart from any specific virus, need we be surprised that roughly broken-up tubercular masses, mixed with a little water and introduced into a wound, will act in the same way? Are we to accept specific properties for this dead degenerate body, when the best authorities admit that this specificity is not necessary to account for the changes following pyæmia? Surely not. We are not prepared to maintain that the cheesy masses so often spoken of as tubercular are the results of pyæmia; but we certainly hold that there is much similarity between the processes whereby they and the so-called secondary abscesses of pyæmia are produced. Pus or cheesy matter introduced into the blood of an otherwise healthy animal gives rise to caseous pneumonia, and similar productions of morbid material in the liver, spleen, kidneys, and mesenteric glands. Pus introduced into the veins of a man weakened by previous disease, and at the moment suffering from local inflammation of an unhealthy sort, gives rise to collections of matter, be they purulent or no, in exactly the same organs—the lungs, the liver, the spleen, and the kidneys. Is the difference between these results one of kind, or is it merely one of degree? In both cases we have congestion, with rapid proliferation of cells, and consequent degeneration; in the one case in a healthy animal, in the other in a broken-down man. There is not much histological distinction between a degenerate mass called tubercular, removed from any organ in the body, and the change which pus would sometimes appear to undergo, when its fluid portion has been absorbed and the solid part for some time retained in the system. The more intimate relations of the two conditions

we leave to others to investigate; but we think we have said enough to show the absurdity of much that has been said about the inoculation of tubercle. In this way we look upon Dr. Marcet's results as of very great value, not exactly in the fashion he would indicate to us; but, conducted by a man of so good a reputation for correctness, they are not likely to be impugned. Dr. Marcet may draw what conclusions he may like from these results. Surely we shall be allowed the same privilege.—*Med. Times and Gaz.*, Sept. 28, '67.

ART. XX.—*Movement of the Blood.* By Prof. RUFUS KING BROWNE, M. D., Late Professor of Physiology in N. Y. Med. College.

IN 1861, while making some experiments, in a series of lectures on the circulation, I was struck with the fact, that the red globules pursue the round of the circulation at a very different rate from the plasma. The first observation which induced this conviction, was that under the miscroscope some globules may occasionally be seen to await the precedence of others. This fact could not be made to accord with the supposition that the globules were simply borne along af the rate of flow of the plasma. That the part of the plasma corresponding to the line of the waiting globule, continuous with the whole volume, should hold back and restrain the globule, and participate in the rate of flow of parts beside and continuous with it, was wholly impossible to be reconciled with the ordinary supposition that the globules and plasma moved at the same rate. So, too, other similar facts, as for example the fact of the undue accumulation of red globules on the capillaries of particular regions, could not be explained on the ordinary belief. In order to understand this last phenomenon, we must assume as fact, either that the plasma can advance and leave behind the globules in a state of accumulation, or that the globules are capable of advancing at a far more rapid rate, and do themselves accumulate in particular parts. In reality, to explain the phenomenon, we must regard one or the other as facts.

It was not until the last winter, however, that I was enabled to assure myself of the exact truth of the case.

The entire column or stream of blood, it is universally believed, moves at a rate which is the same for all the contents of the bloodvessels, in any given section of the bloodvessels, during any given time, the solid bodies being borne along and moved by the plasma. But in reality the red corpuscles move in the fluid and through it at a much more rapid rate than the plasma. It is on this, as an acknowledged fact, that we can explain the great difference, in particular sections of the vascular system, of the marked variation in the proportions there of the plasma and globules, as for example in the capillaries of the lungs. First, in those portions of the blood channels, as the veins, which cannot of themselves act to forward the whole column of blood, as in the arteries, a far larger proportion of red globules to plasma in given measure can be found. This is regu-

larly the case; and is due to the fact, that there is a comparative accumulation of red globules in the veins, causing a retarded or slow movement as compared with their free progress in the arteries. This retardation can only be relieved by some accelerating force at the cardiac side of the column of venous blood. As successive portions reach the venous side cavities of the heart, and their passage into the pulmonary capillaries is accelerated by the ventricular impulse, the globules resume their usual rapid rate of flow. Between the heart and these capillaries, the unequal proportion of globules to plasma, or the excess of globules, causes the pulmonary capillaries to be crowded with them, to the comparative exclusion of plasma.

As the globules push forward at a much more rapid rate than at the section of the accumulation, through the pulmonary circuit, into the arterial cavities of the heart, the new impulse of their contraction greatly accelerates the flow of the plasma as well as red corpuscles. As a necessary consequence of the comparative accumulation of globules in advance of the arterial part of the circuit, the plasma has been retarded in the smaller arteries and capillaries, and its proportion to globules, nearly the reverse of that in the veins; but with the impulse of the heart, the volume of plasma from the cardiac to nearest the smaller arteries, has an increased rate of flow, over that still nearer the capillary system.

There are, therefore, three distinct stages of the circulation dependent on a difference in the rapidity of flow between the liquid and soft solid elements of the blood. One is in the arterial cavities near the heart, in which the blood corpuscles are fewest in proportion to the volume of plasma. It is here and at this stage, that the great disproportion between the two, up to the arterial side of the heart, has not yet been, but is being equalized by the rapid advance of the corpuscles through the plasma. This disproportion continues up to the left ventricle, when it begins to be overcome by the more rapid advance, compared to the plasma, of the corpuscles, tending to distribute them equally through the columns of the fluid. Throughout this part of the system there is no accumulation of globules, and no impending influence upon them, consequent upon it. But the rapidity of the flow of plasma slightly decreases for the liquid, from the heart toward the capillaries.

The second stage is in the capillaries, where the rate of passage of the plasma is further lowered, and that of the globules continues the same. This continues until the globules reach the venous auricles, a point at which the accumulation nearest the arterial side of the heart commences. But the accumulation already exists from this point on to the venous side of the heart. This accumulation is due to the constantly existing rapid flow or progress of the globules over the rate of the plasma, and is to be understood when we give due attention to the fact that the blood is an endless column, no part of which is a terminus, a beginning and end, and further, that the arterial flow is also an endless movement which, though variable in the part of a continuous rate, has no moment of commencing, and no moment or time of ending. Nor is this a complete statement of the necessary element of understanding the case, for as the entire, endless flow or movement has no beginning or end, none of the parts of the movement has a beginning and end, or moment when the flow, having

ceased, begins, and when ceasing, it ends. In the veins, therefore, the globules regularly have accumulated. They occupy the calibre of the vessels with a very small proportion of plasma, which cannot flow past, nor in a continuous stream through them. Their position is now in advance of the continuous stream of plasma, of which they take a gained precedence. At the same time, at the cardiac end of the venous system, the volume of blood is leaving it, to pour into the venous cavities of the heart. This is taking place at the cardiac end of what we may call the accumulated column.

The conditions here are a greatly disproportioned quantity of globules. They cannot be carried forward in this space by the plasma, which cannot gain on them, but is nearly quiescent. But simultaneously, the venous ventricle impels each of its charges forward by contraction, and the disproportion of the red globules is necessarily maintained through the capillaries of the pulmonary circuit. A new impulse is given to the whole, but the red globules again move at a more rapid rate.

In the lung circuit, or pulmonary artery and its capillaries, globules renew from the cardiac side, and increase their rate of speed in the same disproportion to plasma. They, almost alone, always crowd the capillaries of the air vesicles, which accounts for the uniformly observed fact, that they are far more numerous here in a given space, than in the arterial system or the capillaries elsewhere.

Turning into the arterial cavities, the flow of the plasma being at the lowest rate, and in fact dependent, in part, for that rate, upon the globules pushing forward, is accelerated by the heart push or pressure, from which point it again declines in rate outward, while the globules, having moved through it, become more equally proportioned to the plasma by distribution. There is, therefore, a difference of rate of speed for the fluid blood and for the cell-like elements. Nor is the rate of either uniform throughout the flow. There is, in different parts of the circuit, a difference in rate of the plasma, and a difference in rate of the globules. Acceleration of the latter supervenes on the cardiac impulse on its lowest rate of passage, and the decline of rate immediately supervenes on the accelerating impulse, a continuous gradation of movement. The lowest rate of both nearly coincides in the veins. Here the quantity or proportion of each greatly differs from that in the arteries, for the red globules are enormously in excess, in consequence of their rapid progress through the plasma. In no two parts of the system is there, however, any uniformity in the proportion of the soft-solid and liquid parts of the blood.

Though there is no point of beginning or ending for either the column of blood, nor the time of beginning nor ending of the variations in its rate, yet there is a moment when the blood is stayed on the venous side of the heart, namely, when the contraction of the venous auricle last preceding the systole of the ventricle occurs; and there is also a moment midway of the column, when the column receives a new impulse in the form of a push. Last preceding this, there is likewise a moment when the column is divided at the auriculo-ventricular line, the heart being collapsed, and no interposing force is exerted. The latter is longer than the first, for the division or separation continues until the venous cavity has time to fill and

contract. The regular recurrence of this moment of separation and lapse of cardiac pressure, has effects which we cannot yet estimate, from defects of observa ion. We can only say that there is a part of the venous hollow which collapses and contains no blood, thus making it a hiatus or hyphen in the column. This collapse must change to an open state and fill the space. But up to this time the column is divided until the pulmonary valves open and a charge passes through them, and simultaneously with this reaction of the column at that point, it is divided behind at the auriculo-ventricular valve which operates between the emptying cavity and the back column.

It appears to me plain that these facts, although I do not at present suggest all their applications, explain many morbid conditions, the obvious effect of which is evident in the accumulation of globules, and the consequent staying of advance of the globules and flow of the plasma. Under these conditions the plasma must transude through capillary walls, and collecting there, cause the nidus of abscesses, etc. But of these applications we must say something in another paper.

There can be no doubt, that the column of plasma, were the rate of the globules no faster than its own rate, would bear them along at the latter rate and not permit them to fall behind, in virtue of the fact, that a stream of fluid will carry particles along at its own rate, where they are not caught or arrested by any projection in the stream. Hence, the circumstance we named a while before, which might, through a mistake, be adduced as explaining retardation of motion of the globules could never exist, because if the red globules tended to move slower than the plasma, the plasma itself would necessarily and inevitably carry them forward at its own rate, effectually precluding their accumulation by their retarded movement, the plasma leaving behind or gaining on them. Hence, also in observing the slow, and for the instant, delayed movement of the globule back of those in advance two rows, entering the same capillary, and measuring the rate of the whole blood, by the movement of the globule, we suppose the two concurrent capillary streams, tending into a third, to be moving at different rates, but in reality the movement of the fluid portion is the same in either, but in one the red globules are faster than the other, taking precedence. This often observed incident proves that the globules have a motion not all alike, as generally supposed, being moved by the fluid column, but in reality have a movement through that column, each for itself.

The reason why there is relatively a small proportion of globules in the capillaries, is because of the enormous greater channel space in the latter than in the arteries. As they move forward to the veins, they again are limited to the greatly diminished space, and must necessarily accumulate and impede each other. In fact this regular difference in the relative proportion of plasma and red globules, implies the fact, that the one moves at a very different rate from the other. It could never occur if the globules are passive, thin, or inert bodies, moved along by the plasma, being in fact propelled by it.—(Phil.) *Med. and Surg. Rep.*, Sept. 14th, 1867.

ART. XXI.—*Enlargement of the Spleen Treated by Quinine Inunctions.*

IT is known that there are cases of swamp fever, in which the spleen maintains its increased size in spite of long internal administration of quinine. It is in such cases that hydropathy works wonders, especially when the patient is removed from the pernicious influence of the locality in which the disease was contracted.

In inveterate cases of intermittent fever the estimable practitioner of Nimes has thought it well also to resort to counter-irritation over the spleen, together with quinine employed according to the endermic method. In a work upon this subject, addressed to the Medical Society of Marseilles, and which has secured to its author the title of Corresponding Member of that Society, M. Mazel embraces under the name of counter-irritants blistering and the actual cautery.

"A blister," says he, "will often suffice, provided it be very large, very severe, and dressed once or more, according to the indication, with sulphate of quinine. Cautery will be reserved more particularly for those cases in which the above treatment, from whatever reason, would be inapplicable; for those cases in which its effects shall have proved slight, or of no force whatever, which will often happen in old cachepies, when the spleen, inordinately hypertrophied, presents a hardness almost scirrhous. The artery which creates an intense and lasting inflammation then causes a most salutary revolution."

To the support of this opinion, our *confrère* brings three observations. They are of too little importance to deduce therefrom conclusions of any great value; nevertheless, since the addition of such means is not in any way opposed to the employment of other remedial agents, we have deemed it proper to mention them, in order to give our readers the hint to have recourse to them in cases where other means fail.—*Jour. de Méd. et de Chir. Prat*, April, 1867.

Midwifery and Diseases of Women.

ART. XXII.—*Treatment of Eclampsia.*

WE will not speak upon the best treatment of eclampsia, inasmuch as the unknown quantity will not have been eliminated, which must serve as a base of rational medication upon this affection. The *pons varolii* and the *medulla oblongata* may be the point of departure for the spasmodic attack; observation proves, moreover, the almost constant presence of albumen in the urine of the subject; but these ideas throw no light upon the pathologic question, consequently none upon the treatment.

From the helplessness in which practitioners drift before this terrible malady, it follows that empiricism, controlled by experience, should furnish the foundation of their practice. It is interesting then, in this respect, to know what has, to the present time, best succeeded, and it is desirable that each physician should do in his personal sphere, what has been done in his thesis by a Belgian physician, whose researches have been cited by M. Herard before the Medical Society of the ninth district.

The author divides the different modes of treatment of eclampsia into three classes: first, the antiphlogistic method; second, the calming method; third, the mixed treatment, which embraces the antiphlogistic and the calming. From the antiphlogistic treatment have resulted two cases of success to one of failure. The calming treatment embraces the antispasmodics, such as musk, castor, etc.; the narcotics, such as opium, which has produced the best results when given in increasing doses; and chloroform, which, according to Brown, has effected seven cures in as many very severe cases of eclampsia. In short, the mixed treatment is the one which should be preferred, for, according to a physician of St. Petersburg, it succeeds in nine cases out of ten. Indeed it would be impossible to establish any reasonable objection to the use of chloroform; the only one which could be brought against it, is that it is not invariably effectual; but there is no observation which proves that its use should be proscribed.

As to premature delivery, induced as a therapeutic means, for the purpose of arresting the spasmodic attacks, accoucheurs are very much divided upon the subject, and form two very decided parties. Some, with M. Paul Dubois, think there is no advantage in hastening delivery; others, on the contrary, and Chailly was among the number, think that it is useful to effect the evacuation of the uterus, and that this circumstance may have a favorable influence upon the progress of the paroxysms.

In regard to the communication of M. Herard, a short discussion has arisen in the Society. M. E. Labbé reported three cases of eclampsia not suitable to forced accouchement; with one woman eclampsia did not manifest itself until two days after confinement, and with the two others the attacks continued eight and ten hours after the birth of the child. In one of these cases the patient died.

M. Marotte then spoke as follows: "Bloodletting has a palliative effect, when a very decided congestion or cerebral hæmorrhage renders it necessary. Chloroform seems to me to have a very decided advantage over opium; its action may be stopped at will, when the cessation of the attacks indicates the propriety, and it may be quickly resumed on any indication of renewed attacks. The action of opium, on the contrary, cannot be limited in so precise a manner, nor can it be arrested in any way at the will of the prescriber.

"Bleeding has a manifest sedative and antispasmodic effect, which must be taken into account, and it should not be considered as empirical. We read in ancient authors that they often had recourse to it, and with success, in cases of hysteria. Furthermore, attacks of eclampsia are not as sudden as is generally supposed; in numbers of cases they are preceded by appearances of congestion, which attentive observation renders recognizable. We may then afford tempo-

rary relief by taking blood. Though it may not be possible to clearly define the action of bloodletting and of chloroform, we may nevertheless say, with a degree of certainty, that they give time to the patient, and on this account it would be culpable to neglect their use."

Let us add that, aside from eclampsia, chloroform may have a very favorable influence upon the progress of labor, when the nervous system is strongly excited.—*Jour. de Méd. et de Chir. Prat.*, May, 1867.

ART. XXIII.—*Puerperal Uræmic Eclampsia.* By ARTHUR SCOTT DONLIN, M. D., Edin. M. D. Dur.

AMONGST the achievements of modern pathological investigation, there are none more important than the discovery that the genuine typical form of puerperal convulsions is the result of uræmic blood-poisoning, produced by a morbid condition of the kidneys, during the advanced period of pregnancy.

Considering the very grave and important bearing of the subject in a practical point of view, it is much to be regretted that the recognition of the correct pathology of this most formidable disease is by no means so general amongst ourselves as amongst our French and German neighbors, especially the latter, by whom pathological chemistry has been cultivated with so much assiduity and success.

But this is only evidence of the fact that the earliest original researches commenced in this country by Sir J. Simpson (a), Dr. Lever (b), and Dr. Cormack (c)—researches which, within the last twenty years, have led to the elucidation of the pathology of the disease—have been much more fully and correctly appreciated by the profession abroad than in Britain. Beyond the contributions just referred to, our own literature cannot boast of any such elaborate treatises on the subject as those of Professor Braun, of Berlin (translated by Dr. Mathews Duncan), and Professor Cazeau, in the recent edition of his great Parisian work on Obstetrics.

When it is recollected that cases of this disease but seldom occur in the experience of individual practitioners, and that yet, nevertheless, our attention is every now and then directed to fatal instances of its energy, we the more clearly perceive how important it is, in a practical point of view, that each illustration of it should be accurately and fully recorded. This reason has induced me to place on record the three following cases, which are instructive, both pathologically and practically considered.

The report of the following case was supplied to me by Mr. May,

(a) *Edinburgh Monthly Journal*, 1847.
(b) *Guy's Hospital Report*, 1843.
(c) *Medical Times and Gazette*, p 26, 1850.

of Newcastle, who from time to time during its progress supplied me with specimens of urine withdrawn by the catheter :

Mrs. G., first pregnancy. Up to the time of her labor attended to her usual domestic duties. A twin pregnancy was suspected, owing to the great size of the abdomen, which, however, was due to excess of liquor amnii. Towards the close of the gestation her legs were œdematous and urine scanty, but no facial œdema. She took aperients occasionally

On March 30, at midnight, she was seized with "fainting fits," her countenance being pallid; she seemed exhausted, and answered questions with an effort; had voided scarcely any urine during the previous day; feet and legs pitting under pressure. No headache or giddiness at this time, nor indications of incipient labor. A stimulant administered. Shortly afterwards she began to have a rapid succession of fits, with all the features of puerperal convulsions, and at 10 o'clock on the following forenoon was observed lying on her back quite comatose, as she had been for a few hours, with stertorous laborious breathing, a flushed face, puffiness below the eyelids, and a full and very rapid pulse. The late Dr. Dawson now saw her in consultation. Ten grains of calomel were prescribed, followed in the course of an hour and a half by two drops of croton oil. At 11:30, a. m., the os uteri was dilated to the size of a crown piece, and the liquor amnii discharged spontaneously. The fits increasing in frequency and violence, and the cathartics not having acted, two enemata were administered in succession, but with no effect. At 3, p. m., the fits recurring with greater frequency and violence, and the aspect of the case being very formidable, six ounces of blood were withdrawn from the arm, with the effect of checking the convulsions for a time, there being no more fits for some while afterwards. Coma not relieved. An hour afterwards the forceps were applied and a dead fœtus abstracted, followed immediately by the placenta. Coma as profound as ever; pulse 130. Cathartics now acted profusely and frequently. At 8, p. m., no improvement.

Next day (April 1) not much improved; still unconscious, but respiration easier; perspiring freely; swallows beef tea in spoonfuls, and the medicine (calomel and antim. tart.) every four hours. Bowels acting freely, and a considerable quantity of urine voided.

April 2, 11, a. m.—Much improved; skin moist; would sit up in bed to micturate; conscious to a considerable degree, replies to questions and knows her friends; still purged; some abdominal pain; lochia scanty; mustard poultices applied to the abdomen; calomel, antimony and opium continued; partakes freely of the beef tea. This improvement occurred thirty-six hours after the invasion of the disease.

3rd.—Passed a calm night; answers questions correctly; countenance more cheerful; sleeps occasionally; respiration calm and quiet; pulse 120, calm and comprehensible; voided a large quantity of pale urine. No abdominal pain nor tenderness; lochia returning; beef tea continued.

On the 5th, seized with hemiplegia, and died with symptoms of exhaustion on the 7th, eight days after the seizure, her intellect remaining clear to the last.

I carefully examined an ounce of the urine withdrawn by the catheter (all the bladder contained) prior to using the forceps; its density was 1020, pale and highly albuminous; it contained epithelium, but no tube-casts or blood corpuscles; the quantity voided on the day after delivery and following days prior to death was copious and pale colored. On the second day the albumen had greatly diminished, and on the fourth almost entirely disappeared, owing, no doubt, to the subsidence of the renal affection.

I saw the second case in consultation with Mr. May. Mrs. D., aged 26, a short, thick-set, robust young woman; first pregnancy, and near the full period; seized with a violent attack of convulsions on the morning of May 14, 1863, terminating in complete coma, which continued uninterrupted until her death. The pulse was full, strong, and rapid, 130, throbbing in the carotids. The pupils were strongly contracted; the respiration stertorous and laborious. An ounce of urine (all the bladder contained) was withdrawn by the catheter before delivery. Its density was 1020, pale-colored, and became nearly solid when examined for albumen, the quantity being so large. It contained epithelium, but neither casts nor blood-corpuscles. She was bled to the extent of about sixteen ounces at 4 o'clock in the afternoon, and afterwards delivered by the forceps of twins. Both were head presentations, and living. Cold was applied to the head, and a full dose of croton oil was administered, which acted fully. She died at 10 o'clock the following forenoon.

The following case occurred under my own observation:

Mrs. H., aged 30, a thin spare woman; first pregnancy, and at the full term; was seized on March 27, 1864, with headache, which increased until the next day, when she squinted, and became blind of one eye, and then delirious, with greatly increased pain in the head; afterwards blindness of both eyes. Early next morning (29th) she was observed sitting up in bed talking incoherently, and soon after was seized with a violent attack of convulsions, ending in deep coma. A second fit followed in twenty minutes. I first saw her when this latter was subsiding. The coma still continued; the respiration was stertorous; the pupils firmly contracted; the pulse full and rapid—125. She was placed in a sitting posture, and blood withdrawn from the arm by a large aperture. After the abstraction of 40 oz. the pulse became soft, and the vein was closed. A few minutes afterwards she opened her eyes, though still unconscious. A third fit followed the second in twenty minutes, but very much milder, shorter and attended with very slight coma. Labor had not commenced; cold applied to the head, and ol. croton. gtt. j, and pil. colocynth. et hyoscy. gr. x., prescribed.

On visiting a second time at 8, a. m., was told that an hour before she awoke and answered questions, though indifferent to everything around; and in half an hour, without warning, gave birth to a healthy boy; the placenta followed, with very slight hæmorrhage. Subsequently she had no recollection of her delivery. At this time still indifferent, but when questioned replied that the pain in the head was severe. Pulse 110, soft. At 4, p. m., quite conscious; pain in head slight; pupils not contracted, but vision imperfect.

Next day, still improving; but vision imperfect and hazy.

Next day (31st), improving; vision nearly recovered.

April 1.—Quite convalescent; the patient soon regaining her

strength and nursing her infant as if she had never been bled. In December, 1865, she was delivered of her second child without the slightest tendency to convulsions.

The blood coagulum was cupped and buffed, and the serum of the strong violent hue, considered by Frerichs and others as characteristic of uræmia.

The urine on the day of delivery was highly albuminous, and contained epithelium, but no tube casts nor blood corpuscles. At the period of convalescence the albumen had nearly disappeared.

I shall now briefly review the more important clinical features of these cases.

1. They are illustrations of the almost universal relation between the disease and first pregnancy. In the first, the liquor amnii was greatly in excess, the second was a twin pregnancy, and the third occurred in a thin spare subject of small abdominal capacity—all circumstances greatly aggravating the pressure exerted by the gravid uterus on the renal veins in close proximity behind, thus producing renal congestion and uræmia.

2. They illustrate that fulness and rapidity of the pulse are an important feature of the disease, to which sufficient attention has not been directed.

3. The pupils were strongly contracted in two of the cases (no observation having been made in one of them on this point). This phenomenon has been witnessed by Dr. R. Haldane in cases of uræmic eclampsia occurring in the progress of Bright's disease (*Edin. Med. Jour.*, April, 1865); it indicates fulness of the cerebral vessels, and is of great practical import.

These observations introduce us to the following questions:

1. What is the general pathological condition of the kidneys in this affection?

2. Should it be treated by blood-letting; and if so, to what extent and at what period?

It would be incompatible with the history of this disease and utterly untenable, to suppose that the renal affection partakes of the nature of chronic degeneration in any of its different forms constituting Bright's disease. It, indeed, appears that the only question to be decided is whether it is of the nature of chronic inflammation or passive mechanical congestion, induced by the direct pressure of the gravid uterus on the renal veins.

The following data are sufficient to show that it is not inflammation: 1st. The absence of its general and local symptoms. 2nd. The state of the urine, pale and devoid of fibrinous casts, and blood corpuscles and epithelium both embedded in them and free. This is very different from what we observe in the scanty, smoky, bloody urine of inflammatory dropsy following scarlatina.

But that there is simple mechanical congestion of the renal venous system of the kidneys is proved—1st, by the intimate relation of the disease with first pregnancy, especially twin cases, excess of liquor amnii, tight lacing, a short or spare figure with small abdominal cavity—all conditions dangerously approximating the posterior surface of the gravid uterus and the renal veins behind it, producing compression of the latter and obstruction of the renal circulation current. 2nd. The rapidity with which the kidneys resume their

healthy functions after delivery—in other words, the rapid evanescence of the disease after emptying of the uterus—as observed in two of these cases.

The individual result of these cases shows not only the value of bloodletting, but also the extent to which it ought to be practised and at what period of the attack. In the first 6 oz. were withdrawn, in the second 16 oz., but in neither until irreparable injury had been inflicted on the brain, and both died. But in the third case, although the attack was preceded by most formidable symptoms of cerebral disturbance, bleeding to 40 oz. at the onset produced the happiest result, supplemented by a drastic purgative and cold applied to the head. The indications in such cases are to subdue the force, rapidity and increase of the cerebral circulation, and to eliminate the poison with all possible speed. It is only by such remedies that these ends can be accomplished, and fatal injury to the brain prevented until the kidneys resume their function.

As an additional indication for bloodletting, I must also note the contracted pupils present in two of these cases, and probably also in the third. This condition seems to be produced, as I have said, by a full condition of the vessels of the brain. On this subject, Dr. Rutherford Haldane, in a valuable contribution on the Uræmic Eclampsia of Bright's Disease (*Edin. Med. Jour.*, p. 892, April, 1865), remarks: "It appears to be undoubted that in general the size of the pupil is an index to the state of the vessels, not only of the iris, but of the brain. When the vessels of the head are full, the iris is broad and the pupil is small; on the contrary, when the cerebral vessels are emptied, the iris is narrow and the pupil large. Thus, when an animal is hung with its head downwards, so that the vessels become turgid, the iris becomes broad and the pupil small; on the contrary, when the vessels of the head are emptied by bleeding, or by tying or compressing the carotids, the iris becomes narrow and the pupil large. In the patient suffering from acute meningitis the pupils are greatly contracted, while in the hysterical or chlorotic female they are widely dilated."

At the full period of gestation there is a special tolerance for bloodletting not found in any other condition, and this because parturition, though a strictly healthy physiological process, is in every instance attended by hæmorrhage by no means slight in degree—sometimes so severe as to produce syncope—but when not fatal, this excessive hæmorrhage but seldom indeed leaves behind any abiding anæmia, the patient generally regaining her wonted strength and vigor with surprising rapidity. Very different is the result of profuse hæmorrhage in abortion and in the non-pregnant in health or disease. It is evident, then, that Nature, according to her general law, has made special provision for loss of bloood towards the end of gestation, to meet a special emergency, rendering it innocuous. Consequently, at this period copious venesection may be had recourse to without the risk of protracted injury. This consideration seems to have been entirely lost sight of in the controversies which have arisen on the subject. I, therefore, hold that the arguments urged with propriety against bloodletting in the non-pregnant suffering from severe disease are in general quite inapplicable in the present instance. For example, the result obtained by bleeding in the

uræmic eclampsia of advanced Bright's disease would be very different from that of bleeding a robust young female seized with puerperal uræmic eclampsia.

The invasion of the disease should, if possible, be prevented by prophylactic treatment. Albuminuria in advanced pregnancy is exceedingly dangerous, and should be treated accordingly by cathartics and other measures to establish a vicarious excretion to compensate, as far as possible, for the deficient action of the kidneys, and every article of dress compressing the abdominal parietes removed. But, in any case, should those characteristic premonitory symptoms so frequently ushering in uræmic eclampsia—such as disordered and imperfect vision, tinnitus aurium, pain in the head, vertigo, and an accelerated pulse, etc.—begin to present themselves, the only remedy on which reliance can be placed to prevent the seizure is bloodletting.—*Med. Times & Gaz.*, Feb. 23, '67.

Art. XXIV.—*Affections of the Bladder in Women:* By George T. Elliott, Jr., M. D., Professor of Obstetrics and Diseases of Women and Children, in the Bellevue Hospital Medical College, and Obstetric Physician to Bellevue Hospital.

IT is probable that many diseased conditions of the bladder in women do not receive the attention which their importance demands, and that their earlier and most curable stages are too frequently overlooked. This neglect prominently acknowledges four causes :

First. The great frequency of irritations of the bladder in women, due to reflex influences and to sympathetic disturbances with physiological and pathological states of the adjacent pelvic organs.

Second. The natural reluctance of women to call attention to difficulties in micturition until they result in serious inconvenience.

Third. The comparative infrequency of vesical calculus in the female, which detracts from the semeiological value of symptoms of greater importance in the male.

Fourth. The tendency of the times to fix the attention of so many practitioners too exclusively on uterine disorders, when relief is sought for disturbances of the bladder or other pelvic organs.

While women enjoy a comparative immunity from some of the most frequent causes for diseases of the male bladder—as stricture of the urethra, diseases of the prostrate and calculus—they yet suffer from many peculiar to their sex. Displacements of the non-gravid and of the gravid uterus may occasion every variety of disorder, from simple irritability and hyperæsthesia, to complete retention of urine and disorganization of bladder. Many of the cases of retention from displacements of the gravid womb, in the earlier months of pregnancy, occur from sudden shock and consequent dislocation; but it is probable that many more acknowledge the aggravation of preëxisting displacements of the non-gravid organ.

Loss of tone in the vagina; partial or complete destruction of the perineum; increased weight of the uterus, or abnormal pressure thereon; too great size or diminished obliquity of the pelvis; those influences, in short, which, separately or in combination, cause the bladder to sag into the pelvis, facilitate the occurrence of subsequent unmistakable displacements, or determine—perhaps gradually, perhaps suddenly—those evil effects so well recognized in the male bladder as resulting from the retention of urine, both in cases where none is voided except *guttatim*, and in those where no suspicion of retention is entertained until the appearance of the urine, on the introduction of the catheter, after micturition, demonstrate the fact. In many of these cases, however, women instinctively obviate these tendencies by assuming positions which facilitate the evacuation of their bladders, or replace the cystocele well within the vagina before the attempt.

Physiological congestions at the menstrual period; the mechanical and the physiological influences of coition and of pregnancy; the mechanical and pathological influences of those tumors peculiar to the sex, which have their *habitat* so generally in the pelvis, before they are forced by their development to expand within the abdominal cavity; the peculiar tendency to pelvic cellulitis, to hæmatocele and to irritable tumors of the urethra; the sluggish bowels and their fæcal accumulations; and the phenomena which attend natural and forced delivery through all the stages of gestation, are farther examples of conditions peculiar to the sex which specially influence the functions and diseases of the female bladder; and the wonder grows, not so much with the comparative frequency of the causes of disease as with the immunity from their effects, so widely enjoyed as to have led to frequent neglect of the diseases themselves.

No abdominal or pelvic tumor in women should receive attention before the practitioner has introduced a long, flexible male catheter, from six to nine in number, so fully within the bladder as to demonstrate the impossibility of failure to reach its contents. If no urine whatever drip from its orifice, there is good reason for believing either that the contents of the bladder are not reached, or that the caliber of the instrument is so diminished at some point that the flow of the urine is mechanically prevented. By changing the size of the instrument, by bringing the woman under the influence of an anæsthetic, and by pushing up the presenting part in labor, I have often evacuated a bladder which had seemed on previous trials to be empty. It would be better for women if the ordinary silver catheter had never been invented. The frequent statement of the beginner, that he had introduced a catheter during labor, and that not a drop of urine had escaped, should at once throw doubt on the thoroughness of the manœuvre. By neglecting the bladder during labor, the practitioner may not only become responsible for the resulting atony, but for those catarrhs and inflammations, and those *post-partum* hæmorrhages which depend on retention.

After labor and delivery of the placenta, the distended bladder crowds the uterus upward and backward, prevents its due contraction and subsidence toward and partially within the pelvic cavity; and hence the relaxed and distorted organ may flood the vagina and the bed, may escape the manipulation of the accoucheur, and may

remain a source of danger until the evacuation of the bladder removes an obstacle to contraction. Those who are properly educated in the only safe method of following down the contracting uterus with the hand, will recognize the distention of the bladder before they leave their patient; but in the hæmorrhages, which may occur some hours afterward, the state of the bladder must receive prompt attention.

There are no conditions more liable to mislead a practitioner, alive to the risks of retention of the urine wholly or partially within the bladder, than those associated with malingering or hysteria in women.

Hysterical patients may be as incapacitated for evacuating their bladders as the paraplegic; but these are the exceptions, and in most cases the desire for the catheter grows with its use. It is occasionally very difficult to draw the line between the two conditions, and the hospital patient will occasionally retain her urine for a period of time suggestive of a doubt as to the diagnosis. Once in a while, such cases have come under my observation. One recurs very clearly to me, in which, after a careful diagnosis, I directed that the catheter should not be used again; and it was disagreeable to maintain the resolution in presence of the subdued and piteous expression of the patient, which elicited the sympathy of the ward. But by succinctly stating, as a final judgment, that I would be responsible for the fact that "the bladder could not burst," the struggle ended in my triumph; and, to my certain knowledge, the patient experienced no ill effects.

Foreign bodies are more frequently introduced into the female than the male bladder; hair pins, and other articles found convenient for the refinements of masturbation, or for developing conditions demanding treatment, are not rarely proven to be the sources of vesical disorders and calculus in women.

Prof. Van Buren possesses a calculus the size of a hickory-nut, sent to him by Dr. Taylor, of Memphis, which had been formed around a portion of the althea root, used among the lower classes in the South for what is called "dipping." The stem is *in situ*, perforating the calculus.

Catarrh of the bladder and of the vagina often introduce errors in the diagnosis of conditions of the bladder in women. They may cause the admixture of albumen and of blood, and a very mistaken prognosis. Of this fact I have known many examples, and vesical catarrh is not infrequent in the pregnant women of Bellevue. It sometimes happens that these attacks are very severe, both in the puerperal and non-puerperal states, and the cystitis may demand local treatment by injections of a mucilaginous, sedative or alterative character.

One very young woman entered my wards some years ago, for gonorrhœa and cystitis, whom I believed to be in the early months of pregnancy. The gonorrhœa and cystitis yielded to treatment, and the pregnancy advanced to term, notwithstanding the amusing pertinacity of her denials as to its existence.

It is fortunate that we can assign cystitis in women to so many causes, as we can thus allay or prevent suspicion in families. Two of the severest attacks of cystitis in women that I have seen end in

recovery were in married women whose husbands came under my care for gonorrhœa, with full confession of their fault. In another interesting case of gonorrhœa and cystitis occurring in my wards, the progressively inflamed and enlarged ovary could be readily distinguished through the vagina. Recovery followed, with no evicences of serious trouble, and the interest of the diagnosis relates only to the cause of the disease.

In 1851, I was a private pupil of Cullerier's *interne* in the Hôpital de L'Ourcine, in Paris, where the test for gonorrhœa chiefly relied on was the existence of a urethral discharge, capable of being pressed out by the examining finger—a test which would be very unjust to many women.

Inflammations and extravasations into the tissues of the pelvis of women lead more frequently to the evacuation of the products of inflammation through the bladder than in men; and the suggestion has been entertained of puncturing tumors with fluid contents through the vesical walls; while the uterine cervix has been purposely, and not infrequently, sewed into the bladder in Sim's operation for vesico-vaginal fistula. The same operator has led the way in removing calculus from the female bladder through the vagina, and in relieving the intolerable sufferings in some cases of chronic cystitis in women—so vividly described by West—by incising the vesico-vaginal wall and creating a fistula. Dr. Emmet's experience with the operation has led to the singular observation that some women are averse from submitting to subsequent cure of the fistula, from dread of a recurrence of sufferings which they cannot forget.

Prof. J. R. Wood informs me that nothing is more marked than the immediate relief given to some of his worst cases of chronic cystitis in the male by the median incision.

Acute cystitis in the virgin is rare, and very apt to be neglected in its earlier stages. In one of my published cases, a virgin with an imperforate hymen and great distension of the vagina, from accumulated menstrual secretion, had not passed water for forty-eight hours before admission into the Hospital, though she had been seen by three physicians during that time. The bladder contained fifty-three ounces of bloody urine. I evacuated the menstrual fluid by incision, and the patient died on the fourteenth day afterward, having meanwhile recovered from a severe attack of peritonitis, and been able to walk around the ward. The autopsy showed, among other remarkable facts, that the vesical, mucous and muscular walls were softened and very deep in color; that the mucous membrane was absent in places, that a portion of the ileum was adherent to the fundus of the bladder, and that minute perforation in one organ corresponded with minute perforations in the other Right kidney contracted and fatty, pelvis and ureter greatly distended and containing pus. Left kidney large and fatty; ureter and pelvis normal.

My colleague, Professor I. E. Taylor, has recently operated successfully in a similar case in the Hospital, where no vesical irritation had been present.

A very interesting case of cystitis in a virgin came into my wards last fall, and the results of the autopsy were shown to the class in attendance on my clinical lectures.

Case . . —H. I. Single, unmarried, aged 23, native of New York, admitted to Bellevue Hospital, September 11th, 1866. The patient is well built, and states herself to have enjoyed perfect health until six weeks before admission, when she suffered from unexplained retention of the urine for twenty-four hours. There is no suspicion of tubercular tendency. These disturbances then ceased entirely for a fortnight, when she began to suffer from lancinating and bearing-down pains in the pelvis, which have been so severe during the past fortnight as to keep her in bed. During this time, the urine has constantly dribbled from her, and her bowels have been much confined. About three weeks ago, she noticed a tumor in the hypogastric region, which has been gradually increasing in size. When admitted, the expression of her face was haggard and of unfavorable omen. Skin cool, pulse small and frequent, tongue heavily coated with a brown fur. Vomits frequently. There was a hard, smooth tumor just above the pubes, reaching half-way to the umbilicus, broader below than above. This was somewhat tender. Vaginal examination detected a moderately retroverted uterus and a hard, bulging tumor on the anterior wall of the vagina. Three pints of bloody and very offensive urine were drawn by the catheter, when evidences of pericystitis were recognizable through the anterior wall of the vagina, especially toward the outlet. Twelve hours subsequently, a pint and a half of bloody and offensive urine were withdrawn by the catheter, which contained blood corpuscles, pus corpuscles and quantities of vesical epithelium. The patient entertained a horror of the catheter, screaming in the most piteous manner from the pain of the gentlest manipulation; still the catheter was used much more frequently, and the bladder washed out with medicated injections Warm poultices were kept on the abdomen, the skin excited by the hot-air bath, and stimulants were given. 16th. Urine less fetid and bloody, and somewhat diminished in quantity. Surface cold and blue. Scarcely any pulse at wrist. Pers stent vomiting. Intellect clear. 17th. No marked change, except that she is growing obviously weaker. Beef tea and whisky given by enemata. Urine less fetid and much diminished in quantity. She steadily continued to sink, and died at 7, a. m., of the 20th, having survived much longer than had been anticipated from the symptoms of collapse.

The autopsy was made six hours after death, in the presence of Dr. Van Buren. On opening the abdomen, some coils of small intestine and part of the omentum were found attached by adhesion to the posterior and superior portion of the bladder; slight adhesion of the walls of the Douglas cul de sac; the connective tissue between the pubes and the bladder much thickened; internal surface of the bladder very greatly congested, thickened, softened, of a dark color, and presenting in portions a gangrenous and a pultaceous appearance; ureters normal, kidneys much congested, especially in the pelvis of the left; and the results of peri-nephritis were shown in a number of small abscesses which surrounded the right kidney, the capsule of which was thickened.

The tolerance of the bladder, in cases of retention, and its capacity, excite our surprise at all ages of life, and in both sexes. Mr. Fearn found that a distended fœtal bladder which had proved an

obstacle to labor, could be proven to contain two quarts of fluid. Mr. R. L. Johnson was consulted by a woman, six months pregnant, from whose bladder he drew nine English pints of urine with a catheter; being obliged to apply a bandage, as in tapping for ascites, and to administer stimulants from extreme prostration. The patient did well, and carried her child to term.

I drew off one hundred and forty-four ounces of urine from the bladder of a woman in Bellevue, with retroversion of an impregnated uterus—exactly nine pints by wine measure—and replaced the uterus without the supervention of a single unfavorable symptom; and have seen another pregnant woman die from neglect of the earlier stages of the retention. A marked illustration is given in the *British and Foreign Medico-Chirurgical Review*, in a man of sixty-three, where no obstruction existed to the escape of urine. Fourteen English pints of urine were withdrawn by the catheter. The bladder was found to contain two large diverticula, and to be shaped like a miter.

The theme is one which offers temptations in every light in which it is contemplated, but the purpose and the limits of the paper are best attained by reënforcing the suggestion that in these days of widely extended uterine investigations, the conditions of the bladder in women scarcely receive that early and constant attention which their importance and frequency deserve.—*N. Y. Med. Jour.*, April, 1867.

ART. XXV.—*Weaning.*

WEANING is a subject of little importance, if we may judge from the very limited attention given to it by medical writers. One looks over "the books" and journals in dismay, when he would give an answer to the common question, "when shall I wean my baby?"

There are some young mothers who willingly stop nursing at the very earliest moment they can have the doctor's sanction for it, and are still better pleased if they are advised not to allow the breasts to be drawn at all. There is a much larger class, who, for various reasons, wish to nurse as long as they can; and, therefore, always represent their health, in reference to lactation, to be quite as good as it really is.

There is need that we have an opinion in this thing; and if the practitioner would decide wisely between the tendency to too little, and the tendency to too much nursing, and be ready to exert a controlling influence "on a subject that is oftener made a matter of convenience than of principle," he should have in his own mind some settled maxims or some definite plan.

The habits of life in the family, the customs of society, and the methods of education, as it is called, under which women are now

brought up, seem to be cultivated, as with a set purpose, to incapacitate them to nourish their own offspring; and this is true to an extent that is beyond description and deplorable in the last degree. In the practices of society touching the education of girls, there is hidden, but yet not half concealed, a conspiracy against infant life, more widespread and more fatal than the decree of Herod of old. To prolong lactation, with such material for mothers, is cheating ourselves and the child, unintentionally, but none the less really, and is injuring the mother; and it ends too often in that formidable condition of mind and body, described by Copland under the head of "undue lactation."

It is often said that, if a child is not vigorous, its weaning should be delayed, if possible. I cannot but think that this view of the question has been held up too much, and has often led astray. In our anxiety to sustain a sickly child (too often an only one), we forget to scrutinize carefully enough the mother's condition. Many an infant has, by advice, been carried into the hot season, tugging at a breast likely to fail it in the time of its extremity, and, therefore, absolutely more dangerous to its welfare than all the hazards of an earlier weaning.

If a child has been fed at the breast for months, and is only poorly, it is but fair to inquire carefully into the mother's condition, especially as to the quantity and quality of the milk, for it is probably quite time that the child be weaned, or put to another nurse. At any rate, let there be caution how lactation is prolonged *because* the child is not doing well. "Small and weakly infants," says a writer seventy years ago, "if rather feeble than ill, are oftentimes benefited by being weaned; they should, therefore, about this age (12 months) be taken from the breast, instead of being, on account of weakness, nourished much longer in that way; a trial of such a change should at least in most instances be made."

But I must confine myself (for the sake of your patience) chiefly to these two topics, viz.—At what age, as a general rule, should a child be weaned, and at what season of the year?

Dr. Copland says: "The termination of the period of lactation becomes necessary when the infant is sufficiently old to be fed by many of the usual articles of diet, when it is from eight or nine to fifteen months old, and when it has four or six teeth, or more."

Dr. Maunsell says: "The time of weaning should be that indicated by nature, that is to say, between the seventh and twelfth month, in ordinary cases; when, by providing the child with teeth, she furnishes it with the means of obtaining nourishment from substances of a somewhat solid form."

Dr. Donné says: "It is ordinarily about the age of twelve or fifteen months that weaning should take place."

Dr. Tanner says: "The proper time for weaning healthy children is between the ninth and twelfth month."

Dr. Dewees says: "When the child has arrived at the eleventh or twelfth month of its age, it is generally thought to be sufficiently advanced to be taken from the breast."

Dr. James Jackson says: "Children are benefited by living principally on the breast for twelve months."

Sir John Forbes says: "The time of weaning ought to be determined chiefly by two circumstances—the health and state of the mother, and the development and health of the child. When the health of the mother continues perfect and the supply of milk abundant, weaning ought not to take place until the development of the teeth shows that a change of food is required. This usually happens about the ninth or tenth month."

Dr. James Stewart says: "As a general rule, the child ought not to be kept at the breast beyond a year; it may also, in the majority of instances, be weaned about the ninth or tenth month."

Dr. Gream says: "The child may be weaned between the eighth and tenth month."

Dr. Underwood says: "We shall not be very wide of the order of nature, if we say that a child ought not to be weaned much earlier than a twelvemonth old."

Dr. Condie says: "The proper period for the child to be taken from the breast may be stated, as a general rule, to be at the end of a year."

These are all the authors I have seen.

But I have additional authority in the testimony of members of this Society, whose wisdom and experience must not be lost. The first says: "I think a full year as good an age as any for weaning. I have known and directed children to be weaned at almost every age, and they have done well. Various causes may exist which render it necessary; as, for example, deficiency of nourishment on the mother's part, difficulty in assimilating the milk on the part of the infant, pregnancy or failing health in the parent; or any combination of circumstances, when it is apparent that the child or mother is not thriving. In many of these cases a wet-nurse is the best substitute; but if, for any cause, not procurable, I do not hesitate to advise weaning, if I can depend on the judicious management of the mother or attendants in the matter of quantity and quality of the food, and attention to the cleanliness of the utensils in which the food of the child is prepared."

Another says: "My rule with regard to weaning has been something like this: If the child is near a year old in May, the first part of the month, is healthy and well advanced in teething, I allow weaning; but if not, I advise nursing till after dog days. I do not like to have a child getting its teeth at the age of fifteen to twenty-one months, in July and August, *recently weaned.*"

The third says: "The first consideration is the health and well-being of the mother, as her life is the most valuable, and should not be put in jeopardy. If she bears nursing *well*, it may be continued from twelve to eighteen months, the time of weaning to be regulated by the condition of the child and the season of the year."

The fourth says: "A child should be weaned, as a general rule, when it is from nine to twelve months of age."

The fifth says: "A healthy child should be weaned at the age of one year."

The sixth says: "I should say nine months, supposing the child to be vigorous and healthy."

The seventh says: "Theoretically, nine months is the proper time; practically, seasons taken into account, nine to twelve months (or a few weeks more in exceptional cases), is quite the *reasonable* period."

The eighth says: "My impression is that it is well to nurse children more than one year; but we must be governed somewhat by the appearance of the teeth. As you are seeking the opinion of the experienced, I will add that I recollect once hearing the late Dr. George Hayward say that, in children of scrofulous tendencies, the disease was likely to be developed under prolonged nursing."

The ninth says: "I believe it is best that a child should be weaned at from ten months to a year old. It is not unfrequently an injury to both mother and child to continue lactation to fifteen or eighteen months."

I have one more authority on this point, and it is one of much value, because it represents British medical opinion, and fixes the term of lactation independently of the condition of the mother. Before Victoria's first born appeared, Sir Joshua Waddington prepared a code of rules for the government of the royal nursery, and they were approved by the medical staff of Her Majesty. In these rules it is declared, that it is generally advisable that an infant be weaned "at the age of nine months."

The best average I can make, from all these authorities, gives almost eleven months as the approved term for lactation. But eleven months is a longer period than I would have, as a rule, in the present state of society. Children weaned at nine months do as well as those weaned at twelve months, for aught I have discovered. And if we fix nine months as the proper term of lactation, one, two or three months will, in many instances, be added to it, from a variety of causes; and if a longer term than nine months is named, just as much will be added to that, and lactation will be prolonged to a very doubtful period.

I suggest nine months—not as prefigured by gestation, nor by anything else, but—simply as the reasonable term for nursing.*

In support of a shortened term of lactation, I have an impression, strong enough to influence me a good deal, that children nursed beyond one year—above all for two years—are not as likely to do well as those weaned earlier; and that scrofulous or puny children are not benefited by an extended term of nursing, especially of their own mothers; and, on the other hand, that mothers are generally benefited by a brief term of lactation.

The advancement of the teeth is generally made an item in deciding the question of weaning. The age for the development of the canine teeth—the most dreaded period of dentition—is about the eighteenth month, and to wait for the appearance of these teeth would be to establish an unreasonable term of lactation.

On this point of the importance of the development of the teeth, writers are very indefinite; and each writer who does specify what teeth he would have the child exhibit at the time of weaning, states

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* Since this paper was read, a studious friend has sent me the following: "It is generally recognized that the healthiest children are those weaned at nine months complete. Prolonged nursing hurts both child and mother; in the child, causing a tendency to brain disease—probably through disordered digestion and nutrition; in the mother, causing a strong tendency to deafness and blindness. It is a very singular fact, to which it is desirable that attention were paid, that in those districts of Scotland, viz., the highland and insular, where mothers suckle their infants fourteen to eighteen months, deaf-dumbness and blindness prevail to a very much larger extent among the people than in districts where nine and ten months is the usual limit of the nursing period.—DR. WM. FARR *on the Mortality of Children.*

that children usually show the specified teeth at about the age he has named as the fit time to stop lactation; so that in fact the cutting of the teeth comes to be a part of the cautious theory, but is in reality of very little consequence in deciding whether a child should be weaned or not.

Practically, children, like some adults, get on comfortably with few teeth or even none. And I have long inclined to the opinion that the late development of the teeth is not unfavorable to the well-being of the child. This opinion will, perhaps, be sustained. In defence of it I cannot here enlarge, but will mention the facts in one family. Two brothers, the only children, now seven and nine years old, and always in good health, were both weaned, of necessity, before they were nine months old; neither child had a tooth till full fifteen months old, and both had a very easy dentition.

But to our second topic: at what season of the year should a child be weaned?

The writers who have condescended to treat of weaning, say very little about the season of the year. Tanner and Copland, Stewart and Underwood, Gream and Maunsell, say nothing about it. Dr. Donné (writing in Paris) says: "Season is of little consequence for children that are well and of good constitution."

Dr Condie says: "Spring or autumn should invariably be made choice of for the period of weaning."

Dr. James Jackson says: "The safest period for weaning is from the middle of October to the middle of March; provided they be not weaned under ten months after December, under eleven after January, nor under twelve after February."

Dr. Dewees divides the year into three periods for weaning, viz., the convenient, the inconvenient, and the improper season. The moderate months, March, April, May, June, October and part of November, are the convenient season. The cold months, part of November, December, January and February, are the inconvenient season. The hot months, July, August and September, are the improper season.

But, on this point of the season of the year, I have the privilege to introduce again the testimony of my associates.

The first says: "On this point I have not much hesitation; I prefer October. The nights are not then too long nor too cold. It is much easier, therefore, than later, and in the winter. I think better for the child, inasmuch as it gives a much longer period for it to become accustomed to its new food before the approach of the hot weather renders it prone to those gastric disturbances which so often end in cholera infantum."

The second says: "I never advise weaning in July, August or September, if not obliged to do so. I generally, so far as *the child* is concerned, advise—if the age, state of health and stage of teeth are favorable—the weaning of a child in April or May, or waiting until October or November, as near as may be."

The third says: "If a child is not more than a year old in the spring, it should be nursed until the middle of autumn, which is the best season for weaning. If the child is one and a half years old in the spring, in good health, and having the usual supply of teeth at that age, it should be weaned."

The fourth says: "At any time except in the months of July and August, in which if children are weaned they are liable to be attacked with bowel complaints. Ladies rather prefer the early part of June and the last part of September, and avoid, if possible, the extreme weather of winter."

The fifth (with characteristic brevity) says: "Either after the warm season has passed, or before it has commenced. Of the two, I prefer the former."

The sixth says: "A child should not be weaned between the first of May and the middle of October following. This is my general rule, but there are cases which forbid its adoption. When the mother's health or the digestion of the child requires weaning, the season of the year is not to be considered; but in such cases greater care will be required for the preservation of the health of the child. If a child be a year old on the first of May, he should be weaned in April; if after that, he should nurse till October."

The seventh says: "For myself, I always advise postponing weaning, otherwise suitable, till the winter months commenced, or at least till the middle of October, when circumstances required earlier than the first named time. For instance, a child has reached nine months in the middle or last of summer; I advise deferring weaning (complete weaning) till November or December, if mother and child *agree*. That is, I prefer a few weeks, or months, longer than nine months, to a complete change in summer or fall. Weaning after the end of February always seemed to me to be more risky than before that time—a few more weeks of age not compensating for the greater risk."

The eighth says: "As to the season of the year, we should avoid those months when diseases of the bowels prevail. If I saw any good reason to advise weaning, I should not be prevented from doing so by the consideration of the season."

The ninth says: "The season most favorable for weaning I believe to be from the last of October to the middle of December. Next to that I prefer first, January; secondly, February; thirdly, March; fourthly, April; in short, giving preference to the months in the order in which they are remote from the next hot season, when children who are not accustomed to feeding, are so much more liable to obstinate diarrhœa and cholera infantum."

The testimony now presented, both of authors and of associates, is strong and decisive against weaning in hot weather; and it points clearly to the late fall as the best period for weaning.

The suggestions of Dr. Dewees, spoken of before, which divide the year into a convenient, an inconvenient and an improper season, were based on a large and careful observation, and are well worth remembering. If we look, however, for a formula on the season, we shall hardly find anything more concise than the words of one of our number already quoted: "Either after the warm season has passed, or before it has commenced. Of the two, I prefer the former."

But in this evidence some doubt appears about weaning in the spring.

I will only add, for myself, that (so strong is my conviction that much nursing is not well borne by the mothers of this day) I would not hesitate to wean in the spring. If a child is nine months old

early in May, I would advise that it be weaned, unless its mother exhibited uncommon capacities as a nurse. But each case of weaning, like each case of sickness, is to be considered and managed by itself, and not to be disposed of in rigid accordance with any fixed rules or maxims.—*Bost. Med. and Surg. Jour.*, May 2, 1867.

Materia Medica and Pharmacy.

ART. XXVI.—*Sulphite of Magnesia in Zymotic Diseases.* By H. R. DE RICCI.

IT is now upwards of two years since I last published, in the pages of this Journal, the results of my investigations in the treatment and prophylaxis of zymotic diseases by the administration of the alkaline and earthy sulphites, and especially by the sulphite of magnesia; but, although my pen has so long been silent on this highly interesting and most important branch of therapeutics, it is not because I have relaxed from my labors, for I still have diligently pursued my investigations, administering the sulphites on every occasion in which I thought they would be productive of good, and carefully noting the effects. I have also collected, from different sources, the results of sulphitic treatment, both in Europe and in other parts of the world, and in the hope that this information may eventually be of service to medical science, I beg to lay it before my professional brethren.

I regret to find, upon inquiry, that up to this date the treatment by sulphitic salts has found but few disciples in these islands, a fact much to be regretted, as those few who have tried this remedy in appropriate cases have almost invariably been satisfied with the results. No doubt the treatment has been in many cases unsuccessful, often in consequence of the administration of wrong preparations; and, besides, I do not presume to assert that every case of pyæmia, puerperal fever, scarlatina, or other zymotic affection, will be cured by the administration of sulphite of magnesia, but I do assert that a great majority of such cases will recover under this treatment, if the remedy be only taken sufficiently early. I say, if taken sufficiently early, and it will be easily understood why I insist on early treatment, because, if in a case of zymotic disease, of whatever species, the treatment is delayed until the blood is so loaded with poison, so deteriorated in quality as to be no longer able to perform its normal functions; such a case, if treated by sulphites, is no more likely to recover than if treated on any other principle, or without any principle at all, or let alone to the *vis medicatrix naturæ*; the blood being thoroughly poisoned is incapable of maintaining life; and though the sulphites may be administered, and though they may arrest the further propagation of the poison by neutralizing or by rendering the blood incapable of being infected, still they can never restore to life the defunct blood corpuscles; and if, in a given case, the destruction of these most important organisms reaches an amount such as to leave an insufficient quantity of healthy blood corpuscles

to carry on the normal functions of organic life, death must be the result. If, for instance, we assume that at least 50 per 100 of normal blood corpuscles is the minimum quantity which will enable an animal to exist, and that in a given case of zymotic disease the destruction of these corpuscles reaches 60 per 100, such a case, even though saturated with sulphites, would of necessity end fatally, because, although the existing poison would be neutralized, and its further increase put a stop to, yet the amount of healthy blood remaining would be insufficient for maintaing life, and death would be the inevitable result. Hence the importance of early treatment, of early administration of sulphites, while still a large portion of the blood is in healthy state, and capable not only of carrying on life, but also sufficiently strong to throw off the poison, now rendered inert by the presence of the sulphurous acid. To the tardy administration of the sulphites I, therefore, in part ascribe their want of success in many cases in which they have been tried in these countries. Another cause of failure I attribute to the administration of *hyposulphite of soda*—instead of the sulphites, and especially sulphite of magnesia—which, on inquiry, I find to have been the salt most frequently employed. I have long ceased to employ the hyposulphite of soda, and for the last two years have invariably administered the sulphite of magnesia; and this for three reasons: Firstly, because when administering hyposulphite of soda the greater portion of the acid becomes oxydized, during its progress through the animal economy, and appears in the urine as a sulphate; Secondly, because it is a salt of hyposulphurous acid, and, as such, a less active anti zymotic; and Thirdly, because it often causes troublesome diarrhœa, while the sulphites of soda and magnesia never produce such effects. Now, of these last two, I prefer the magnesian salt, and employ it exclusively for internal administration, as, not only, it is less unpalatable, owing to its insolubility, but in consequence of the atomic weight of magnesia, it contains bulk for bulk more acid than the soda salt; and, as the acid is the active ingredient, it stands to reason that the magnesian salt must be the most efficacious of the two; the sulphite of soda I employ, almost exclusively, for external applications, because, in consequence of its great solubility, a much stronger lotion can be made with it than with the magnesian salt. The sulphites of potass, ammonia, and lime, are also active anti-zymotics, but in no way superior to the salts of magnesia and soda, while their very noxious taste renders them undesirable.

It is very much to be regretted that so few physicians have brought the value of these remedies to the test of clinical experiment, by which, after all, every remedy must be tried, and stand or fall by the result. As I several years ago asserted, this remedy is perfectly harmless; it is not like arsenic, mercury, iodine, or strychnia, a double-edged instrument, equally able to save or to destroy; neither is it one of those remedies which can only be administered in fractional doses, and of which a grain more may endanger the life of a patient; I have myself taken six drachms of it in twenty-four hours without any evil result, and I never have had to prescibe more than half an ounce of it in practice, even in extreme cases; I cannot, therefore, conceive why a more extended trial of its properties has not been made. Perhaps it may be thought by some that I exaggerate to myself the result

of my treatment, and that I naturally feel biassed in favor of a remedy that I have so prominently brought into notice during the last few years; be it so; let my experiments on animals be forgotten, and the results of my treatment of the diseases in man be ignored, still the important paper of Dr. Cummins on Scarlatina, *Dublin Quarterly Journal*, No. 77, p. 11; the observations of Dr. Waters in same Journal, and the paper on Diphtheria by Dr. Hayden in the some Journal, No. 83, p. 86, go far to prove (even if we had no other evidence) that we possess, in the sulphites, a powerful agent, whose action in the animal economy well deserves to be studied.

The following case will be read with interest: Last winter I had under my care a gentleman, over eighty, who was suffering from the most aggravated form of pompholyx diutinus I ever witnessed. The bullæ daily appeared all over his body, principally affecting the lower half, and varied in size from a millet seed to a hen's egg; when first they cropped out their contents were clear; but in twenty-four hours became turbid, then opaque, and the raw surface, which appeared when the bullæ burst, remained long unhealed, and discharged an acrid bad-smelling pus.

The patient had been for some months in this state, and was gradually getting worse, when he came up from the country and placed himself under my care; every variety of treatment having been tried, both locally and constitutionally, without obtaining any beneficial result, I determined, in consultation with Dr. Hudson, on placing the patient under a sulphitic treatment, in the hopes of arresting the further increase of the disease, and thus giving nature an opportunity of eliminating the poison. As the patient was so advanced in years I preferred to commence by administering the remedy endermically, as I wanted besides to observe what effect the remedy would have on the secreting surfaces. I therefore dressed the raw spots with plegets of lint soaked in a saturated solution of sulphite of soda in water, adding a little glycerine to the lotion; the immediate effect on the sores was most remarkable; by the second day they had completely lost their unhealthy dirty look, and had assumed a bright rosy hue, and were quickly skinning on the edges, and the pain caused by such an extent of raw surface was completely relieved by the application. At this time the extent of the sores was so great that scarcely a sound spot could be found from the hips to the soles of the feet. Being curious to ascertain whether the remedy was acting only locally or was also entering the system generally, I got my friend Dr. Davy to examine some of the urine of this gentleman, when he found that it gave ample evidence of the presence of *sulphurous acid*. After some weeks of treatment by external application, during which a very great improvement could be observed, both in the size of the bullæ and their daily numbers, I commenced the internal administration of the remedy in ten-grain doses every fourth hour, using this time the sulphite of magnesia: no bad result occurred—no diarrhœa, no loss of appetite, no nausea, but a still greater improvement; the bullæ now appearing only at intervals of two or three days, never larger than half an inch in diameter, and only one or two at a time; while at the commencement, when he first came under my care, the average number of bullæ which daily made their appearance was from twenty-five to thirty,

their size averaging one inch and a half in diameter. The patient was now so far improved as to be able to go out to drive every day, and to enjoy life, whereas during the previous few months his existence had been a burthen to him. Unfortunately, one day, he exposed himself to cold, got influenza, of which at the time there was an epidemic in Dublin, and in a few days he died—a result not to be wondered at when it is remembered that influenza at the age of eighty-two is almost always fatal. Two instructive facts are deducible from the above case; first and foremost, that sulphite of magnesia does not disturb digestion nor cause diarrhœa, both of which bad effects have been laid to the charge of this remedy; and secondly, that the sulphites, even when applied endermically, are absorbed and circulated *as sulphites*, and finally excreted by the kidneys undecomposed, *at least, in part*. This is a very important fact to note, because it has been asserted that, if even my theory were correct, the treatment by sulphites could not stand the test of experiment, as the sulphites, during their progress through the economy, become oxydized and converted into sulphates, even before they reach the circulation. This I have repeatedly proved to be incorrect; and though some portion of the salt, no doubt, does become further oxydized, a considerable portion will find its way unchanged into the circulation, as I have been able to detect the presence of sulphurous acid in the urine, even when very small doses of the salt had been administered.[a]

The next example I shall bring forward is a case of multiple abscesses depending on the absorption of a zymotic poison. A sailor, twenty-four years of age, of a not very robust constitution, but still not of a strumous habit, returning from a voyage in the West Indies, during which he had visited places where there was yellow fever, was attacked during the voyage home by sickness of anomalous character; he had shiverings occasionally, and at times some vomiting and diarrhœa; the captain of his ship gave him some simple purgatives and other remedies, and he seemed at times to improve, but still the man complained of terrible lassitude, was considerably jaundiced, and after a short time was attacked with boils and abscesses; eventually he reached the port of Dublin, when he came under my care. I found, on examination, that he had whitlows on almost every finger, a very ill-looking semi-phagedenic ulceration of the glands of the groin, and several superficial sores on his legs and arms; his pulse ranged between 85 and 100, his bowels were relaxed, tongue coated, skin yellowish, and hot. Having carefully listened to his history, I thought it probable that it had absorbed some animal poison, and that nature was busy eliminating it. I at once administered sulphite of magnesia, in scruple doses, three times a day, and dressed all the abraded surfaces with a saturated solution of sulphite of soda. After a week increased the dose to one scruple, four times a day, and administered it in decoction of bark and compound tincture of bark; the result was most satisfac-

[a] Dr Davy's mode of analysis is very simple and efficacious, and can be easily applied in a hospital ward. A large test tube being half filled with urine slightly acidulated with pure muriatic acid, a piece of starched paper stained with a weak solution of tincture of iodine is suspended in the tube over, but not in contact with, the urine; if any sulphite is in the urine, the iodine stain will be removed by the sulphurous acid gas which is evolved.

tory; the sore in the groin became healthy-looking, the whitlows rapidly healed, and in three weeks he ceased to attend. Now in this case I am convinced that the man had been infected, while in the West Indies, with the poison of yellow fever, which from some cause or other having been prevented from pursuing its ordinary course, had contaminated the blood and given rise to those boils, whitlows, and abscesses, which were no more than the results of the efforts which nature was making to expel the poison; but as fast as nature expelled it at one point the poison was re-producing itself in another, and eventually, in all probability, the patient would have sunk from exhaustion, but the presence of the sulphite which I administered checked the further increase of the poison, and then nature was enabled to effect a cure.

A short time ago I was attending a gentleman who was dying from phthisis senilis; his expectoration was distressingly profuse and was annoying him more than any other symptom. Remembering the success which had attended the administration of a sulphite in a case of phthisis which I attended in 1862, I administered five grains of bisulphite of magnesia every third hour. The result was most remarkable; not only was the purulent expectoration reduced far beyond what I expected, but the night sweats, which also troubled him excessively, almost entirely ceased; and though the medicine was unable to avert the final result, it was at any rate able to give ease and comfort to a dying man, which, next to saving life, is the great object of our mission in this world.

A few days ago a well-known French cook, in this city, came to me in great alarm about himself; he had given himself a very slight wound, a mere scratch with his knife, while dressing a piece of raw meat. I never saw a man looking more ill; he was jaundiced; he was so feeble as scarcely to be able to stand; his pulse was 100, his tongue foul, his bowels relaxed, and his wounded hand very much swelled, and excruciatingly painful. The wound, though slight, was dark and angry-looking, and red lines coursed up his fore-arm, following the tracks of the lymphatics. I wrapped up his hand and arm in lint soaked in a saturated tepid solution of sulphite of soda (which is much more soluble than sulphite of magnesia), and wrapped this again in gutta percha tissue, and administered sulphite of magnesia in ten-grain doses, four times a day. The improvement was rapid and manifest; the dressing had not been three hours on his hand and arm when he experienced the greatest relief from pain. In two days the swelling had almost entirely subsided, and in less than a week from the commencement of the treatment he was perfectly well. I have just stated that the application of sulphite of soda immediately relieved the pain, which at the time of my first visit was almost intolerable. I have had occasion in several cases to observe the extraordinary anæsthetic property of sulphite of soda when applied to raw surfaces, especially in burns; and although I cannot well explain to myself the way in which this phenomenon occurs, still I have too often observed its recurrence to any way doubt the accuracy of my observation. I had a case of very ill-conditioned sore throat under my care last spring, which I feared might terminate in diphtheria. I administered sulphite of magnesia internally, and three times a day; I directed that half a scruple of

the powdered salt should be insufflated by means of a quill into the pharynx, which last invariably produced the greatest ease from pain.

I have the notes of several other cases equally instructive and interesting, but I do not wish to weary my readers with useless repetitions Each case points in the same direction; and although each case was not a success, yet the disappointments have been few; and although up to this date both my theory and its application have found but few followers in this country, still I venture to predict that eventually the treatment of zymotic diseases by the administration of sulphites will be as fully recognized as that of ague by cinchona; nay more, for if paludal and intermittent fevers be the result of zymotic infection, as it is almost certain that they are, cinchona itself will be superseded by the sulphites both in the treatment and prophylaxis of those diseases.—*Dublin Quart. Jour. Med. Sci.*, November, '66.

Art. XXVII.—*Action of Cod-Liver Oil:* By A. Bissell, M. D., of New York.

THE discussion of the therapeutical applications of cod-liver oil, started by Dr. Joseph Adolphus, of Hastings, Mich., in his able communication in the *Reporter* of Dec. 8th, 1866, has led me to offer the following remarks on the subject for your columns.

M. Bouchardat, Professor of Hygiene at the Academy of Medicine, Paris, says:

"The minute division of the iodine in cod-liver oil, the particular state in which it exists, must singularly facilitate its absorption by the tissues, and can in this way contribute more than the absolute proportion of this substance to the marked effects which this oil exerts on the animal economy.

"Also, iodine in the oil is not eliminated from the system, as the other soluble preparations of iodine: in this elementary combination its action is slower, more regular, and more persistent, as it is successively set at liberty in the economy, in proportion as cod-liver oil is gradually decomposed in the blood."—*Manuel de Matèrie Médicale*, page 749, 1856.

The action of cod-liver oil on the system is a double one; it is nourishing by its fatty elements, and curative by its medicinal bodies —iodine, bromine, and phosphorus, which it naturally contains; and to these three substances must be attributed its superiority over other fats or oils, either animal or vegetable, in the cure of diseases. These facts, discovered and proven by physiologists in their experiments on animals, and confirmed by the experience of physicians in their daily practice, have been corroborated during the last eight years, in a most illustrative manner, by the administration, to a large number of patients, of a cod-liver oil five times richer in iodine, bromine and phosphorus, than any of the cod-liver oils known before.

Cod-liver oil, as well as other fatty substances, when taken in too large quantities, is apt to disturb the stomach, and derange the functions of the intestinal canal. Only a small quantity can be digested and assimilated, the rest passing off unchanged, producing more or less frequent and abundant alvine evacuations, in which are contained the superfluous oils and fats. Observations prove that the gastric juice has no action whatever on fats or oils, the pancreatic juice being the only body, which, by its emulsive properties, causes the absorption of these substances into the economy; and, therefore, all the oil not emulsioned by the pancreatic juice is evacuated by the intestines just as it was taken. The knowledge of this important fact is due to the recent observations of Claude Bernard, a well known authority in physiology. The oil, once emulsioned by the action of the pancreatic juice, is brought into the general current of the circulation as follows: it is first taken up by the chyliferous vessels on the surface of the small intestines, and passing through the mesenteric glands and the thoracic duct, it is discharged in the left subclavian vein, where it mingles with venous blood returning to the right cavities of the heart. This blood, and the fresh nutritious elements, furnished by the two subclavain veins, are pressed into the lungs to be there oxidized and altered: while passing through the pulmonary circulation, the oily molecules are modified and almost all of them destroyed. The blood, then ready anew for nutrution, passes into the left ventricle, to be thence distributed through the arterial system, carrying along with it some oily globules left undecomposed during their speedy passage through the lungs, said oily globules to be successively altered in the circulating blood.

The medicinal oil, evidently brought undecomposed into the lungs, and partly in the general current of the circulation, is modified, losing not only its emulsive form, but also its oleaginous characteristics, so as to constitute a part of the arterial blood. Iodine, bromine and phosphorus are then set free during the process of nutrition of the tissues, each part of our system appropriating to itself the substance it needs.

The tissues, in contact with the nutritious blood, having a tendency to appropriate to themselves the elements most proper to maintain their healthy condition or to alter it, when unhealthy, is it not judicious to conclude that the lungs first and then the rest of the system, when affected with bronchitis, phthisis, scrofula, under any variety, or rickets, etc., etc., are highly benefited by the healing and restorative action of the oil and its medicinal constituents, minutely, naturally, and persistently brought into contact with the diseased parts?

That oils and fats are successively carried through the economy, and transformed, as above described, is amply demonstrated by the experiments of the most eminent modern physiologists, such as Claude Bernard, Tiedemann and Gmelin, Leuret and Lassaigne, Sandras, Bouchardat, Blondlot, Delafond, Gruby, L. Corvisart, J. C. Dalton, jr., A. Flint; R Dunglison, etc.

We must not forget this important point, that oils or fats go into the blood undecomposed and unchanged, being merely infinitesimally divided by the pancreatic juice; but if an oil contains substances, in a close chemical combination, so that they cannot be easily

separated, these substances will of course be carried into the blood with the oil itself. This is just the case with a cod-liver oil, which contains a large proportion of iodine, bromine and phosphorus. Iodine and bromine have such a strong affinity for oil, that they cannot be separated from it by chemical reagents, not even by strong sulphuric acid. They must, therefore, be carried with the blood and liberated when the oil is transformed, in the process of nutrition, into its elements, and becomes the chief agent by which the heat of the body is maintained. Knowing, then, that to the nutritive property of the oil is superadded the alterative and stimulating power of a comparatively large quantity of iodine, bromine, and phosphorus, who can doubt the efficacy, as a medicine, of cod-liver oil, if made richer with these substances?

Phosphorus, a part of our brain and bones, is a powerful diffusible stimulant, exciting the nervous organs, heightening the muscular power and mental activity, and relieving the despondency of mind occasioned by many serious diseases.

Iodine and bromine are superior to all alteratives for improving and purifying the depraved nature of the blood. They are the best remedies we possess for checking and controlling the swelling and induration of the glandular system, the ulcerative process in scrofulous complaints, the diseases of the lungs, etc. Obviously, the main point, in such serious affections, is to check and control at once the ulcerative process, and to do so it is of the greatest importance to use PROMPT AND ACTIVE MEDICATION.

SUPERIORITY OF IODINIZED COD-LIVER OIL OVER SIMPLE COD-LIVER OIL.

Until of late, natural and pure cod-liver oil has been the best remedy, and the one most generally used, with more or less success, in diseases of the lungs when of a tuberculous character. The period of the malady when the oil was first employed, and also the purity and strength of the remedy accounting for the success or failure.

Pure cod-liver oil is more likely to cure consumption, scrofula, rickets, swelling of the glands, etc., in the first stage of the disease; in the second and third stages it mitigates the severity of the symptoms and prolongs the life of the patient, but seldom saves it.

The reason for this difference of action is simply that the pure oil contains iodine, bromine, and phosphorus only in minute quantities, which, although sufficient to cure a disease in the beginning, is not powerful enough when it assumes a graver type.

If we suppose for an instant the discovery of a new natural cod-liver oil, containing more iodine, bromine, and phosphorus than the oil in present use, there is not the least doubt but that every physician would prescribe it in preference, fully confident of its enhanced qualities. The natural consequence of this proposition explains satisfactorily why the medical profession should give the preference to iodinized cod-liver oil, which contains a larger proportion of iodine, bromine, and phosphorus than the oil in present use; these active elements, as before remarked, are in such a peculiar combination that their action is slow, regular, and persistent, being success-

ively set at liberty in the economy in proportion as the oil is decomposed in the process of animal life.

Some physicians are so well convinced that the curative properties of the oil reside in these three substances, that to obtain a full effect they prescribe vary large doses of the oil, sometimes giving two, three, and even four tablespoonfuls three or four times a day, the larger quantity amounting to no less than half a pint daily. That their object is not attained is fully proven by physiologists, who have demonstrated that only the small quantity of oil emulsionized by the pancreatic juice is digested and carried into the blood, the rest being passed off nearly as taken.

In view of the above physiological and chemical facts, experiments were made in 1858, which, after many trials, succeeded in preparing a *compound iodinized cod-liver oil*, which is simply the best Newfoundland cod-liver oil combined with four times as much of iodine, bromine, and phosphorus as that naturally contains.

Pure cod-liver oil varies considerably in composition, as may be seen by comparing the different analyses published in works of chemistry and materia medica. A quart contains 1 to 4 grains of iodine; $\frac{1}{8}$ to $\frac{3}{4}$ of a grain of bromide; $\frac{1}{4}$ to $\frac{1}{2}$ of a grain of phosphorus. In 1860, there was published in the *Repertoire de Pharmacie*, edited by Professor Bouchardat, at Paris, the formula of a cod-liver oil, which contains per quart, in addition to the above quantities

Iodine	16 grains,
Bromine	2 grains,
Phosphorus	2 grains.

The combination is made so that the odor, taste, and color of the natural oil are preserved.

This preparation being consequently five times more active than the richest commercial cod-liver oil, will tend to restore health by its curative action thus enhanced, in a much shorter time than the simple kind, and attain the desired effect where the other will fail.

The dose of this oil is *only* a tablespoonful for adults, and a dessert or a teaspoonful for children, according to age, three times daily. It may be administered at any hour, but it is preferable to select the time of meals, since we know that the pancreatic secretion manifests itself only during the stomachal digestion, to act immediately on the alimentary principles as soon as they pass from the stomach into the intestines. Though the quantity of iodine is very small in each dose, it acts nevertheless with a greater efficacy than a larger quantity of any of the iodides, for the reason stated by Professor Bouchardat and others, that iodine in cod-liver oil is not eliminated from the system as the other soluble preparations of iodine, but is successively deposited in the economy as the oil is gradually decomposed in the blood.

When iron is required with the oil, the dragées or syrup of pyrophosphate of iron will be found the most agreeable and active adjuvant. It is best for children and delicate persons to take the syrup of iron after the oil."—(Phil.) *Med. and Surg. Rep.*, Feb. 16, '67.

Art. XXVIII.—*Incompatibility of Pot. Iodid. and Potass. Chlorat.*

THIS is an important point in practice, for in Syphilis, to act at the same time upon the ulceration of the mouth and the general malady, chlorat. potass. and pot. iodid. are frequently given. This practice is dangerous, as has been demonstrated by M. Vée; for the chlorate of potash, absorbed simultaneously with the iodide of potassium, may part with its oxygen, and transform it into the iodate, a poisonous agent. The recent experience of M. Melsens proves the possibility of this transformation.

This ought to suffice to prevent, were it only as a precautionary measure, the simultaneous administration of the chlorate of potash and the iodide of potassium.—*Gazette Méd. de Paris*, Feb. 2, '67.

Art.—XXIX.—*Therapeutical Effects of Curare.*

IN a work entitled "Studies upon Curare," and submitted to the judgment of the Academy, we have already noticed that among the important phenomena produced by the therapeutic use of curare on man, are observed, among others, after certain doses, a remarkable action upon the organs of vision in different individuals, and the appearance of hypnotic effects. Subsequently we have been able to complete and better manage these phenomena.

The doses of curare which have produced these effects, with more or less rapidity and more or less intensity, have varied from 5 *centigrammes* to 135 *milligrammes*. They have been administered, after being filtered, by sub-cutaneous injections upon the upper extremity. The rapidity of the appearance of the phenomena and their intensity naturally depend upon the size of the dose. We may thus establish the two following categories: The first characterized by the confused state of vision, a sensation of heaviness of the upper eyelids and their semi-occlusion, a feeling of frontal oppression; the second characterized by double vision, dilatation of the pupils, a feeling of heaviness in the head, a tendency to sleep and a kind of stupor (hypnotic effects).

The one is in connection with doses of from 5 to 9 *centigrammes*. The other, embracing the first phenomena but more decided and more rapidly observed, is in connection with doses of from 10 to 135 miligrammes. (This last dose has been our maximum.)

First category.—It is by a confused state of vision and a slight heaviness of the upper eyelids, that the appearance of the phenomena of this kind is announced:

About the { 40th minute with 7 *centigrammes*, / 20th " " 8 " / 17th " " 9 "

The patient no longer distinguishes objects clearly; he reads with difficulty; he is seen to pass his hand before his eyes as if to drive away a cloud; he complains of heaviness of the upper eye-lids which

are observed to be lowered in such a manner as to contract the palpebral opening and give the countenance a very peculiar expression. Without complaining of any real pain in the head, he speaks of a frontal oppression which he locates on a level with the root of the nose, between the two superciliary arches.

These symptoms oftenest exist united, but they sometimes appear separately. They have a progressive increase for about thirty minutes, then a diminution, also progressive, so as to last, in all, about an hour and a half. They thus disappear, leaving no perceptible trace after them.

Second category :—But if we increase the dose to 10 centigrammes or more, these symptoms appear more quickly, are more intense and last longer.

They are generally produced about the :

16th minute with doses of 10 *centigrammes.*

12th to 13th " " " 11 and 12 "

Their progress is equally gradual. Their duration is always several hours, sometimes even half a day. They leave no trace after them. But besides, with these doses, other symptoms exist which strike the observer much more forcibly; these are double vision, dilatation of the pupils, and hypnotic effects. The confused state of vision is, indeed, often complicated with the sensation, complained of by the patient, of seeing objects double, one near, the other far, in case he uses both his eyes. The supplementary image is seen, in relation to the true one, in various positions . Sometimes upon the same horizontal line, sometimes above, sometimes below. Experiment with colored glasses indicates strabismus. The images are seen at greater or less distances from each other, according to the position of the object.

The position of the supplementary image is never absolutely stationary; the patient sees it sometimes at the right, sometimes at the left, sometimes above, sometimes below. The image itself does not vacillate, the patient recognizes it and generally describes it very well, even without the aid of the colored glass. It sometimes happens, nevertheless, that, wishing to seize an object, he extends the hand towards the supplementary image. Sometimes, instead of two images, the patient sees three, or four, or even more, but the latter are confused and irregular. This phenomenon always accompanied with a sort of mist, when very intense, entirely prevents the patient from reading. It has lasted, at the longest, two hours. Its progress is gradual, with a maximum, and it leaves no unpleasant effects after it. During this time has often been observed a dilatation of the pupils, which preserved their contractility. They increased from 1 to 2 *millimètres.*

At the same period a tendency to sleep was indicated by the countenance, at first by an increase of the heaviness of the upper eyelids, whence their semi-occlusion, and by that appearance which the patient has of a person struggling against sleep. The latter sometimes happens, though not in all cases. The most refractory patient has nevertheless told us that, after a dose of 135 *milligrammes,* he could readily go to sleep if he would allow himself. This last symptomatic manifestation among men has already struck us, as we mentioned in our first work, but subsequently we have met with new confirmation in recent physiological experience :

"A rabbit subjected to the influence of curare presented, among other phenomena, a kind of somnolency, with occlusion of the eyelids; this sleepy appearance disappeared at the least noise, and then returned.

Recollecting what we had so clearly observed in mankind, we could connect with its true cause, at least we believe so, a phenomenon which we had often noticed in our preparatory experiments upon animals, but without attaching importance to it. In this case clinical experience had thus furnished the real interpretation of a physiological fact, which had before passed unperceived by us.

Let us close by saying that, however intense may have been the remarkable symptoms just described, even after a dose of 135 *milligrammes* of our new curare, no symptom had gone beyond the limits indicated, none has returned spontaneously. The influence has here, as in other effects of curare, been absolutely temporary.

It is important to mention that the intellect has always perfectly retained its powers, and that we could at any moment draw from it the most precise information. The ophthalmoscope has never disclosed anything the least abnormal in the eye itself.—*Gaz. Méd. de Paris*, Feb. 2d, 1867.

Art. XXX.—*On the Milk Cure.* By Phillip Karell, M. D., Physician to his Majesty the Emperor of Russia.

After a learned introduction on the therapeutical cures to which milk had been devoted by many ancient and modern physicians, Dr. Karell proceeds to define what he means by the *Milk Cure.*

"If, in giving a general definition of the milk cure," he writes, "we call it a *nutritive cure*, it by no means follows that it should only be administered in diseases dependent upon a perverse nutrition. It might as well be defined as a *sedative* cure, for it is very often useful in those cases where Valsalva would in all probability have employed fasting and phlebotomy. A more exact definition, perhaps, would be, that milk, when methodically administered, is a *regulator of nutrition.* It might perhaps be urged that milk is a well-known remedy, and that every physician uses it in appropriate cases. I admit that all medical men are sufficiently well acquainted with milk as a nutritive agent, and as an antidote; but I speak from experience when I assert, that in general the cure by milk, *scrupulously administered, and in strictly measured doses*, is not sufficiently, and only very rarely, recognized as a sovereign and useful remedy.

"I have frequently," he proceeds, "during the last fifteen years, been called into consultation in cases which were thought hopeless, and in many of which I recommended the milk cure, which had never been resorted to during the whole course of the malady. I had pre-

scribed, even before that time, the employment of milk, but without regulating its administration. It was only by degrees that I arrived at a methodical system of treatment. Experiments made by other physicians have tended to strengthen my convictions. Thus, when accompanying the late Emperor Nicholas in his travels, we arrived one day at Ishougneff, in the centre of the Steppes, where eight regiments of cuirassiers and some other troops were encamped. An epidemic of intermittent fever was raging at the time. I found many of the wards filled with dropsical patients, the greater number of whom had hypertrophied spleen and liver. To my great satisfaction I saw a bottle of milk at the bedside of each patient, and I learned from the senior physician, Dr. Weks, that he had given up all other modes of treatment in those special cases, having found a sovereign remedy for them in milk. Another of my colleagues, Dr. Behm, having made important observations during five years in the hospital to which I was also attached, wrote to me with regard to the malignant typhoid fever which raged in Poland and Lithuania in 1854, that he had no success in treating that epidemic until he resorted to the milk cure and the occasional use of Hungarian wine.

"My respected friend, Dr. Inozemtseff, of Moscow, resorted, with the help of his assistants during his long professional career, to the milk cure in nearly 1000 chronic cases. In his work on the *Milk Cure*, published in Moscow, in 1857, he speaks of the good results which he obtained from this remedy, and affirms that its efficacy is indisputable. Nevertheless, he orders milk without defining the dose. He points out the difference between a *milk cure* and a *milk diet*, on which latter he places a patient for several years. Inozemtseff refers the good results which I have obtained to the *moderate* doses in which the milk was given. I believe that a regular mode of administration is the most rational. Milk is more easily digested when taken in small draughts and at stated intervals. If we allow milk to be taken *ad libitum*, the patient will likely soon suffer from indigestion."

Dr. Karell relates two cases illustrative of Dr. Inozemtseff's practice, and then proceeds to a consideration of his own mode of treatment.

"I generally commence," he writes, "the cure by employing milk *alone* and forbidding all *other kind of nourishment*. I proceed with great caution in prescribing for the patient, three or four times daily, and at *regularly-observed intervals*, half a tumbler or a tumbler, i. e., from two to six ounces of skimmed milk. Its temperature must be made to suit the patients' taste. In winter they generally like tepid milk, heated by placing the tumbler or cup in a vessel filled with hot water. In summer they generally prefer it of the same temperature as the surrounding atmosphere. They should not gulp it all at once, but take it slowly and in small quantities, so that the saliva may get well mixed with it. Of course the milk must be of good quality. That of town-fed cows has generally an acid reaction; that of country-fed cows is better, because its reaction is generally neutral. If the patient digest the milk well, which is proved by the fæces becoming solid, I gradually increase the dose. The first week is the most difficult to get over, unless the patient has strong will and firm faith in the cure. During the second week two ordinary quarts are gen-

erally administered each day. If the cure takes its regular course, then the milk must be drunk four times daily—at eight in the morning, at noon, at four, p. m., and at eight, p. m. If the patient desire it, I change the hours, but I always insist on regular intervals being observed; for the patient will think lightly of the cure, if he be not ordered to observe some regularity while subjected to it. No confidence can be inspired, and no cure expected, if the physician says to his patient, 'drink milk in whatever quantities, and whenever you wish'

"When obedient to the physician's orders, the patients complain neither of hunger or thirst, although the first doses appear very small to them. If, instead of four cups of skimmed milk, a person afflicted with a severe illness takes four large tumblerfuls of unskimmed milk, you may be sure he will not digest it, and his confidence in the remedy will be shaken at the very commencement.

"I was consulted six years ago by Mrs. B. She had been suffering for four months from chronic diarrhœa, and from vomiting. The disease was called chronic gastro-enteritis by some. The patient was emaciated, and her liver undergoing a fatty degeneration. She had suffered a long time from uterine and intestinal hæmorrhages. In a consultation which I had with two experienced practitioners, I proposed the milk cure as the *refugium unicum* in this case. The two gentlemen replied that they had tried it several times, but that the lady could not digest it. I knew from what they said that the patient had partaken of milk in large doses several times daily, and had beef tea and other food besides. We resolved to try the methodical administration of milk. I ordered skimmed milk to be given thrice (each dose containing four tablespoonfuls) during the first day, and absolutely nothing else From that time the vomiting ceased, and after the third day the diarrhœa disappeared. The fæces acquired their normal appearance, which had not been the case for years before. At the end of the second week she could digest, without inconvenience, two bottles of milk a day. Finally, she made a complete recovery, and lived several years.

"But it must not be supposed that such an effect can generally be produced when nothing is administered except small doses of milk. I have placed patients, who were taking milk in minute quantities, also on beef tea, white bread, and water; but I never observed the same satisfactory results after this mode of treatment. The cure never was complete when allowed anything except milk to be taken for dinner. Sometimes, when the invalid had arrived at taking from ten to twelve glasses per day, I observed a return of his illness. I had then to commence the cure anew, by prescribing milk in small doses. At the beginning of the treatment, the patient's bowels are frequently constipated, which I consider of good augury. The fæces become very hard, in consequence of the absorbtion of the fluid particles of the milk. This may be remedied by warm water injections, or by the use of castor-oil or rhubarb. Persons suffering from flatulence are soon relieved of it by the milk cure. If the constipation be obstinate, I order the addition every morning of a little coffee to the dose of milk, or, towards four o'clock, p. m., stewed prunes or a roasted apple. If, on the other hand, diarrhœa and borborygmi be the result of this mode of cure,

it proves either that the milk was too rich, or that it had been administered in too large doses. If the diarrhœa does not arise from ulceration of the intestines, it is sure to be cured by strict observance of method in this treatment.

"Feverishness is no contra-indication of its use. If the patient feel very thirsty, I allow him to drink water, or Seltzer water. If he have a strong desire for solid food, I allow him, at the end of the second or third week, a little stale white bread with salt, or a small piece of salt herring. At four o'clock, i. e., his dinner hour, the patient may, as in the morning, take a small quantity of stale bread. Once a day, instead of pure milk, I give him some soup made of milk and oatmeal. After continuing this treatment for five or six weeks, it may be modified (according to circumstances), by allowing only milk thrice daily, and once a steak or chop. I have found that raw meat is easiest to digest.

"The strongest opposition to treatment I have generally experienced from the patients themselves, and the cause is easily explained. If a person suffering from some chronic ailment has already been subjected to various modes of treatment without having been cured by any one of them, and if the milk cure be suggested to him, which, in his opinion, can lead to no improvement, he thinks it is the same as the verdict which declares, 'you are lost, and medicine cannot save you!' I have sometimes seen nervous patients grow seriously alarmed, and request time to reflect whether they should subject themselves to the treatment or not. Thus the patients either assert that milk is repulsive to them, or that they are unable to digest it,—this one, because he has always been troubled with his liver; another, because he smokes; while a third is afraid he will die of hunger, or pretends that he has already tried the milk cure, but was unable to continue it, because of the disagreeable effects it produced. Others ask what purpose the milk cure can serve, when other medicines have done little, if any good. My answer then is, that milk is a food easy of digestion with every person, provided it be given with precaution, that it be of good quality, and administered in definite doses; that it is the first food of man, and that a new-born infant shows no dislike to new milk. To die of hunger, even when taking nothing but milk, is impossible, since there are people who take no other nourishment. In milk are united all the elements necessary for the nutrition of our body, and besides, this substance is easily assimilated. Lastly, I add that long experience has convinced me that milk is an energetic remedy in many diseases, and that in some cases I prefer it to any other remedy. Thus I am rarely unable to persuade the patient to follow out my advice; and in the majority of cases, notably those of dropsy, I have generally had the satisfaction of receiving, in a very short while, the sincere thanks of the patient for the speedy relief he felt."

Dr. Karell relates several successful instances of the treatment, and then discusses the "indications" for and against its adoption.

"In summing up," he writes, "the phenomena always observed among the patients cured or treated by other physicians and myself, I must enumerate: An intractable state of blood, impoverished to the utmost extent, and general dropsy; disordered innervation, assuming the forms of hysteria, or hypochondriasis; obstinate dyspepsia, neither the result of congestion of the stomach nor of ulceration,

nor of cancer of that organ; in fact, catarrhal, rheumatic, and gouty affections, as also nervous maladies not the result of a *local disease*, but of quantitative and qualitative defects in the fluids; or, to speak more clearly, a constitutional disease. If the cause of the disease was apparently situated in the organs of digestion, the more strongly was I tempted to try this cure. I have thus cured, or very much relieved, chronic irritations of the pharynx and the œsophagus, ulcers of the stomach, and similar diseases of the digestive tract. These *gastric cases* formed the greater portion of the 200. Among these, satisfactory results were obtained in a very short time. The desponding patient became lively, the gloomy countenance brightened up, the big belly decreased in size, and, as a consequence, many other unpleasant symptoms disappeared; in a word, the patient felt quite a new man.

"And even where the seat of the malady was not always as clear as in the cases above cited, but where the disease of any organ seemed to be connected with some derangement of the digestive tract, I have invariably tried the milk cure. For I thus produce a good result, simply by regulating the diet, and by excluding indigestible articles of food. And I have thus frequently had the satisfaction to see a complete cure effected by such simple means in cases where deep-seated organic disease was suspected. My own experience and that of other physicians have shown that great improvement, and even almost a complete feeling of health, have attended this treatment when employed in cases of organic disease of the heart, of advanced degeneration of the kidneys, etc. Taking into consideration that hypertrophy of the heart and the central congestion, as well as increased bronchial secretion which result therefrom, are frequently occasioned by disorder of the abdominal circulation, I think I have found an exact indication for the milk. I have modified the milk cure according to circumstances in treating plethoric persons.

"The fatty degeneration of the arteries, and the consequent friability being so frequently one of the determining causes of apoplexy, I think we shall find an exact indication in that disease for the use of milk. Neither can I say that constitutional debility was common to all patients whom I placed under the milk cure. On the contrary, I have made persons of a florid complexion undergo the treatment—persons of a muscular build and a full pulse, who are generally ordered a temperate regimen, and who, to prevent congestion and apoplexy, take bitter and saline solutions with benefit. For advanced tuberculosis we have no remedy. In cases where this disease is complicated with tubercular ulceration of the intestines, I cannot foretell very good results from the use of milk.

"Fever is no contra indication to its use. The utmost caution, however, should be used when milk is administered in such cases. At the commencement the doses should not be increased too speedily, for the patient's stomach will not absorb more milk than it can digest.

"To sum up, I have already strongly expressed myself against the practice of extolling the milk cure as a panacea; nevertheless, I feel no hesitation in declaring that the number of cases for which I prescribed the milk cure with a great degree of confidence is very con-

siderable, and that in these cases I could have expected no good results had I resorted to any other mode of cure.—*Ranking's Abstract*, January, 1867.

ART. XXXI.—*Pulsatilla:* By JOHN C. PETERS, M. D., of New York.

DIOSCORIDES recommended pulsatilla internally in inflammations of the eyes; and, made up into pessaries, for suppression of the menses. Pliny says it is useful in headache and fever and ague, and the earlier Arabian physicians also used it in the above diseases. Cullen says this is one of the remedies, the revival of which we owe to the benevolent industry of Baron Stoerck. But he ascribed so many wonderful effects to it that his credit was hurt with many physicians; and this happened the more easily as the plant rapidly deteriorates by age.

It was undoubtedly on the authority of Stoerck (see *Libell. de usu Medico Pulsat. nigr.* 1771) that this remedy was again received into medical practice. His experiments were accurate and thorough, for he administered it both to the healthy and sick. His mode of administration was also peculiar, for he had either the plant or extract rubbed up into a very fine powder in a marble mortar, and well saturated with sugar of milk, just as Hahnemann subsequently directed. Hahnemann was only sixteen years old when Stoerck's work on pulsatilla was published; and the Baron was in the zenith of his fame, while the future homœopathist was a student and undergraduate of medicine. But Stoerck mixed from 7 to 14 grains of the extract with 1 drachm of sugar of milk, and gave from 20 to 30 grains, 2 or 3 times a day; or from 1 to 3 grains of the dried plant; or from 20 to 60 drops of the tincture; or from 2 to 4 drachms of the distilled water of pulsatilla, from 2 to 4 times a day.

In these doses Stoerck says it sometimes disturbed the stomach and acted on the bowels. When the menses were scanty or suppressed, it acted as a true emmenagogue, so that they became regular in time and normal in quantity. The urine often was discharged somewhat more copiously; and salivation, like that caused by digitalis, was noticed several times. Pains in the head and eyes, somewhat like those induced by belladonna, were apt to occur. Perspirations, like those caused by opium and aconite, were sometimes observed.

In addition, it has been believed to exert a specific action upon the mucous membranes, like senega, tolu, cubebs, iodide of potash, etc. Vogt says it causes a more active movement of the fluids and increased metamorphosis of the tissues, followed by more copious discharges from the internal and external membranes, such as greater moisture of the eyes, nostrils and bronchia, with some inclination to sneeze and cough, and some increased flow of mucus and expectoration; also with more or less irritation about the kidneys, bladder, urethra and vagina.

There are many points of similarity between the curative actions of senega and pulsatilla. Thus the latter has been used from time immemorial in diseases of the eyes; while Wendt, Chelius, Von Am-

mon and other distinguished German authorities attribute to senega a very decided influence over catarrhal and semi-scrofulous inflammations of the conjunctiva, even including those which are complicated with a rheumatic or gouty element.

Stoerck first tried pulsatilla upon himself for an affection of the eye, for he had suffered much for two years in consequence of a violent contusion. He thought it caused severe lancinating pains in the affected parts, which he regarded as a favorable omen, and says a cure subsequently followed this aggravation. Stoerck frequently alludes to medicinal aggravations while treating of other remedies, and in fact this was a favorite notion with this distinguished physician. It is very well established that Hahnemann adopted, or rather appropriated many of Stoerck's views, especially those about aggravations and the preparation of remedies by trituration with sugar of milk. It is equally well known that he did not give Stoerck proper credit.

Stoerck subsequently administered pulsatilla in many cases of internal ophthalmia, iritis and amaurosis, especially those arising from secondary syphilis, chronic rheumatism, or from the suppression of various eruptions or piles, menses, or from a check of perspiration. But Schmucker, Bergius and Richter were not as successful as Stoerck claimed to be; while Graefe was obliged to add 1 grain of corrosive sublimate to every 6 ounces of an infusion made from 3 drachms of the herb; and Rust gave from 20 to 60 drop doses of a solution of ½ drachm of the extract in 1 ounce of antimonial wine. A pill, composed of 1 grain each of colchicum, aloes and calomel, will prove far more reliable than pulsatilla in syphilitic and rheumatic or arthritic iritis, as I well know from abundant experience, although the addition of 1 or 2 grains of extract of pulsatilla may not be amiss. Stoerck also recommended pulsatilla in cataract and opacities of the cornea; and there is no doubt that it could be used to advantage in many chronic affections of the internal eye. Kopp has used it successfully in scrofulous ophthalmia and morbid sensibility of the retina; also in severe neuralgic pains in and about the eye.

Stoerck has reported several cases in which pulsatilla given for amaurosis has caused a return of the menses which had been suppressed from one to several years; and Chapman has recommended senega as one of the most active, certain and valuable of emmenagogues. Both medicines are doubtless most useful when retardation or suppression occurs in consequence of the presence of severe catarrhal or bronchial affections.

Both remedies have been used successfully in catarrhal affections of the eyes, nose, ears, throat, air tubes, gastro-intestinal and urinary organs. Wood knows of no one medicine in which he has greater confidence than in senega, against chronic bronchitis, whether attended with profuse or scanty expectoration. He says it seems to act quite independently of any observable influence as an expectorant, and possibly by an alterative action upon the mucous membrane; while pulsatilla has been used by DeRamm and Lobenstein Lobel and others in many severe coughs, even in whooping cough, against which they say it is more useful than belladonna or opium. They gave ¼ or ½ grain doses of the extract to small

children, three or four times a day; ½ to 1 grain doses to those five years old; and 1½ to 2 grain doses to older patients.

Both remedies have been used as diuretics, and in chronic rheumatism.

When taken in large doses, pulsatilla often causes profuse perspiration, which may be offensive, sometimes followed by the outbreak of small vesicles or other eruptions upon the skin, and even pustules or paralyzed limbs. This, together with its specific action upon the eyes and mucous membranes, has led to its use in measles, especially when they do not come out readily, or are suppresed. But in ordinary cases, small, non-nauseating doses of ipecac, aided by some mild anodyne for the cough and restlessness, such as lactucarium, fluid extract of scutellaria, or hyosycamus, or conium, or even a small quantity of narceine, codeine or morphine will prove far more useful and comforting. In many cases small doses of paregoric are all that is required.

Pulsatilla is used in many dyspeptic troubles, especially in biliousness and indigestion connected with excessive secretion of mucus in the stomach and bowels. Senega, which is a stimulant and irritant, may prove useful in some cases of debility and atony of the stomach when coupled with derangement of its mucous secretions. But a mixture of bismuth and cubebs is often more serviceable than either.

From its specific action on the head, eyes and stomach, pulsatilla has been regarded by some physicians as a specific remedy for sick-headache, and it was used for headaches as early as the times of Pliny. A dose given every night during the intervals will sometimes postpone and lighten the attacks.

In conclusion, Vogt and Sobernheim class pulsatilla among the acrid narcotics in company with conium, digitalis, aconite, belladonna, colchicum, etc., and suppose that it acts as specifically upon the mucous membrane, as conium does upon the glandular tissues, or aconite upon the skin, fibrous tissues and vascular system, digitalis upon the kidneys, and colchicum upon the liver.

It will be noticed that Stoerck gave the great impetus to the use of pulsatilla in 1771, since which time all German physicians have used it, while Hahnemann only commenced to appropriate it in 1812. It is a singular fact that the latter used or recommended it in few or no diseases against which it had not been previously employed in rational and efficient doses. His extensive acquaintance with the ancient medical authorities led him to use many obsolete remedies in the very diseases against which they had been employed in former times, and such was his infatuation about infinitesimal doses, or such his inability to find other indications, that he very often contented himself with administering his inappreciable quantities of medicine, or rather sugar of milk and starch, against disorders to which they have not the slightest homœopathic relation. Thus, aconite, which is an arterial depressant and sedative, like digitalis and veratrum viride, was decreed to be homœopathic to fever and inflammation, against which it is most decidedly an antagonistic remedy. All the thousands and tens of thousands of cases of febrile and inflammatory disease said to have been cured by infinitesimal doses of aconite, must be regarded as simple recoveries.—*Boston Med. and Surg. Jour.*, Aug. 29, '67.

Art. XXXII—*Digitalis and its Mode of Action.*

WE will borrow from the excellent thesis of an old hospital physician, Dr. Legroux, some interesting considerations upon the interpretation which he gives to some experiments with digitalin, in order to deduce from them the true therapeutic signification of this medicine.

This work embraces not only some ingenious experiments, but above all a critical discussion upon various theories, in turn admitted to account for the action of a medicine which remains to this day mysterious and impenetrable in more than one point of its history. The essential idea of the work of M. Legroux, is to attribute to digitalis, given in therapeutic doses, a primitive action upon the capillary vessels and only a secondary upon the heart. This is an idea already entertained by Hutchinson in 1827, later defended by Duncalfe (*British Medical Journal*, 1859), and by Galey (*Thèses de Paris*, 1862).

The following are the conclusions of Dr. Legroux's paper :

(1) If given in a poisonous dose, digitalis acts directly upon the heart; it seems that, given in a therapeutic dose, it excites primitively the contractility of the capillary vessels, and has only a secondary influence upon the circulatory centre, by re-establishing the equilibrium of circulation.

If this theory is accepted, digitalis is a sedative to circulation, in as much as it calms its disorders; but if it operates thus, it is by an action stimulating and tonic, not sedative as is generally admitted.

(2) The influence of digitalis upon the temperature, the secretions, nutrition, upon the uterine contractions, hemorrhages, etc., can only be explained by its stimulating action upon the terminal branches of the great sympathetic.

This theory explains and justifies the favorable results obtained by the use of digitalis in fevers, cerebral affections, hæmorrhages, dysmenorrhœa, as well as in congestions, dropsy and circulatory disorders connected with cardiac lesions.—*Gaz. Méd. de Paris.*, April 27th, 1867.

Art. XXXIII.—*Oil and Soap of Quinine.*

THERE is often difficulty, especially with children, in giving preparations of quinine by the mouth, which renders useful external applications of this alkaloid. Again, it appears from an important work, read in the session of June 17th, to the Society of Medicine and Pharmacy of Grenoble, by M. Flandrin, that quinine is soluble in about two parts of warm oil, and in fifteen parts of cold oil The following formula expresses the maximum of concentration desirable in such a case :

Pure quinine,. . . . . 1 *gramme.*
Oil deprived of moisture,...15 *grammes.*

Rub the quinine with the oil in a mortar, in such a manner as to mix it with the oil as much as possible, pour the whole into a capsule and heat it, stir ing gently until completely dissolved.. Keep in a vessel dry and well stopped.

Apropos of the work of M. Flandrin, M. Tripier, physician of the army in Africa, has mentioned the benefits derived from the soaps of alkaloids, and among others, that of quinine. M. Breton, he says, still prepares in his laboratory a kind of soap mixed with lard, of which the following is the formula :

Stearine.....2 parts;
Sulphate of quinine,.....1 part.

Heat it until dissolved, and add a small quantity of lard, so as to form a mixture of the consistency of honey.

These substances should be used as frictions in the axilla and upon the groin, also as unctions upon the plantar surfaces.—*Jour. de Méd. et de Chir.*, Sept., 1867.

Physiology and Hygiene.

ART. XXXIV.—*The Use of Baths.* By THOMAS INMAN, M. D. (Lond.), Liverpool.

THERE are few adages more frequently at the tongue's end of the lady visitor, when she finds he self amongst the squal.d dens of poverty, than that "cleanliness is next to godliness." She sees that filth is ever the accompaniment of drunkenness and vice, and that a woman who can tolerate a dirty floor in her dwelling, and a dirty face on her shoulders, is generally a slattern in mind as much as in body, and quite unable to see any virtue in thrift, or any advantage in going to a place of worship. On the other hand, the same lady notices that the tidy housewife is generally a good specimen of her class—attentive to her religious duties, and anxious to be a loving wife and tender mother—she recognizes water as a valuable luxury, and agreeing with the visitor as to its powers of cleansing away physical filth, they naturally conclude that it must have some great influence in promoting spiritual virtues, hence the adage attains almost the position of a sacred truth. But the generalization, though it may be true to a certain extent, is practically of no value, as we shall see from a very short consideration. We turn our eyes, in the first place, to such islands as Hawaii, or certain others, in warm regions of the vast Pacific Ocean, and find there an amount of cleanliness and bathing which few in smoky England can attain to, and yet

there are under those pure brown skins, which are unsullied by the least bit of "grime," hearts as black, and sins as deadly, as are to be found in the darkest purlieus of Birmingham. We look again to India, where the washing and bathing is almost incessant, and there we see equally a mass of vice which is to the full as great as that which is common amongst ourselves. If we examine the nature of the rat—an animal in whom cleanliness, amidst the most difficult circumstances, is a well-known virtue—we find that his love of this Christian habit does not prevent him being fierce in fight and cannibal in propensity. Woe to his brother, sister, or friend, who becomes diseased! For him the shrift is short, and the funeral rapid, for he is eaten up at once, lest by the decomposition of the corpse the dwelling should be made unclean. Of all the ancient nations whose customs have come down to us in their writings, the Jews stand preëminent for their cleanliness, and yet none can say that, as a nation, they were superior, in a Godly point of view, to all others which have existed.

The simple f ct seems to be, that in England, where coal smoke abounds everywhere—even at a distance from large towns—every individual receives a sooty covering, which offends the careful eye. The lovely complexion of the child cannot be seen to advantage when it is concealed by a thin film of dirt, nor can the beauty hope to be admired whose face and linen are alike grimy. With us, then, a want of washing is equivalent to harboring dirt, and harboring dirt becomes an evidence of inattention to the exigencies of society. The woman who won't wash her face and take her hair out of curl ere she comes in contact with her fellows, is estimated by men as being indolent in mind as she is slatternly in person, and since reasonable beings prefer to have a tidy woman rather than a slut for a wife, her chances are small in the matrimonial market. In large towns, the difficulty of getting water for all purposes is often considerable, and in them cleanliness cannot be attained without considerable sacrifices. When, therefore, in the worst localities, such neatness as the visitor admires is to be met with, it argues great strength of individual character, and such as is generally associated with a strong sense of duty.

But when the individual is living in a smokeless air, like that of France, Italy, and other countries, where wood fires (and not very many even of those) alone are burned, there is no smoke to taint the skin, and consequently no necessity for a frequent wash. The denizen of Switzerland, and many another country, has been held up to ridicule by British tourists, on account of the small provision made in their hotels and houses for a thorough morning's wash. The sturdy Briton wonders how the simple folk can exist without a matutinal scrubbing, and some go so far as to estimate a nation's worth by the amount of soap which it consumes. The inhabitants of the pure-aired country, on the other hand, and quite as rationally, estimate a nation's filthiness by the amount of water which they require, and the quantity of soap which is wanted as an abstergent. Tested by this, the English have the character of being the dirtiest nation under the sun, and they richly deserve it. None do more to poison the air with the products of combustion and various manufactured smells. Even the lovely mountains of Cumberland are tainted with the smoke of Manchester and other northern towns, and on many occasions I

have seen the water on some western bay in Lake Windermere coated with a compact layer of unmistakable soot, which had been borne on the wings of the wind from far distant factories, or other chimneys.

Where it is an exigency, for appearance' sake, that cleanliness should be cultivated, it is very natural that those who are so prudishly disposed as we, speaking nationally, unquestionably are, should try and find some other reason for cultivating a freedom from dirt, than personal vanity and desire to be as pleasing as we can. Hence, we have adopted the formula, that "cleanliness is next to godliness," and is absolutely necessarry to health. Hence, we have long tirades about the folly of allowing the pores of the skin to be choked up with dirt, or stopped up by their own secretions. We point triumphantly to the Greeks and Romans and their constant use of baths; we look with complacency on the wondrous remains still extant in Rome, of the vast establishments of Domitian and Caracalla, and the great number of marble baths found in the remains of private villas, but we forget to examine whether the nations who used them so prodigally were a healthy lot, and whether the average age at death was superior, or even equal, to our own.

It is almost impossible, while staying in the "eternal city," for the mind not to be attracted to the difference between the past and the present, and to institute, as far as possible, an inquiry as to results of the ancient prodigal bathing, and the modern non-bathing system. So far as I could detect, the advantage was wholly in favor of the latter. I examined every old tombstone, to find out the average age at death, and the frequency or otherwise of death at an advanced age; but the oldest age recorded was fifty-six, and the majority died ere they had reached thirty. In modern Rome, on the contrary, longevity is common, and the average duration of life little less than in England. Again, there are certain monkish fraternities, who, in the admiration of asceticism, abjure the use of water externally, and if dirtiness of person is prejudicial to health, these ought to be particularly delicate—yet the reverse is generally the case. Nor is it to be wondered at, for the pig who seems to revel in filth, is to the full as healthy and vigorous as the fine lady who devotes an hour a day to her ablutions.

There can be no reasonable doubt that the use of water as a healthful agent has been praised far beyond its deserts, and from this very cause it has been by some decried. The lad upon whom a stern parent inflicts a daily sponge bath of cold water—no matter what the suffering inflicted by the cold and subsequent "towelling"—under the impression that it is good for the health, is very apt, when accident relieves him from the matutinal punishment, to examine whether he is any worse for the omission, and finding that no bad result can be discovered, he will be pretty certain to give the morning misery "a wide berth" as soon as he becomes his own master. The philosopher, however, is not contented with such pendulum-like reasoning, which is now high up on one side, and now on the other side of the perpendicular, and he wishes to ascertain what amount of good there really is to be met with in the use of water externally, in baths and bathing generally.

He very soon recognizes that bathing is a luxury. If he be a traveler, he knows what it is to stand on the brink of a mass of water—himself covered with dust—and to plunge into the attractive fluid,

and roll, dive,or otherwise disport himself in it. He knows how delicious is the sensation of freedom from the gritty dust, or the dirty powder of the high road—his limbs feel easy, and there is a sensation of lightness where none existed before. Sometimes he may see on a hot day a bevy of fair girls, sitting, attired only with some light chemise, sitting up to their necks in a shady pool, or again, a lot of active boys bathing on a summer's day, without a rag to restrain their movements, and seeming to enjoy their freedom from the restraint of civilized life, as well as the coolness of the water. He knows, too, the luxury of a hot bath after a day's incessant toil—the exquisite pleasure of gliding down beneath the surface, till every hair upon the head enjoys a separate existence, and can be felt in pleasing movement as the water surges round it. Bed is pleasant to the tired traveler, but if his limbs ache, and his skin is sore, the pressure of the clothes is painful. In the bath the body sustains itself—it has lost its weight; the arm can sway almost without an effort, and all movement becomes luxuriously easy. There are those, again, who know the life-giving sensation imparted by a shower-bath. After a heavy sleep it may be, which has scarcely served to efface the effects of yesterday's toil, the inexorable alarum, or the house maid's knock, awakes us once again to the round of our daily labor. Mechanically we rise, and stagger to our feet and pass on moodily to the prison-looking chamber which encloses our bath. We then unrobe, step lightly, but valiantly, into the cold closet, and pull the string with desperation, and shiver viciously as the heavy shower patters on our head and shoulders. Doggedly we wait till the end, for as Britons, we scorn to run away from the annoyance we have created for ourselves—and when the drops begin to patter slowly, off we spring, rub ourselves vivaciously, spring into our clothes, and then, for the first time in the day, feel the proud sensation that we have done our duty nobly, and have reaped an adequate result.

As a luxury we allow to bathing its full value, but the estimate does not help us to its curative powers, unless we assume that whatever is delicious to the feelings must be good for the constitution—a postulate which few would grant.

To ascertain philosophically the sanitary importance of baths, it will be well for us to examine into the nature of the skin. This, as we all know, covers our bodies, and is liable to certain changes; in some it seems habitually dry, in others it is continually moist; some parts there are which perspire far more than others, and some which occasionally produce a secretion of peculiar smell. Naturally, the skin, like the hair and nails, is perpetually growing from below, and as the new material is formed, the old material passes away by friction with the clothes. Many are doubtless familiar with the scales which fall from the skin after scarlet fever, erysipelas, and other cutaneous inflammations, but fail to notice that a similar desquamation is constantly going on, though in a less degree. In the substance of the skin are an innumerable number of sweat-glands, whose secretion we can no more arrest than we can stop the growth of a seed by putting a stone just over it when first it emerges to the light; and amongst them there is also a vast number of hair follicces, every one of which is provided with two glands for the secretion of oil. Hence

we deduce that Providence has so constructed our bodies, that they shall always be coated with a thin layer of oleaginous matter. This material is necessarily removed by washing, and consequently ablution is generally followed for a time by a sensation of dryness or want of suppleness, which continues until perspiration ensues.

This dry sensation may be at once relieved by anointing the skin with oil; and no sooner is this fact ascertained, than we remember with interest that the use of oil in hot countries is always conjoined with that of baths. We recall with pleasure the touching scene of the Saviour's feet washed by tears, dried by hair, and then anointed by a precious unguent. We see it used almost as a reproach that the head of the Lord was not anointed by the host, and the busy memory depicts an instance in which the virtue of brotherly unity is compared to the precious oil which anointed Aaron's beard and went down to the skirts of his clothing. The traveler will readily remember one of the rooms he has visited in the bathing establishment of old Pompeii, in which were recesses in the wall wherein the bathers used to deposit their pots of unguent, a portion of which was used by all ere they donned their clothes and revisited the outside world. It may be, that he will then think over the curious experience of life in Abyssinia given to English readers by Mansfeld Parkyns, who relates that his most comfortable hunting and traveling suit in that hot climate was a simple girdle round his loins, and a big pat of butter on his head, which slowly melted and covered him with pleasant grease. The physiologist then recals the fact that the natives of hot countries generally, and certainly that negroes have a skin unusually abounding with oil glands, and which is always covered with a shining coat. We then recall still further that, during the various epidemics of plague which have afflicted the districts about the Mediterranean, those only, as a class, escape the infliction whose skins are habitually covered, and their clothes generally saturated with oil.

Hence the philosopher draws the conclusion that the systematic abstergence of oily matter from the skin, which is inseparable from the prevalent habits of bathing, is a contravention of the laws of Nature. But the answer to this remark will be that the contravention must be unimportant, since no ill effects have ever arisen. This is, however, a mistake, for I have repeatedly known cutaneous eruptions produced, and, when present, aggravated, by the use of a bath when the weather has been hot, and the individual has been perspiring; and, on the other hand, I have known sufferers from these grave maladies to be greatly relieved by the disuse of water and the employment of some artificial greasy covering for the skin.

Having thus given some important information upon the subject of baths in general, we may proceed to speak of particular forms and their special uses, when they have any premising that we do not intend to enter upon their use as agents in the cure of disease. We may for convenience divide what we have to say into remarks upon the plunge bath, the hot bath, the shower bath, and the sponge bath.

The plunge bath may be cold or hot, fresh water or salt, under the canopy of heaven, in a river, or in the sea. If indulged in beneath the roof of some town establishment, the plunge bath is little more than an arena for athletic development; in it the youth can develop muscles which he never thinks of using in the gymnasium. He

learns endurance under different circumstances, and sometimes he may even carry his muscular exertions so far as to bring on sickness or faintness. If, on the other hand, the plunge bath is the flowing river or the briny ocean, the athlete rejoices in pure air and freedom from town influences, as well as in the exercise of his limbs; and often, it must be owned, that the clear genial atmosphere gets no credit for that renovated health which is attributed to dipping in the sea. As a prolonged city life has a tendency to deteriorate the health, so it is certain that country air has a tendency to restore the faded strength, and it will do so whether baths are resorted to or not.

In the preservation of health the hot bath is a great luxury, and no more. It removes the aches and pains of excessive fatigue, relieves the sense of annoyance produced by clouds of dust on a windy day, or "kicked up" by the horses of a traveling carriage. It restores heat to the starved one who has perhaps been on volunteer or other duty during the inclement weather so common in our English climate. Where ladies, men, or children are troubled with an excessive amount of "scurf" in the hair, there is no more effectual cure than a daily hot bath, in which the individual may sit with the hair wholly immersed, and can make it float about like seaweed in a tideway. For those whose circulation is languid the hot bath is an especial luxury; if they stand before a roaring fire they feel that one-half is being frozen while the other is roasting; but to lie in water heated to 104°, with all submerged except the eyes and nose and mouth, is to take in heat on all sides at once, and to enable the individual to defy cold for many an hour. Yet the luxury is too great an one for all to enjoy, and we have known it to produce such faintness as would have caused death by drowning, had not assistance been at hand. This danger seems to threaten females more than men; it is therefore desirable that women should have a bath-attendant with them, until they understand their own powers of endurance.

The shower bath is a rare expedient for sweeping those cobwebs from the eyes and the mind which Morpheus weaves while we sleep. The tired author leaves his pen perchance at an advanced hour of the night or morning, and after a period of tossing about, falls into a heavy slumber, only to awake again half rested, at the inexorable alarum, and to find that he is not in trim for another day's toil. One touch, however, to the magic cord, one wholesome shower on his muddled head, and he is himself again fit for his work, and nerved for any task. What the shower-bath does for him it will do for the overwrought woman; toil, undue exertion of body or heavy trials of the mind, possibly all combined, lead her to feel "unstrung" like a piano out of tune. She is conscious that she does not respond to the touch in a proper note—perhaps she fears that her weakness will constrain her to lose her self-control and become hysterical. To her the daily shower-bath will impart a sensible amount of strength, the jarring chords will be restrung, and the descending water will almost literally "bring spirits from the vasty deep."

A sponge bath seems to me an ingenious contrivance for making some people miserable. On one occasion being tired of reading that it was essential to health, and having, too, some friends who assured me that it was a panacea for every ill, and who in their zeal to im

prove my constitution, which did not require such aid, endeavored to "ding" its use into me, I determined to test the matter anew. During my youth I had endured much misery from it, each day for many years being begun by the hateful infliction; but my energetic advisers informed me that now, when years of maturity had arrived, I should thoroughly enjoy a glorious sponge bath, or what the Oxford men call "doing tubs." Well, I began on the hottest day of summer, and was painfully starved until my avocations permitted me to walk on the sunny side of a street, or bask in the sunshine indoors. This daily infliction I bore as manfully as I could until the winter, at which period I gave up the experiment, not desiring either to write myself down as fool or ass. The sole consolation received from my enthusiastic friends was the remark, "ah, it is clear that the sponge bath does not suit you," a conclusion which I soon expanded into the observation, that there were very few which it did suit, and that those who enjoyed it derived no benefit from it, except as a means of awaking them thoroughly. Some there are whose temperaments are so fiery that they may require to blow off steam by evaporating daily some half pint of water from their naked skins. Such I can well imagine as rejoicing in a cold sponging, but those of ordinary mould will find more comfort in heat than in iciness, and rejoice more in dressing in a cozy room before a comfortable fire, than going from a warm bed to a frigid bath in a chilly closet.

After years of as close observation as I have been enabled to make, the conclusion I have arrived at is, that baths and bathing are not essential to health, that it is even doubtful whether they really conduce to it, but that to many they are positive luxuries, whilst in one form or other they are pleasant to the majority. That of the two, warm or tepid bathing is more comfortable and less dangerous than cold bathing, and that cold bathing is always injurious when it is not followed by a "glow." Even when this occurs, the glow is rather the sign of an active circulation, and an evidence of a certain amount of health already existent, than an increment to be added to the future supply. In medical practice there is no doubt that baths have a decided influence in restoring health; but there is great difference between this and their influence in preventing disease. Whenever, therefore, my opinion is asked about the use of water to the skin, my almost invariable reply is, "if you enjoy baths, use them as luxuries; if you dislike them, you cannot *indulge* yourself by adopting them, and it is certainly not advisable to make yourself more miserable than Nature intended that you should be." Few Englishmen would eat whale's blubber or walrus flesh because the Esquimaux consider it conducive to health and almost necessary to life. Nor can I see any reason why Tom should do something which is distasteful to himself, because Dick and Harry enjoy it.—Lond. *Med. Mirror*, Sept., '67.

Art. XXXV.—*Relation of Heat to Mental Work:* By J. S. Lombard, M. D., Assistant Professor of Physiology in Harvard University.

THE influence of muscular contraction on animal temperature has been very carefully investigated, especially within the past few years; and it has been conclusively proved that a contracting muscle evolves heat. Furthermore, the relation between the heat thus developed and the work performed by the muscle during its contraction has been studied; and it has been shown that the law of the conversion of heat into mechanical work, which has been so firmly established for physics, is equally applicable to living beings; that in these latter, as in our machines, a given amount of chemical action produces less heat when mechanical work is done than when it is not, a portion of the heat being, in the former case, expended in performing the work.

But the relation between *brain-work* and heat still remains undecided, no light having as yet been thrown upon this subject.

The object of the investigations related in this article was to determine the effect of different mental states upon the temperature of the head, this being the first step toward the elucidation of the problem in question.* For this purpose thermo-electric apparatus of a very delicate description, and arranged with special reference to the experiments in view, was employed.

As sources of the electricity, various combinations were used; but by far the most efficient were certain alloys of antimony joined to bismuth. For these alloys I am indebted to Mr. Moses G. Farmer, of Boston, a gentleman well known for his scientific attainments, who, for the past two years, has been studying in a most thorough and able manner a great variety of thermo-electric combinations. Mr. Farmer has kindly furnished me with a number of his strongest alloys, and their combination with bismuth, as the other metal, has furnished the most delicate test for minute variations of temperature that I have ever employed.†

The bars of alloy and bismuth were cast very short and thin, and were set in little wooden caps, which could be fastened securely upon any part of the body. One or more of the batteries thus constituted were placed upon the head, and similar ones were secured to other parts of the body, for purposes of comparison. The wires from these different batteries passed to binding screws set into leather straps, which were fastened to the body at convenient distances from the batteries. From the binding screws heavier wires passed off to an instrument placed by the side of the observer, by which he could control the currents proceeding from the different batteries. This instrument consisted of a mercury pole-changer, switches, acting also by means of mercury-cups, and a rheostat. By means of the switches the experimenter was enabled by a touch of the finger to modify his investigations in the following ways: He could allow only

* The only experiments that appear to have been made on the effect of mental exertion upon animal heat are a few by Dr. Davy; but so many sources of error are involved in the methods which he pursued, that his conclusions must be accepted with a great deal of reservation.—J. Davy, *Physiolog. Researches*, pp. 18 and 51.

† Mr. Farmer has since acquainted me with still more powerful combinations, which I hope to soon apply to the study of animal heat.

one of the currents to pass through the galvanometer, thus obtaining the temperature of the particular part of the body only from which this current came; or he could send any two currents through the galvanometer in opposite directions, obtaining thus the difference of temperature between the two portions of the body from which the currents proceeded. The rheostat and pole-changer permitted him to weaken and change the direction of the currents at pleasure.

The galvanometer was connected by stout wires with the above described instrument, and was a very sensitive, astatic one. It was placed at a distance of several feet from the observer, its dial being magnified so that the slightest movement of its needles could be readily detected.

An *extra* current, the intensity of which could be regulated with great nicety by means of a special apparatus designed for the purpose, was employed, as occasion required, to bring back to the zero of the dial the needles of the galvanometer when deflected too far from that point. The delicacy of astatic galvanometers diminishes very rapidly as the needles are deflected from the zero point, and hence the necessity of this extra current. A second astatic galvanometer tested the strength of the latter current, thus insuring its constancy in a given experiment; a matter of the greatest importance, inasmuch as the least variation in its intensity would have been fatal to the accuracy of the results.

The above description includes all the more essential parts of the apparatus employed. By it, less than a thousandth part of a degree of Centigrade could be detected, a single pair of the combination used being capable of noting a five-hundredth of a degree.*

The experiments now to be given were all made upon myself, and have extended over the space of a year. They are, however, but a part of those which have been made in that time, many having been withheld for further examination.

The object of the first series of investigations was to study the temperature of the head, while sitting quietly by myself, with no special mental occupation.

Under these circumstances, it was found that while the temperature of the head was in some instances quite steady, in others it was very variable, rising and falling, often with great rapidity. The variations were slight, not amounting, as a rule, to more than a hundredth of a degree of Centigrade; but still they were very marked, if some other portion of the body was taken as a standard of comparison; thus the temperature of the leg or arm varied, if at all, within much narrower limits.

What the exact cause of these irregularities was, could not be determined with certainty; but the conclusion arrived at from a great many observations was, that this variability of temperature was connected with certain conditions of the mind. It was found that, in those cases in which the temperature was steady, the mind was, as a rule, in a more or less torpid state, such as persons are apt to fall into after a hearty meal; while in the cases in which variabil-

* In the use of such delicate apparatus, a great deal necessarily depends upon the skill and experience of the observer, and long practice is often required to insure accuracy.

ity of temperature existed, the mental condition was one of much greater activity. The effect of a transition from the former to the latter condition was frequently shown, under the following circumstances:

It often happened, when the mind was in the state of inactivity mentioned, that one or more persons would enter the room in which the observer was seated, and a short conversation ensue. The subjects of conversation were of no particular interest, and required no reflection; but nevertheless, in a few minutes the temperature, which had previously been steady, would begin to vary, rising and falling, but with a general upward tendency.

This change was not due to the muscular exertion of talking, for it manifested itself when the observer took no part in the conversation; merely listening to the words of others, and saying nothing himself. Nor was it owing to any effect produced upon the circulation by modification of the action of the heart, for in this case other portions of the body would have been influenced likewise, whereas it was found that the head alone was affected, other parts situated full as favorably, if not more so, for feeling any such influence, exhibiting little or no change of temperature. Whatever the cause was, it certainly appeared to have its seat in the head.*

Pursuing these experiments farther, it was found that *anything that aroused the attention* was capable of causing a greater or less rise of temperature on the part of the head, over and above that of the rest of the body. Various sights and sounds had this effect; and, indeed, it could be produced in a great variety of ways.

In the next place, the effect of the exercise of the higher reasoning powers was investigated. The results of these experiments were as follows:

First. Mental action of this sort caused a rise of temperature on the part of the head, which varied very much in different cases; the highest rise noticed did not exceed the twentieth of a degree.†

Second. The temperature of the extremities fell, sometimes only slightly, but at other times very decidedly—a half or a quarter of a degree of Centigrade, for example. This fall was doubtless owing, in part, to the absence of muscular exertion consequent upon sitting still; but not entirely so, for mere immobility, without mental exertion, did not produce an equally great effect.

A large number of observations were also made upon the effect of the reading of different literary productions. Provided the work did not particularly excite the interest or arouse the emotions of the reader, either no effect at all was produced, or else the temperature was slightly depressed. But with productions of an opposite description a very different result was obtained. In these cases the temperature was very speedily and visibly elevated.

The most striking effects of all were produced by the reading aloud, or the recitation of poetry. The rise of temperature in this case was not due in any appreciable degree to the muscular exertion

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* It is almost needless to say that, in all these experiments, changes of position, or any other disturbing cause, were carefully avoided.

† With delicate thermo-electric apparatus it is impossible to estimate accurately the thermometric values of the variations observed; the most that can be done is to make an approximation.

involved, for mere mechanical recitation produced no effect; but the moment the interest of the speaker began to be awakened, the temperature rose.

Although the action of the heart was frequently more or less modified, yet this could not account for the rise of temperature, inasmuch as other parts of the body ought, in such a case, to have shared equally in the rise, whereas it was the head that was chiefly, if not solely, affected. Reading or reciting to one's self gave similar results, and often even in a more marked degree.*

The rise of temperature in this series of experiments was the highest noticed in all the observations given in this article; a few minutes' recitation producing a greater effect than several hours of deep thought.

In conclusion, I would say that, as regards the particular regions of the head in which the elevation of temperature was most marked, it was generally found that the best results were obtained just above the occipital protuberance. This statement applies to all the experiments that have been related. In the last-mentioned series of observations it was not unfrequently found that the temperature of the forehead *fell*, while that of the back of the head *rose*, but for what reason I have not yet been able to determine.—*New York Med. Jour.*, June, 1867.

Editorial.

Health of the City.

The absorbing topic of professional interest, throughout the Southwest, during the present season, is the epidemic of Yellow Fever, and we should not do justice to our patrons in this portion of the country, nor to our more distant readers, to ignore it at this time. The malady is still prevailing, and it is of course impossible now to take a complete view of its progress; this must be reserved for a future issue. For the present we shall speak only of its most striking characteristics, and of its progress since the publication of the last number.

Each manifestation of an epidemic disease presents individual traits, to distinguish it from others of the same malady; and the

* The success of these experiments must depend, in a great measure, upon individual peculiarity; and with many persons they would doubtless fail. *Real emotion* must be awakened to produce the rise of temperature. Where this condition of the mind existed, out of more than a hundred observations, I have never known a failure.

yellow fever of 1867 will be long remembered for its well marked peculiarities. We have before spoken of the early appearance of sporadic cases, and its late establishment in an epidemic form. The mildness of the type generally prevalent here was alluded to, as well as its inclusion of negroes among its subjects. To a confirmation of these traits it may now be added that this epidemic of the fever is the most sweeping one ever known in the history of our city. No class of the population can this year claim or expect exemption from its ravages. It was generally supposed that natives of the city enjoyed an immunity, and that those born and raised in the vicinity possessed it in proportion to their contiguity. It was also believed that one attack was a fair guarantee against all future danger from the fever. This year it has violated these precedents most incontestably, and in numerous instances. Infants at the breast have appeared to be almost as susceptible to the infection as any other people, though most have experienced very light attacks; but bad cases have not been wanting, and, in the writer's practice lately, occurred a case of black vomit in an infant only one month old.

Secondary attacks, formerly considered rare exceptions, have this year been found numerous and well attested. Even some who were known to have the fever in 1853, have again had well marked attacks. It is to be remarked, however, that these secondary cases have been, almost without exception, tractable ones, and have terminated favorably. The absence of large numbers from the city during the war is supposed to have cost them the immunity previously acquired, and rendered them measurably susceptible again to the infection.

We are not aware that any new light has been thrown upon the vexed questions of contagion and portability, nor that its introduction from abroad has been established with any degree of credibility. The quarantine has been maintained throughout the epidemic, at the mouth of the river, and it is certain that, under the present system, it has proved inoperative to debar the disease. Whether any different system would be more efficacious is yet problematical, and it does not seem probable that the question will soon be decided.

The following table, based on official returns to the Board of Health and the municipal authorities, and borrowed from the *Crescent* newspaper, exhibits the daily mortality for September and October and meteorological observations for October. The mortality reports are compiled from the sextons' returns of interments at the several cemeteries, and include some individuals who died in the

suburbs, but not those in the military service. These exceptions, however, do not materially affect the result. It is to be observed that the figures for each day give the number of interments for the twenty-four hours ending at 6, a. m., of the same date :

DATE.	Yellow Fever.	Various diseases.	TOTAL.	DATE.	THERMOMETER. 8 A. M.	1 P. M.	6 P. M.	Midnight.	WEATHER	Yellow Fever.	Various diseases	TOTAL.
Sept'ber 2....	26	27	53	October 2	79	81	79	81	Changeable	54	38	92
.. 3....	25	29	54	.. 3	81	85	82	82	Cloudy....	56	41	97
.. 4....	28	16	44	.. 4	81	79	80	77	Stormy...	75	32	07
.. 5....	44	23	68	.. 5	79	84	82	74	Fair.....	59	31	190
.. 6....	30	24	54	.. 6	63	75	76	73	Changeable	60	37	97
.. 7....	43	23	66	.. 7	73	75	74	74	Fair.....	58	32	90
.. 8....	49	17	66	.. 8	72	78	74	73	Very fair..	50	26	76
.. 9....	51	26	78	.. 9	71	81	77	76	Very fair..	64	34	98
.. 10....	42	18	60	.. 10	74	78	76	72	Very fair..	56	46	02
.. 11....	67	18	86	.. 11	76	79	78	72	Very fair..	49	34	183
. 12....	61	28	89	.. 12	69	76	75	78	Very fair..	46	42	88
.. 13...	43	21	64	.. 13	60	69	68	65	Very fair..	32	29	61
.. 14....	41	22	63	.. 14	62	73	70	66	Very fair..	33	25	58
.. 15....	53	27	80	.. 15	66	75	73	68	Very fair..	39	22	61
.. 16....	50	30	80	.. 16	64	..	76	73	Very fair..	28	23	51
.. 17....	68	34	02	.. 17	65	79	76	71	Very fair..	31	24	55
.. 18....	46	24	171	.. 18	68	..	..	..	Very fair..	34	25	59
.. 19....	55	37	92	.. 19	67	79	75	69	Very fair..	35	32	67
.. 20....	66	25	91	.. 20	68	76	76	72	Very fair..	35	25	60
.. 21....	64	32	96	.. 21	70	81	79	73	Very fair..	31	22	53
.. 22....	69	44	13	.. 22	70	82	79	74	Very fair..	13	22	35
.. 23....	77	35	112	.. 23	67	70	72	69	Very fair..	18	31	50
.. 24....	82	51	133	.. 24	63	75	73	71	Changeable	19	28	47
.. 25....	68	33	101	.. 25	69	76	72	71	Changeable	17	21	38
.. 26....	57	28	185	.. 26	71	72	72	70	Very Rainy	12	16	28
.. 27....	77	30	07	. 27	67	68	66	64	Rainy ...	10	21	31
.. 28....	67	36	103	.. 28	64	66	61	..	Cloudy....	16	23	39
.. 29....	61	32	194	.. 29	58	68	66	64	Very fair..	11	26	37
.. 30....	64	32	96	.. 30	61	68	65	57	Very fair..	9	23	32
.. ....	..	..	..	.. 31	52	..	..	..	.....	13	18	31
October 1....	63	34	97	Nov'ber 1	56	..	..	..	.....	9	20	29

As in former epidemics, the *Howard Association* have been active in their mission, to relieve the wants of the sick and destitute, and the gratitude of this impoverished community is due those Northern friends who have, with free hand and open purse, promoted the efforts of our self-sacrificing citizens. The Medical profession have freely responded to all demands for their services, and the means at the disposal of the Association have enabled them to supply medicines and subsistence wherever they were required. The writer can testify, from personal observation, to the immeasurable benefits of these well-directed efforts.

At this date (1st Nov.), and while the days of the present visitation of yellow fever can almost be numbered, another not less dreadful destroyer seems desirous to renew his ravages. Last year the cholera was predominant—for a short time almost epidemic—while the fever modestly stood in the background; but its blows, though few, were severely felt. This year the cholera early presented a threatening aspect, but had the courtesy, in its turn, to yield precedence to its old rival, and for weeks was scarcely heard or thought of. Now that the fever is about ready to withdraw from our midst, whether from want of subjects or before the advance of its invincible frosty foe, the cholera has quite lately knocked at our doors and called several victims to the "undiscovered country" beyond the portals of "the silent halls of death."

What may be the purport or event of this menace, lies not in human wisdom either to predict or to control. Much may be done by way of hygienic precaution, much by sanitary regulations, but the spell is not put down at human bidding, and its mystery is still unsolved.

To the Subscribers and all Patrons of the New Orleans Med. and Surg. Journal.

EXPERIENCE having fully established, that the profession will not adequately support more than one first-class Medical Journal in this city, it has been decided to unite ours with the *Southern Journal of Medical Science*, and by this combination to form one Journal, amply securing, both for the present and the future, its complete independence of all societies, cliques, and colleges. It will be devoted solely to the cultivation of science, and therefore to the interest and honor of the profession at large.

The undersigned, returning to New Orleans on October 10th after an absence of fifteen months, purchased on October 25th from his old and valued associate, Dr. Wm. C. Nichols, all of his interest in this Journal, thus becoming its sole proprietor, and on October 30th, 1867, it, with all its assets, etc., was sold to Dr. W. S. Mitchell, for the purpose of effecting the combination referred to. This new Journal, an unfettered and independent offspring of the two old ones, will make its first appearance with the New Year, under the able editorial management of Drs. S. M. Bemiss and W. S. Mitchell.

Confident, that this arrangement is not only to the benefit of all directly concerned, but calculated also to promote peace and good will among ourselves, and all the worthy interests of the profession, I cordially bid the new enterprize God-speed, and believe that no entreaties of mine are needed to induce our many patrons and friends, to support it with cordial hearts, and generous hands.

In terminating my connection with this Journal, a word of apology is due to many of its subscribers. Circumstances unexpected and beyond my control prevented that devoted personal attention to its interests, which was relied on when its publication was resumed. The entire responsibility was thus thrown on my partner, who, ruined by the war, found it absolutely necessary to accept the many obligations imposed on him, as a Physician in active practice, as Demonstrator, as City Physician, and as the Manager of this Journal. On my return, I found him not only worn out by these innumerable duties, but also broken down by yellow fever, attended with a relapse, and still more trying, by attendance on much sickness at his own fireside. Thus the correspondence of this Journal for months past had accumulated on the desk, by the day of my return after a long absence, and when very many other and more important duties imperatively demanded every moment of my time.

This frank statement will, I feel confident, suffice my subscribers, who fortunately are also my professional brethren, as a satisfactory explanation of all deficiencies, and more especially of the neglect shown recent correspondence, and of the inaccuracies which may have crept into the accounts of some subscribers. These last will be corrected cheerfully, and as promptly as they may be proved.

Serious omissions have resulted from the fact, that in 1866 Wharton and Sandcliff, now E. C. Wharton & Co., of No. 88 Common street, New Orleans, were appointed collectors for this Journal, and especially for the State of Texas. This firm entrusted these collections in Texas to a Mr. McArthur, who has failed to account to Wharton & Co., for the collections made by him, as also to report the names of those subscribers from whom he collected. Thus all Texas subscribers who have paid McArthur, have no such payments to their credit. Mr. Wharton acknowledges his responsibility for these, but it is indispensable that the receipts of McArthur should be forwarded to the proprietor of this Journal, who will promptly accept them as payment for the time designated.

All the bills due are enclosed in this number, and are copied from the Register. They are the property of the present proprietor, Dr. W. S. Mitchell, to whom all letters should be addressed, and all money remitted. Let me hope that my estimate of the value of these debts has not been so great as to bring discredit on my debtors and myself, as also misfortune on my successor.

He has found, that which years of experience has amply proved to me, that no Medical Journal can be successfully conducted on any other system, than that of payments in advance; a principle which will not only be recorded in *letters* on the title page of the future Journal, but will also be rigidly enforced *in fact*, on the cash book. To those of our subscribers who have paid in advance, the new Journal will be sent to the date paid for. To those who have not paid in advance, the January number may be sent, but no subsequent number will be forwarded, until the terms of subscription have been complied with.

In retiring from all active participation as Editor or Business Manager, in Medical Journalism, in taking leave of its vexatious and ill-requited duties, it is proper to recall the only pleasure connected therewith, the memory of the cordial encouragement, and able support, freely, and generously bestowed, by not only my various and valued colaborers, but also by many, and often unknown friends and subscribers. To them all, long and grateful thanks, which though briefly and ineloquently expressed, are not the less, perhaps all the more, *heartfelt!*

STANFORD E. CHAILLÉ.

Notice.

A RECENT robbery has stripped this office of nearly all its back Nos., and will prevent the supply of almost all copies, except those of the present volume.

Two subscribers, viz., Dr. Blocker, and Dr. R. E. Jackson, are credited on our books for one year's subscription, but no post office is given, and until this be supplied, the copies due them cannot be forwarded.

Medical Prizes.

[AT the request of a member of the committee, we give place to the following announcement. Some of our subscribers may be desirous of competing for such liberal offers, and we are of opinion the exten-

sive use of quinine in the South-west must have afforded them a knowledge of the drug well worth communicating to the medical world :]

PRIZES OFFERED BY THE CONNECTICUT MEDICAL SOCIETY FOR 1868.

The undersigned, a Committee of the Connecticut Medical Society, offer, in behalf of said Society, the following Prizes, to be awarded in May, 1868, viz: They renew the offer of the Jewett Prize of Two Hundred Dollars, for the best essay on the question, "*By what hygienic means may the health of armies be best preserved?*"* They also offer the Russell Prize of Two Hundred Dollars, for the best essay on the subject "*The Therapeutic Uses and Abuses of Quinine and its Salts.*"

The offer of both these prizes is extended to all physicians and surgeons of the United States, and of the British Provinces of North America. In awarding the Prizes, the Committee will feel authorized to regard the literary merits, as well as the professional and scientific value of the papers submitted; and should none be received which they think worthy of such generous prizes, they may take the liberty of withholding their decision until the offer can be renewed.

Competitors will send their essays, free of expense, to one of the committee, on or before the first of March, 1868, each having on it a motto or device, which shall also be written or placed on a sealed envelope, inclosing the writer's name and address. The unsuccessful essays will remain with that member of the committee in whose hands they were originally placed, subject to the order of their respective authors.

[It has been stated, that a degree of health which is unusual prevailed in the Union armies during the late war, and the mortality from disease was much below the average in the great military campaigns of Europe. Is there truth in the statement? If true, to what extent is it so, and why is it? What are the facts? What is the explanation? These are transcendently important questions, to which the Committee can find no answer in the essays which have been offered for the Jewett prize. They would not presume to direct the inquiries of competitors; but in this way, (parenthetically, as it were) suggest a topic for consideration.]

BENJAMIN H. CATLIN, M. D., of West Meriden,
LEONARD J. SANFORD, M. D., of New Haven,
HENRY BRONSON, M. D., of New Haven,
MELANCTHON STORRS, M. D., of Hartford,
CHARLES L. IVES, M. D., of New Haven,
} Committee.

Died,

IN New Orleans, Sept. 23d, 1867, of the prevailing epidemic, Dr. FREDERIC PECK, æt. 28 years, a native of Greensboro', Ala.

[DR. PECK came to the city and settled for practice about the beginning of 1866, was gradually and surely growing into favorable notice, and had lately entered on his duties as health officer of the Fourth District. Modest almost beyond the limit which belongs to true merit, he will be remembered chiefly from the amiable social qualities which won him good will on every hand, and made friends of all who knew him.]

* Those who forwarded essays on this question last year, are requested to let them remain until a decision is made, or recall them, through a friend, for alteration.

List of Journals Received.

The London Lancet (reprint, N. Y.)—August, September.
Medical Times and Gazette (London)—Aug. 24, 31; Sept. 7, 14, 21, 28; Oct. 5.
Gazette Médicale (Paris)—August 17, 24, 31; Sept. 7, 14, 21, 28.
Journal de Médecine et de Chirurgie Pratiques (Paris)—Sept., Oct.
Chemist and Druggist (London)—Sept. 14.
Druggists' Circular (New York)—Sept., Oct.
Atlanta Medical and Surgical Journal—Sept., Oct.
The Cincinnati Lancet and Observer—Sept., Oct.
Medical and Surgical Reporter (Phila.)—August 31; Sept. 7, 14, 21, 28; Oct. 5.
The Medical Reporter (St. Louis)—Sept. 1, 15; Oct. 1, 15.
The New York Medical Journal—Sept., Oct.
The Richmond Medical Journal—Sept.
The Medical News and Library (Phila.)—Sept., Oct.
The Boston Medical and Surgical Journal—August 22, 29; Sept. 12, 19, 26; Oct. 3, 10, 17, 24.
Buffalo Medical and Surgical Journal—August, September.
The Chicago Medical Examiner—October.
American Journal of Science and Art (Silliman's)—Sept.
The Galveston Medical Journal—Sept., Oct.
Nashville Journal of Medicine and Surgery—Oct.
The Dental Cosmos (Phila.)—Sept., Oct.
The Detroit Review of Medicine and Pharmacy—Sept.
Boston Journal of Chemistry—Sept. 1.
The Western Journal of Medicine (Indianapolis, Ind.)—Sept.
Humboldt Medical Archives—Sept.
DeBow's Review (New York)—July and August.
Journal de L'Anatomie et de la Physiologie (Paris)—Sept. et Oct.
The Medical Gazette (N. Y.)—Sept. 28; Oct. 12, 19.
Gazette Médicale de Strasbourg—August 25.
The Pacific Medical and Surgical Journal—Sept.
Quarterly Journal of Psychological Medicine and Medical Jurisprudence—Oct.
The American Journal of the Medical Sciences—Oct.
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The Medical Mirror (London)—Sept, Oct.
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Books and Pamphlets Received.

Minutes of the Proceedings of the Fourteenth Annual Meeting of the Medical Society of the State of North Carolina, held at Turboro', N. C., 15th May, 1867.

Catalogue of the University of South Carolina. 1867.

A Treatise on Human Physiology; designed for the Use of Students and Practitioners of Medicine. By Jno. C. Dalton, M. D., Prof. Physiology and Microscopic Anatomy, Coll. Phys. and Surg., New York, etc. Fourth Edition, revised and enlarged 8 vo., pp. 695. Philadelphia: Henry C. Lea. 1867.

The Physiology of Man; Designed to represent the Existing State of Physiological Science, as applied to the Functions of the Human Body. By Austin Flint, Jr., M. D., Prof. Physiology and Microscopy, Belleview Hospital Med. Coll., New York, etc. ALIMENTATION; DIGESTION; ABSORPTION; LYMPH; CHYLE. 8 vo., pp. 556. New York: D. Appleton & Co., 443 and 445 Broadway. 1867.

Chemistry. By Wm. Thos. Brande, D. C. L., F. R. S. L. and E., etc.; and Alfred Swayne Taylor, M. D., F. R. S., etc. Second American Edition thoroughly revised. 8 vo., pp. 754. Philadelphia: Henry C. Lea. 1867.

Injuries of the Eye, Orbit and Eyelids: their Immediate and Remote Effects. By GEORGE LAWSON, F. R. C. S., Eng.; etc. *With numerous Illustrations.* 8 vo., pp, 408. Philadelphia: Henry C. Lea. 1867.

Studies in Pathology and Therapeutics. By Samuel Henry Dixon, M. D., L. L. D. Prof. Practice of Physic, Jeff. Med. Coll., Phila., etc. 12 mo., pp. 201. New York: William Wood & Co., Publishers. 1867.

The Medical Uses of Electricity, with Special Reference to General Electrization as a Tonic in Neuralgia, Rheumatism, Dyspepsia, Chorea, Paralysis, and other Affections associated with General Debility. With Illustrative Cases. By Geo. M. Beard, M. D., and E. D. Rockwell, M. D. 12 mo., pp. 65. New York: William Wood & Co., publishers. 1867.

Clinical Lectures on the Principles and Practice of Medicine. By John Hughes Bennett, M. D., F. R. S. E., Prof. Institutes Med., and Senior Prof. Clin Med., Univ. Edinburgh, etc. Fifth American from the fourth London Edition, with 537 Illustrations on Wood. 8 vo., pp. 1022. New York: William Wood & Co. 1867.