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Edited by Sir JOHN MOORE, B.A., M.D., Univ. Dubl. ; F.R.C.P.I.

THIRD SERIES.

No. 386.



FEBRUARY,

1904.

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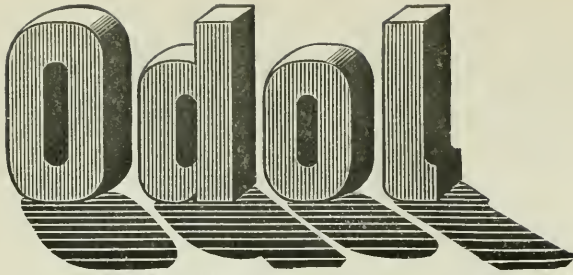
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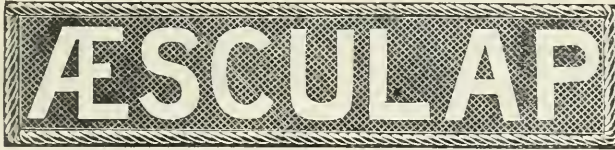
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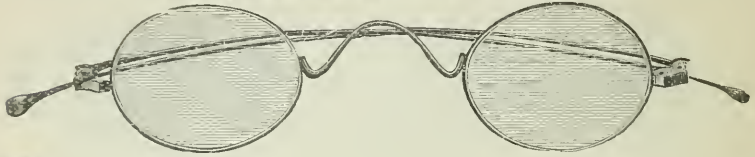
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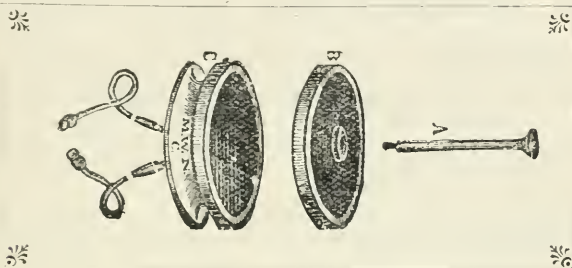
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# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

FEBRUARY 1, 1904.

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### PART I.

#### ORIGINAL COMMUNICATIONS.

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ART. III.—*Medico-Legal Notes from India.*<sup>a</sup> By W. J. BUCHANAN, B.A., M.B., B.Ch., D.P.H., M.D. (Univ. Dubl.); Major, Indian Medical Service; Inspector-General of Prisons in Bengal; and Editor, *Indian Medical Gazette*.

It is proposed in the present thesis to collect some notes from my own observations and inquiries on certain aspects of Medical Jurisprudence in India, which differ in many respects from European, and especially English, experience.

Medical Jurisprudence is a subject of great importance to the European who practices medicine in India. If he is a member of the Indian Medical Service he will probably soon go into "civil employ," and when thus employed he will be the chief medical authority for a very large district, with a population of not less than a million inhabitants, and will be called to give his opinion on all questions of legal medicine that may arise in this large area.

The first subject which I propose here to deal with is POISONING—a very common crime in the east.

There is probably no country in the world that affords anything like the amount of toxicological material that India

<sup>a</sup> A Thesis for the Degree of M.D. in the University of Dublin, December, 1903.

does. Every year more than ten thousand cases are referred to the Government analysts, or chemical examiners, as these officers are called in India; and in one Calcutta hospital not less than 150 cases of poisoning are treated every year.

Broadly speaking, the poisons most employed for criminal purposes are arsenic, chiefly for homicide; opium chiefly for suicide and for infanticide; and datura for drugging with a view to robbery.

#### ARSENIC.

There are many reasons why arsenic should be the chief poison used for homicide. In the first place, it is easy to be obtained everywhere; secondly, the acute effects of the poison so much resemble an attack of Asiatic cholera that suspicion is less likely to arise, especially if it happens that cholera is at all prevalent in the neighbourhood at the time.

All forms of arsenic may be used for criminal purposes, but white arsenic, arsenious oxide ( $\text{As}_2\text{O}_3$ ), is the form most commonly employed. Its colour is white; it has but little taste when mixed with sugar, sweetmeats, bread or rice, in which vehicles it is usually administered. As has been said white arsenic is easily purchased in every bazaar, as it has its legitimate uses—*e.g.*, as a preservative of wooden posts against the attacks of white ants, in the making of leather, and in curing hides and skins. It is also largely used for destroying vermin, and as a medicine in the treatment of syphilis, and in the more chronic forms of the malarial fevers. White arsenic is called in the vernacular languages *somul*, or *sumbhul*, and is largely imported from Hong Kong and Persia. On account of the difficulties of enforcement, and in spite of considerable medical agitation in its favour, there is no Sale of Poisons Act in many parts of India, and indeed the experience of the Province of Bombay, where such an Act was passed nearly forty years ago, is scarcely in favour of such legislation. By this Act the sale of arsenic was regulated by licence, and it was ordered that when pounded white arsenic was sold to the public it must be coloured with soot, indigo, or Prussian blue. That this enactment has been totally inoperative from a medico-legal point of view is clear from the statement of the Bombay Government Analyst that in the past 32 years there has not been met a single case in which

the arsenic used for criminal purposes has been found coloured as directed in the Act.

The sulphides of arsenic are less commonly used for the purposes of crime in India. Moreover, as they are commonly impure—in the state purchasable in the bazaar—and mixed with arsenious oxide, it is probable that their poisonous activity is largely due to the latter substance. It is curious, however, that a very large proportion of the cases in which the sulphides have been used have been suicidal.

In other instances arsenious oxide has been found mixed with the sulphates of iron and copper and with the sulphide of mercury.

An important point in the criminal use of this drug, and one which often leads to its detection, is the enormous dose usually administered by the criminal to the victim. I have examined a case in which the quantity was so great that I was able to scrape it off the walls of the stomach with a knife.

The motives which lead to the use of arsenic for homicidal purposes are chiefly revenge and sexual passion. Husband poisoning is commonly effected by the use of arsenic, and in some cases it is certain that the powerful drug was only used as a "love philtre," or as an aphrodisiac, and with no criminal intent. It is also an undoubted fact that in times of cholera prevalence arsenic is used as a means of getting rid of an enemy or a rival, in the many disputes which the land hunger of the Bengal peasant leads him to be involved.

Arsenic is less commonly used as an abortifacient, and usually with disastrous results. In such cases it is commonly applied as a mass of paste to the os uteri.

This poison is but seldom used for suicidal purposes, but when so used it is in very large doses; as much as 300 grains have been recovered in such a case, though, as said above, the mere fact of such enormous doses by no means negatives a homicidal view of the case.

Of course cases of accidental poisoning are not infrequent, owing to the common use of arsenic in the arts, and as a medicine. I have had charge of one case in which a native gentleman who suffered much from fever, and could or would not take quinine, accidentally poisoned himself by the continued use of Fowler's solution in very large doses (40 to 80 minims).

Arsenic is also very largely used as a cattle poison, though in the United Provinces its place is taken by the use of dried snake poison inserted under the skin on a piece of sharpened iron or wood.

The symptoms of acute arsenic poisoning are too well known to be here treated of, but certain noteworthy facts are to be mentioned.

In a few rare cases where death from shock has resulted the stomach has shown no signs of congestion, and has even contained a large quantity of solid and liquid food, vomiting not having occurred.

In a series of 191 cases of arsenic poisoning four have been recorded in which death took place within two hours, and in none of these was any appearance of congestion found. It would appear as if more than two hours contact were required to produce the appearances of congestion.

Endocardial lividity is also an appearance to be looked for. In a series of 33 Indian cases in which it was searched for it was present in eight.

As the decomposition of dead bodies is very rapid in a hot climate it is important to remember that the so-called anti-septic action of arsenic is confined only to the stomach and intestines, the other organs being as subject to rapid decomposition as in death from any other cause. Perforation of the stomach in arsenic poisoning is rare, but a few cases have been recorded in India.

The so-called "nervous cases" of arsenic poisoning are of importance, as they may be very misleading. As an example may be quoted the case of a man, aged thirty, to whom a poisonous dose of arsenic was given. He suffered from giddiness, faintness, coma, and suffused conjunctivæ, but had no vomiting or diarrhœa, and he recovered. In another case all the usual symptoms of irritant poisoning were present except purging.

The onset of symptoms in acute arsenic poisoning is generally rapid—that is, within half an hour. Bedford, an authority on Indian poisoning, gives 18 to 20 hours as the average period which elapses before death, and states that 82 per cent. of cases die within the first 24 hours. On the other hand, cases are on record in which symptoms did not appear for 14 hours, and death in the case of a single lethal dose has been delayed

as long as nine days ; and even longer intervals are recorded in European text-books. In some such cases the delay has been explained by the fulness of the stomach, by sleep, or by intoxication by opium or alcohol. In one case, however, recently recorded in India, where all such causes could be eliminated, no symptoms appeared for 14 hours. Another remarkable case is worthy of mention, where, in Bombay, a Parsee recovered after having swallowed "two masses" of arsenious oxide ; he passed, per rectum, no less than 105 grains. His only symptoms were slight diarrhoea, drowsiness and headache.

Arsenic is not invariably fatal, even when taken in poisonous doses, for in eight consecutive cases treated at the Calcutta Medical College Hospital five recovered.

#### OPIUM.

The next most important poison in Indian Medical Jurisprudence is opium. It is calculated that 40 per cent. of Indian poisonings are due to this drug.

Opium is but seldom used for homicide or for robbing ; it is the drug *par excellence* for suicide. It is also not rarely used for infanticide, and is not uncommonly the cause of the accidental deaths of children from its too frequent use to keep babies quiet. Moreover, owing to the frequency of the opium-eating habit, the drug may easily get into the hands of children with often serious results.

Poisoning by opium is frequently met with in hospital practice. In 193 consecutive cases of poison treated at the Calcutta College Hospital there were no less than 165 due to opium, and of these 42 per cent. died. This high percentage, in spite of a most complete and ever-ready system of treatment, points to the fact that most of them were cases of determined suicide, where large doses were taken late at night, and the victims were found in an advanced state of poisoning in the morning.

In the above 165 cases crude bazaar opium was used, except in one, where the tincture of opium was used. I may note, in passing, that the large experience of the Calcutta Medical College Hospital is not in favour of atropin as an antidote in such cases.

The symptoms of opium poisoning are well known, but it is less recognised that vomiting and diarrhœa are sometimes present; and tetanus and lock-jaw symptoms have been observed in the case of children poisoned with opium, and the occurrence of such might well mislead the medical attendant.

Opium is usually swallowed, but in some parts of India suicide has been attempted by the introduction of opium into the vagina.

It is seldom possible to find out the exact quantity taken. Taylor has recorded a case of fatal issue from four grains, and this is usually regarded as a lethal dose. On the other hand recovery has taken place after even very large doses. A curious case has lately been published where seven grains of opium were taken along with croton oil. The symptoms were entirely those of an excessive dose of the oil, and as severe as if no opium had been taken.

Opium and its preparations are ingredients of a large number of so-called patent and quack remedies, hence poisoning from it may in this way often accidentally occur. One of the most important patent preparations containing opium is chlorodyne, which is so largely used as a domestic remedy in India that a similar preparation has recently become official in the British Pharmacopœia. Owing to the amount of morphin in chlorodyne it is generally assumed that in cases of poisoning the pupils would be contracted. As a matter of fact, however, it has been recently pointed out by Powell, the Police Surgeon of Bombay, that in five recent cases met with by him the pupils were found widely dilated, owing to the not inconsiderable quantity of hydrocyanic acid used in these preparations.

#### DATURA POISONING.

The use of datura is in a special degree an Indian method of poisoning. The seeds are chiefly used, and are derived from the white and black varieties of the plant (*D. alba* and *fastuosa*), which are everywhere common in India.

The symptoms of datura poisoning are very similar to those of belladonna. It is very seldom used for homicidal purposes; but owing to a widespread belief among the natives that it is merely intoxicating a fatal issue sometimes results from its too liberal use.

Datura is usually given to produce a sufficient degree of insensibility to facilitate robbery and theft. The story told by the victims is almost always the same. It is to the effect that a party of villagers are travelling along a road; towards evening they are met by another party of presumed travellers. One or more of the new arrivals are dressed as Brahmins, or men of high and holy caste. They make themselves agreeable, and before dark the whole party settles down to camp out for the night. One of the robbers proposes that as he is a Brahmin he will do them the honour of cooking for the whole party. The compliment implied is too great to admit of any refusal, and the supposed Brahmin sets about preparing the evening meal of rice and pulses. In cooking he easily manages to add a quantity of datura seeds to the mess prepared for his victims. About half an hour after the food has been eaten the symptoms of poisoning appear, and soon result in a state of stupor and coma, during which the victims are helpless, and easily robbed. When they come to their senses a few hours later the robbers are far away, and with them the valuables of the deceived travellers.

In certain cases a decoction of the datura seeds is used, on the drinking of which the symptoms come on almost immediately. About 100 seeds are sufficient for even a fatal issue, so that a lesser number will suffice to produce the necessary stupor and delirium. The seeds of datura have a strong naked-eye resemblance to capsicum seeds, so much used in native cookery, hence the appearance of the poisonous seeds is not noticed.

The medical expert can, however, easily distinguish the datura seeds from those of capsicum. First, because of the peculiar ear-shaped marking on section, and secondly because a solution of the seed of datura, even in an extreme dilution, will dilate the pupil of a rabbit or dog. Bedford has also recently pointed out that the testa of the datura seed has a quite peculiar microscopic appearance.

This form of poisoning for robbery has, to an almost complete extent, taken the place of the strangling method of the Indian thugs or road robbers of an older time. Datura poisoning is now almost altogether in the hand of professionals, and such are to be found all over India. Quite recently a gang

was discovered at the Howrah Railway Station in Calcutta. They were headed by a native policeman, and they confined their operations to the watching of and following parties of native travellers alighting at lonely out-of-the-way roadside stations.

Other poisons are used in India in very much the same way as they are in other countries, and their use presents no peculiarities deserving of special mention here.

#### THE COCAÏN HABIT IN INDIA.

It is a suggestive and somewhat remarkable fact that within the last five years the practice of eating cocaïn has become widely prevalent in many parts of India—in fact to such an extent as to necessitate special legal measures for the control of the sale of this useful drug. I have elsewhere published a study of the cocaïn habit as practised among the juvenile criminal classes in Calcutta. The drug is usually taken for its euphoric effects, mixed with the *pan* and *betel*, so commonly used as a masticatory by the natives of India. The cocaïn is usually eaten in the form of the hydrochloride, as used in ophthalmic practice. The dose is generally about one grain, and is repeated as often as the *habitué* is able to buy this expensive drug. It produces a temporary feeling of satisfaction and well-being, but is soon followed by a reaction which calls for a repetition of the drug. Though I have seen individuals who claimed to be in the habit of eating as much as half a drachm a day, yet I am bound to say that in not less than 100 cases where, on admission to prison for some crime, the drug was immediately and certainly stopped the symptoms of abstinence were but slightly marked, and beyond a temporary depression and a hollow feeling in the abdomen there was but little complained of. One distinguishing sign of the cocaïn eater (at least when it is eaten along with lime *pan* and *betel*) is an ebony blackness of the teeth, especially on their posterior aspects. This sign I have not seen mentioned anywhere before I first pointed it out.

The recent introduction of the cocaïn habit suggests the view that if the efforts of the well-meaning opponents of what is called the "opium traffic" were successful a new drug or



narcotic would soon replace the use of opium, with results at least as serious.

The practice of CAMPHOR EATING has recently been reported as not uncommon in some native girls' schools in Calcutta. Giddiness and excitement followed by a deep sleep result from its excessive use.

#### RUPTURE OF THE SPLEEN.

This is an injury which is comparatively very rare in England, and, consequently, has received but scanty attention from writers on Medical Jurisprudence in the British Isles. The reverse, however, is the case in India, where rupture of the spleen is extremely common, and is constantly appearing in the law courts as the cause of death. In fact so common is it that in the case of the sudden death of a native it might often be safely presumed that the cause was rupture of the spleen. In the majority of those unfortunate cases in which a European is charged with having caused the death of a native by a blow or a kick, it is almost invariably the fact that the spleen was ruptured from a degree of violence which would have had no effect on a healthy person. Indeed, recently, a hostile newspaper went so far as to state that it did not believe in the existence of such an injury as rupture of the spleen—a statement based, I need hardly say, on the most absolute ignorance of the whole subject.

Rupture of the spleen, therefore, is a matter of the very greatest importance to the medical man practising in India, or in any other malarious country.

We have no statistics on a large scale as to the exact degree of the prevalence of enlargement of the spleen among the people of India; but such as have been compiled go to show its very considerable prevalence. Indeed till recently an enumeration of the proportion of enlarged spleens in any community was used as a test of the malarial endemicity of any locality.

In the European, the books on anatomy tell us, the spleen weighs from 5 to 7 ounces. This is for Europeans whose average weight is usually taken at 150 lb. The average weight of the native of Bengal is, as the result of some 28,000 weighments collected by me, about 110 lb. only; but in them

I have found the spleen to weigh on the average ten ounces (average of 314 careful weighments). The spleen as found *post mortem*, however, is usually more than this; the largest I have ever weighed was 64 oz.—that is, weightier than an ordinary enlarged liver. Moreover, many larger spleens than this have been found.

It is obvious, therefore, that a large spongy organ such as a spleen in this condition, taking up much more than its proper place in the abdomen, is peculiarly liable to external injury, which—owing to its friability and the large quantity of contained blood—must almost always be fatal.

In an admirable article recently published, Dr. D. G. Crawford has analysed in a very thorough way a series of 304 cases of ruptured spleen. These 304 cases were all taken from records of *post-mortem* examinations made for medico-legal purposes; and out of over 9,000 such records examined the number of cases of ruptured spleen amounted to not less than 3 per cent. of the whole. Moreover, out of the total 9,000 cases the spleen is noted as enlarged in no less than 37 per cent. of cases, and in some districts well over 50 per cent. of the spleens are recorded as enlarged. This means that more than one-half of the persons whose bodies come to be examined for the purposes of justice have enlarged spleens.

Following Crawford, we may further discuss this question under several headings:—

*Age and Sex.*—Examination of statistics shows that there is but little difference in the liability to this injury between men and women; and as regards age, nearly two-thirds were adults—that is, persons of an age most likely to be engaged in fights and quarrels.

#### CAUSE OF RUPTURED SPLEEN.

In the 304 cases, omitting 57 in which the cause is recorded as unknown, and a few from miscellaneous causes to be mentioned below, we find 102 due to blows from sticks, 62 due to blows of the fists or from kicks, 22 from falls, chiefly from trees; 2 from pressure on the body (a familiar form of torture), 23 as part of a murderous assault, and 20 from being run over, or from a heavy weight falling on the body.

The miscellaneous causes recorded are various, but of

importance, as showing what a slight degree of injury may lead to this fatal condition. Among these causes was one from a clod of earth thrown and striking the left side; others from the blow of a shoe, or a wooden stool, or the prod of a cow's horn; others were from being knocked down (not run over) by a horse, the blow of a fall to the ground or the kick of a horse.

The following case may also be quoted:—A European gentleman slipped on the floor of his bathroom and died in a few minutes; at the autopsy the spleen was found to be ruptured and to weigh 19 oz. Even this simple fall caused no less than four lines of rupture.

James has recorded the case of a shepherd boy who, while indulging in horseplay with another youth, fell and died in three hours. The spleen was found to weigh 22 oz., and to be ruptured in two places on the lower surface. In another case a Punjabi boy died after a blow which was ascertained to have been on the right side. The spleen was found enlarged, with a rupture  $1\frac{1}{2}$  inches long on the inner surface.

James has also recorded another remarkable case of what he calls "spontaneous rupture" of this organ, in the person of a Punjabi, who, while conducting his own case in a law court fell down suddenly. Not the slightest evidence could be obtained that he struck anything as he fell, but at the autopsy it was found that the spleen was much enlarged, weighing no less than 3 lb. 13 oz., and to be ruptured for six inches along its inner surface.

Such cases are sufficient to show that even the slightest violence is enough to cause rupture of the spleen when that organ is diseased or enlarged.

#### THE SITE OF RUPTURE.

Of 262 cases where the site of the rupture has been noted, we find that 133 were on the inner surface, 55 on the outer surface, and 116 either on two surfaces or were irregular. Of 304 cases, 225 were single ruptures and 79 were multiple. It appears, therefore, that the inner surface is by far the most commonly ruptured, and it is said that on this aspect the spleen capsule is the thinnest.

In all the above cases the spleen is recorded as more or less

enlarged; but I have records of 8 cases in which at the autopsy that organ is recorded as not enlarged. In these cases either the injury has been severe or multiple, as in a murderous assault, or after being run over. It is, perhaps, worth noting that in five of these eight cases the stomach is noted as having been found full, and in only one case is it said that the stomach was empty. Crawford, however, who has investigated this point, is of opinion that there can be found no very definite connection between rupture of the spleen and a state of fulness of the stomach.

#### COMPLICATIONS.

Of course, in cases of great violence it is natural to expect damage to other organs, but an analysis of Crawford's figures shows that in only 32 cases (10 per cent.) was any other organ than the spleen ruptured. In 19 of these 32 the liver was also ruptured.

#### THE PERIOD OF SURVIVAL AFTER RUPTURE.

This is often a most important legal question. I may quote a few cases bearing on this point. In Russell's *Malaria : its Causes and Effects*, a good case is related, where a man received a severe injury to the spleen and recovered; but the injury to the spleen was confirmed some years after, when a *post-mortem* examination happened to take place on his body. I have been able to collect only seven cases of survival for considerable periods after undoubted rupture of the spleen, and many years ago I published one such case.

In four cases the victims survived just over 24 hours, in one case for five days, in two cases for four days, in another case for 2½ days, in another a "few days," in another for three days. The longest period of survival that I have been able to find is that of a man admitted to a Calcutta hospital with a rupture of the spleen, and he remained there for seventeen days, and the injury was confirmed *post mortem*.

In some cases the period of survival is passed in unconsciousness, but in others there can be no doubt that the patient may be able to speak, or make a dying declaration, &c.—points often of the greatest legal importance.

The question, too, may arise as to the possibility of a man

with ruptured spleen being able to arise and walk a certain distance. This point is not often noted in recorded cases, but in reading them nothing is often found which makes such impossible; and doubt is set at rest by the following case, published in 1867 by Dr. Hutchinson, in which an old man after having been severely beaten by a bamboo, walked to his home, a distance of about half a mile, and there died almost immediately. The *post-mortem* examination showed that the seventh and eighth ribs on each side had been fractured. The spleen was also ruptured, and also the liver.

It is worth adding that a case has recently been published (*Indian Medical Gazette*, Nov., 1903, p. 417) in which at an autopsy on a sepoy, aged twenty-four, there was found a total congenital absence of the spleen, along with a transposition of all the abdominal and thoracic viscera.

#### THE RAPID FORMATION OF ADIPOCERE IN WARM CLIMATES.

As regards the formation of adipocere in dead bodies which have lain in damp places, the experience of the medical jurist in India is different from that recorded by European experience.

It is well known that the great authority, Casper, has laid it down that the formation of adipocere is not likely to occur to any great extent in less than three or four months in the case of submerged bodies, and in six months in bodies in moist earth.

This is the opinion which is taught in most European textbooks; but such a view seems to be based only on the experience of cold or temperate climates. Indian experience, on the other hand, is to the effect that saponification, or the formation of adipocere, may take place in a very short time in damp and hot climates, such as that of Bengal is.

Some years ago, Mackenzie, then Police Surgeon of Calcutta, published eight cases, and I have been able to collect two more bearing on this question.

The ten cases are, briefly, as follow:—

1. A body was found in an advanced state of saponification on removal from a tank; where it had lain for "several days."

2. The body of a groom, exhumed from a damp Mahomedan burial-ground four days and four hours after inter-

ment, was found to be in an advanced state of saponification.

3. A Chinawoman disinterred 76 hours after burial was also found in an advanced state of saponification.

4. A Bengali was drowned in the River Hughli; the body was recovered after three days, and the internal organs were found saponified.

5. The body of a European, two days in the water, was examined, and all the external portions of the body were found to be saponified.

6. The body of a European sailor was recovered from the river eight days and ten hours after drowning. The external parts, the heart, liver and spleen, were found saponified.

7. The body of a sailor recovered from the river on the fifteenth day was found to be in an advanced state of saponification.

8. The body of a European youth was recovered after having been in the river seven days; it was in an advanced state of saponification.

To the above eight cases of Mackenzie I may add two more recent ones:—

9. D. M. Moir's case.—A body was exhumed after having lain in a damp grave, at the depth of three feet, on the side of a lake. The body was so much saponified that Moir was able to completely confirm the previous *post-mortem* examination. The soil in which the grave had been dug was damp, being saturated with the rain of the previous three months' monsoon.

10. The tenth case is recorded by Dr. R. S. Ashe. The body was that of a boy, aged nine, exhumed four days after burial. The skin of the abdomen, chest, and extremities was found to be mottled and waxy looking, and free from offensive odour. Portions were sent to the chemical examiner, Calcutta, who reported that "partial saponification had taken place in the tissues." This opinion was also confirmed by the Professor of Pathology at the Medical College, to whom the specimens were also submitted for opinion.

In view of the above ten cases it is scarcely possible to hold to the European view that a long period of weeks and months is necessary for the formation of adipocere.

## THE PERIOD REQUIRED FOR THE DIGESTION OF INDIAN FOODS.

This is a subject on which but few observations or experiments have been recorded. It is, however, easily understood that the presence or absence of food from the stomach of a body found dead may be of legal importance. The following observations of Dr. P. C. Singh, of Patna, have been compiled and published at my request.

It must be premised that the ordinary food of the native of Bengal consists of rice and pulses. It is of considerable bulk—about 24 oz. of cooked rice (8 oz. of dry rice), 12 oz. of cooked pulses, and not less than a pint of water being taken at each meal. It appears that this bulky quantity of food is not so quickly got rid of by the stomach as the more concentrated food of the European. Therefore any opinion given, which is based upon experiments on European foods, is apt to be misleading.

The following observations were made on bodies sent in for medico-legal examination :—

1. A Hindu, aged thirty-five, took food at 8 a.m. He was severely assaulted at ten o'clock (two hours later), and died at 2 p.m. from the effects of ruptured spleen. At the autopsy a large mass of undigested rice and pulse was found in the stomach. Death had taken place six hours after the last meal; but it is possible that the process of digestion may have been interrupted by the shock and hæmorrhage at ten o'clock.

2. A young man took food at 11 p.m.; he had an epileptic fit at 2 a.m., and died at 5 p.m. the next day. The stomach was found half full of undigested rice.

3. A man took his evening meal at 10 p.m., went to sleep soon after, was murdered in his bed at 5 a.m. (*i.e.*, 7 hours after taking food). A small mass of undigested rice and potato was found, so that stomach digestion was not completed even in seven hours.

The following experimental observations were made by washing out the stomachs of healthy persons at fixed periods after taking food :—

1. Large meal of pulses, rice and vegetables at 12 noon; stomach washed out after three hours, some undigested rice remained.

2. Same person, another day; stomach washed out after four hours; one ounce of undigested rice was recovered.

3. Same person, another day; after five hours some undigested rice flowed out from tube (250 grains counted), and so up to seven hours, when even then some undigested grains of rice remained in the stomach.

4. A similar experiment on another man; some 200 grains of rice, undigested, were found on washing out after five hours.

5. Similar experiment; two drachms of undigested rice were found after six hours.

6. Same person, fed on rice and chapatti (a sort of unleavened bread in the form universally used by up-country natives); after six hours some rice and a piece of the chapatti were found undigested.

In two similar experiments pieces of the chapatti, undigested, were found in the stomach after so long intervals as six hours and thirty minutes, and after six hours and forty minutes.

These experiments and observations seem to show that some portion of a meal of rice, pulses, &c., may be found undigested even six or seven hours after the taking of food.

#### A NOTE ON THE VALUE OF SOME *POST-MORTEM* APPEARANCES OF DROWNING.

In all countries deaths from drowning are very common, and this is especially the case in the country of the Gangetic Delta, where, during the rainy season, the country is to a large extent flooded, and communication is largely by means of boats. Consequently, accidental deaths from drowning are very common. It is also a favourite method of suicide, and much more rarely used for homicide.

The *post-mortem* appearances, in addition to those of apnœa, or asphyxia, are froth in the mouth and nostrils, water or mud in the stomach or intestines, mud sand and floating matter in the lungs and windpipe, &c., &c.

When several of these signs are present the decision as to the cause of death is not difficult; but more usually the medical jurist has to depend upon the presence of asphyxia and one or more of the signs above mentioned.

The history of the cases may be of value; on the other hand it may be misleading, as it is not an uncommon practice in



India to throw the bodies of persons done to death in various ways into rivers or tanks, either in the hope of hiding the body, or to create a supposition of accidental drowning.

Two signs of asphyxia are of special value—viz., an accumulation of fluid in the pleural sacs, and the staining of the endocardium of the right side of the heart.

When an individual dies from asphyxia produced by any cause (and in India one has always to be on the look out for signs of opium poisoning), the vessels of the lung are distended with blood, and the lung tissue is filled with a watery fluid, derived by transudation from the distended capillaries. In the asphyxia caused by drowning the quantity of fluid is increased by the water aspirated during the third stage of drowning, and when this stage is prolonged a very large amount of fluid is drawn into the lungs, hence if the body is opened soon after death the lungs are large, “ballooned,” and sodden, and blood and watery fluid pour forth on section. If, however, the examination is made after putrefaction has set in, the fluid will have transuded and accumulated in the pleural sacs, which may be sufficient to make the lungs float up and project on the thorax being opened.

The stained condition of the endocardium of the right ventricle indicates that this cavity was full of blood after death, and its discoloured state is in marked contrast to the yellowish colour of the left ventricle.

These signs, however, only point to death from asphyxia; they do not show the cause of that condition, hence the importance of the history of the case, and the presence of fluid, mud, &c., in other organs.

The following table is compiled from carefully made notes by Gibbons, the Police Surgeon of Calcutta, on 157 bodies in which death occurred from drowning:—

	Fluid.	Mud.
Air passages .. ..	12.7	15.9
„ „ and stomach .. ..	13.4	10.0
„ „ stomach and intestines .. ..	5.0	3.8
Air passages and intestines .. ..	1.2	.6
Stomach .. ..	.6	5.0
Intestines .. ..	1.2	.6
Stomach and intestines .. ..	1.2	1.9

In 25 per cent. of this series neither fluid nor mud was found inside the body, and mud was found in either the air passages or the digestive tract in 37 per cent. of cases. Here, again, the condition of the body at the time of examination is of importance, and it was found that in 55 fresh bodies either fluid or mud, or both, were found either in the air passages, stomach or intestines. In 25 slightly decomposed bodies there was found neither fluid or mud in six, or in nearly one-third of the cases. In 81 highly decomposed bodies no signs were found in 47 upon which a diagnosis of the cause of death could be made with certainty, and in 34 of these neither mud nor fluid was found.

These facts illustrate the difficulties of the medical jurist in India, who has often to endeavour to form his opinion as to the cause of death on a body highly decomposed, and in which the internal organs are both putrid and pultaceous. In many such cases, however, the two signs of asphyxia above mentioned—viz., accumulation of fluid in the pleural sacs and the staining of the endocardium of the right ventricle—will be found, and if found the inquiry is narrowed. In such a case if there is a history of the body having been found in water, and if poisoning or hanging can be excluded, the opinion that death took place from drowning can be given with some confidence.

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ART. IV.—*The Diagnosis of Perforation in Typhoid Fever.* By  
ALFRED R. PARSONS, M.D. (Univ. Dub.), F.R.C.P.I.;  
Physician, Royal City of Dublin Hospital and Royal  
National Hospital for Consumption.

OF all the complications of typhoid fever none demands earlier recognition, if the patient's life is to be saved, than the occurrence of perforation. The advance in surgical technique during the past decade has, in this respect, enormously increased the responsibility of the physician. Twenty years ago he could do little more than be guided by traditions hallowed by time and authority, and follow Heister, who, writing in 1739 on perforation of the bowel, could only advise that the patient be kept quiet, that he be urged to eat

abstemiously. and to lie upon his belly, and that the rest be left to Divine Providence and the strength of the constitution. But now the peritoneum has been robbed of its unknown terrors, and all are agreed that the proper way to close a perforation of the gastro-intestinal tract is by a needle and silk, and not by opium. Operative interference in typhoid fever is further facilitated by the fact that in about eighty per cent. of the cases the perforation is within eighteen inches of the ileo-cæcal valve. The real difficulty in saving cases of perforation lies not in the surgical technique, though skill and resource in the operator are essential, but in the early recognition of the intestinal complication.

In some cases, doubtless, the onset of symptoms of perforation is striking, if not almost pathognomonic, and there is no ground for hesitation as to what the proper treatment should be. In cases admitting of an accurate diagnosis there can be no choice between an almost certain and painful death in twenty-four or forty-eight hours, if an operation be not undertaken, and a fair chance of recovery in the hands of a competent surgeon. There is, however, another class of cases in which the physician has only a suspicion that perforation has occurred. If certain signs suggest perforation, other signs tend to negative it. It therefore becomes his duty to most carefully balance and weigh the positive against the negative indications, and decide whether the case demands exploration or otherwise. Certain general considerations must influence him in coming to a decision. He may start assured that in 95 per cent. of the cases in which perforation has taken place, recovery is a practical impossibility without an operation. Curschmann, in the article on typhoid fever in Nothnagel's *Practice of Medicine*, states, with Osler's approval, that not more than 5 per cent. of the unoperated cases of perforation recovered. Keen, basing his observation on 158 cases of operation for perforation in enteric fever collected by him, gives 23.41 per cent. of recoveries. Of 16 cases operated on in the Johns Hopkins Hospital, with every convenience at hand and a staff as keen as possible in the early detection of perforation, 6 recovered. This gives a percentage of 37.5.

On the other hand it cannot be forgotten that an exploratory

operation is not free from risk. Undoubtedly the risk is a diminishing one, but it has not yet reached vanishing point. But in addition to the risk at present inseparable from exploration, we must remember the depressing effect which the preliminary arrangements for such an operation must have on the patient. The irritation of the ether acting on bronchial tubes already somewhat inflamed is a factor which must be reckoned with. Such considerations as these have no weight in a case in which the diagnosis is clear. If, however, the diagnosis be only problematical, it cannot be overlooked that to submit a patient in the third or fourth week of typhoid fever, with a weakened heart, a frequent pulse, and a considerable degree of bronchitis, to an unnecessary exploratory laparotomy, must materially minimise his chance of recovery. The risk of the operation may be diminished by performing it, as Cushing suggests, under local cocain anæsthesia. By following this recommendation we avoid the danger of aggravating the bronchitis, but we do not remove the mental shock directly connected with as grave an operation as an exploratory laparotomy.

An accurate diagnosis, so that an operation may not be unnecessarily undertaken, is therefore of great importance, but an early and accurate diagnosis is of vital importance. The absolute necessity of not losing time after perforation has taken place is demonstrated by some statistics collected by Professor Osler. Of 15 cases operated on within twelve hours 4 recovered ; of 20 cases operated on between the twelfth and twenty-fourth hour 6 recovered ; and of 13 operated on in the second twenty-four hours only one recovered.

How are we to arrive at the desideratum of an early and accurate diagnosis ? By recording cases of perforation, and cases which simulated perforation, and as far as may be deducing from them indications which favour or tend to negative perforation. I venture to submit to the Academy three cases of typhoid fever in which perforation either actually occurred or was simulated.

In Case I. the diagnosis was correct, but the patient succumbed ; in Case II. it was wrong, but the patient recovered ; while in Case III. it was, and is still, doubtful, but the patient has long since recovered.

CASE I.—G. C., a well-developed lad of twenty-one years, was admitted to Sir P. Dunn's Hospital on September 9th, 1891, suffering from typhoid fever. He had been ailing for ten days, but had given up work only six days previous to his admission. His temperature was  $101^{\circ}$  F. and his pulse 90 per minute. The following morning his temperature reached  $104.4^{\circ}$  F. He was sponged during the night, and the next morning the temperature was  $103^{\circ}$  F. Everything seemed quite satisfactory till 5 p.m., when he was seized with severe pain in the abdomen. At 6 p.m. he had a constant desire to pass urine, and complained of pain shooting down the penis. He was pale and somewhat collapsed. At 7 p.m. these symptoms had increased, and he was sweating profusely. The hepatic dulness was deficient. A diagnosis of perforation was made, and at 8 p.m. he was seen by the physician on duty, who ordered stimulants by the rectum and a hypodermic of morphin and atropin. During the night the pain ceased, the extremities became cold, the patient thought he was better, then became slightly delirious, and died early the following morning, about twelve hours after the perforation had occurred.

The *post-mortem* examination revealed an acute peritonitis due to the perforation of a typhoid ulcer close to the ileo-cæcal valve. The actual size of the perforation was the cross section of a lead pencil.

In this case the diagnosis of perforation was clear, and the treatment of a similar case would now, unquestionably, be a laparotomy and closure of the perforation. The striking features of this case were the sudden onset of violent pain, the frequent desire to micturate, and the pain shooting down the penis, suggesting that the peritoneal coat of the bladder was becoming inflamed, and the diminution of the area of hepatic dulness.

CASE II.—O. G., aged twenty-seven years, was admitted to Sir P. Dunn's Hospital on 6th July, 1892, in his tenth day of an attack of typhoid fever. For the first few days he was in hospital he had diarrhœa, but for the remainder of his illness constipation. By the morning of the nineteenth day his temperature had become almost normal. On that day he complained of pain in his left leg, and his temperature rose to  $103.2^{\circ}$  F., owing to the

formation of a thrombus in the left femoral vein. On the morning of the twenty-sixth day of his illness his temperature was 102° F. On the morning of the twenty-seventh day he awoke with severe pain in the right iliac fossa. When he was seen a couple of hours later by the physician on duty there was considerable resonance in the right iliac fossa. The resonance gradually increased in area and the temperature dropped. His pulse did not change materially in frequency. It was considered that his symptoms pointed to a perforation in the neighbourhood of the ileo-cæcal valve, and, after consultation, the surgeon on duty was requested to do an exploratory laparotomy. The abdomen was opened through a small incision in the right linea semilunaris. The abdominal contents seemed perfectly normal. There was no peritonitis, no extravasation, and no gas. The wound was closed. Next day the temperature fell to 96.4° F., and the pulse increased to 120. The temperature subsequently rose to 102° F., continued irregular for a few days, and then settled down. The patient was discharged from hospital apparently perfectly well.

I lost sight of him for some three years, till he came to the Royal City of Dublin Hospital on the 15th of April, 1895, complaining of swollen and ulcerated legs. The legs were œdematous; showed large discoloured areas, evidently produced by hæmorrhagic extravasations; and above each ankle there was an ulcer. An examination of the abdomen revealed the presence of an enormous vein starting from each groin, ramifying over the front of the abdomen and extending up to the thorax. He had developed thrombosis of his inferior vena cava, but, fortunately, the clot did not reach as high as his renal vein. It is some years since I saw this patient, but I recently heard that he was alive and able to work.

In this case perforation was simulated by the sudden onset of the severe pain in the right iliac fossa, accompanied by a gradually increasing distention and a falling of temperature. The condition of the pulse was rather against the occurrence of perforation, but the weight of evidence favoured a diagnosis of perforation, and led to what was subsequently shown to be an unnecessary exploration.

CASE III.—On Thursday, Dec. 27th, 1900, I was asked to see Miss A., one of the nurses in the Isolation Building of the Royal

City of Dublin Hospital, who was complaining of headache. She had not been feeling well for a couple of days, but she had remained on duty till 5 p.m. on the 26th Dec. Her temperature that evening was found to be  $101.6^{\circ}$  F. When I saw her on the following day her chief complaint was of violent pain in the occipital region. There was no retraction or rigidity of the head; tongue was tremulous and coated with white fur; pulse 96; temperature  $100^{\circ}$  F. Two aperient pills had been taken a couple of days previously with a satisfactory result. She felt very well on the 28th, at noon, pulse 72, temperature  $98^{\circ}$  F. She was anxious to be allowed up. She took a little raw apple during the day without permission. In the evening, temperature  $100^{\circ}$  F., pulse 72. On the following morning (Saturday 29th), I had a note from my Resident Pupil (Mr. Buchanan), stating that the patient had been in bad pain since 4 a.m. On arriving at the hospital I ascertained that with the assistance of a mild hypnotic she had slept soundly till 3.40 a.m., when she awoke with violent pain in the hypogastrium, shooting up towards the epigastrium, and all over the abdomen. At 5 a.m. she vomited. At 11 a.m. she lay on her back with her legs acutely flexed on her abdomen, and unable to stretch them down. She was pale, and looked extremely ill. The skin was a little moist; the tongue was coated, and dry over a triangular area at the tip. The *alæ nasi* were not working. The respirations were 36 per minute and superficial; temperature  $102.6^{\circ}$  F., pulse 108. She objected to the weight of the bed clothes on her legs. On examining the abdomen she was very tender all over it, and just as much in the left iliac fossa as in the right. On percussion the note was almost uniformly resonant over the abdomen, and there was also a resonant note in the two lowest intercostal spaces in the right nipple line (diminution in area of hepatic dulness). She had not been able to pass urine since 4 a.m., though she had tried several times; but as a catheter was being passed the urine came before the instrument had entered the bladder. The urine contained no albumen, but indican was present, and the "diazo" test gave a deep red. As the symptoms were so suggestive of acute perforative peritonitis, I asked my colleague, the late Sir George Duffey, to see the patient in consultation with me. Preparations were made for an operation, but we decided to wait for a little longer. At 2 p.m., the temperature was  $103^{\circ}$  F., pulse, 104; otherwise no decided change. She was given enemata

of boric acid lotion which she retained. At 4 p.m.—*i.e.*, 12 hours after onset of violent pain—she was heavy; pulse 108, temperature 104° F., respiration 34, and she had short periods of ease from pain. The first sound of heart was feeble, and the abdomen was a little more distended. She looked a shade better; voice a little stronger, and she was able to move her legs a little. She slept from 7 30 to 8 p.m. Since 9 p.m. she has vomited twice and hiccoughed three times. She is sleeping for past 20 minutes, and continued to do so till 12 20 a.m. On awakening, temperature 101° F., pulse 120, respiration 32. The pain is not so severe; the tongue is moist. 30th Dec., 10 a.m.—Had some snatches of sleep during night, in all 1½ hours; vomited at 8 a.m., two ounces of greenish fluid. Decubitus still dorsal; sunk down in bed; looking very ill; temperature 99.8° F., pulse 108. 4 15 p.m.—Abdominal muscles move slightly in respiration; slept 40 minutes. 11 p.m.—Hiccough and vomiting troublesome during afternoon; passed two light-coloured fluid motions. Blood removed to-day gave a positive Widal. 31st Dec., 10 30 a.m.—Broken sleep, in all 2½ hours; flatulence and hiccough not quite so frequent; vomited at 7 a.m. some bile-stained fluid; bowels acted twice; pain much less, referred now to left hypochondrium; feels very weak, as if she were going right through bed; pulse 104, temperature 99.4° F. 4 30 p.m.—temperature 101.8° F., pulse 112, respiration 36. 1st Jan.—Slept 3½ hours at intervals after taking m x. of liq. morph. hydrochlor.; Widal again positive, 1 in 50; pulse varied during the day from 100 to 112. 2nd Jan., 11 30 a.m.—Distention of abdomen greater than on previous occasions, but there is little pain with gentle pressure over the abdomen; aspect better; pulse 96; has had numerous liquid motions during the day. 7 p.m.—A brownish motion passed on this day contained a portion of apple; temperature 102° F., pulse 105; some vomiting and hiccough. 3rd Jan.—Looks very ill; face drawn; did not sleep well, and vomited about one pint of greenish fluid; hiccough troublesome; considerable distention of abdomen. Passed a restless day, vomiting and hiccough frequent. She was given a hypodermic injection of morphin and strychnin. 4th Jan.—Vomiting not so frequent, but hiccough very troublesome; bowels have moved six times, but distention has rather increased. There is now practically no liver dulness. Temperature 99.4° F., pulse 116. 5th Jan.—Owing to the intense fætor of the evacua-



tions and the abdominal distention, boric enemata were administered, producing seven motions; she has not vomited for 36 hours; hiccough has not been so troublesome; aspect is better; bowels are acting; when dozing the respirations are quieter. There is, however, increased frequency of the pulse (126), with a lower temperature ( $99^{\circ}$  F.). 7th Jan.—No vomiting; less hiccough; better in every respect, except that her pulse keeps so frequent (120 to 130); temperature  $101^{\circ}$  F. 8th Jan.—Temperature rose to  $103.2^{\circ}$  F. for a short time, but the pulse has fallen to 112, and distention is less. From this date onwards there was a gradual, but continuous, improvement in the patient's condition. The hiccough ceased on the morning of the 10th Jan., the distention subsided; strength improved. Pulse fell to 88 and temperature to  $99.4^{\circ}$  F. on 19th inst. On the 26th Jan. she was allowed bread, and she sat up in bed on 28th. She left the hospital on 18th Feb., and has since been in the enjoyment of excellent health.

This case was undoubtedly one of typhoid fever. The well-marked Widal reaction, as observed in dilutions of 1 in 50 by two independent examiners on two different occasions, and occurring in a patient who never previously had typhoid fever, negatives any other hypothesis. But what is the explanation of the acute abdominal symptoms? Peritonitis, due to intestinal perforation and extravasation, is at once suggested by the sudden onset of the violent abdominal pain, the vomiting, the superficial respiration, the great tenderness over the abdomen, the decubitus, the diminution in the area of hepatic dulness, the increasing frequency of the pulse, the inability to pass urine, &c. As against perforative peritonitis it must be admitted that the temperature tended rather to rise than to fall, that the patient got short snatches of sleep of some fifteen minutes' duration, without the internal administration of any hypnotic, and that twenty hours after the onset of acute symptoms the pulse was only 120, and the patient was free from violent pain. It may also be alleged that the acute symptoms developed on the fifth day of the patient's illness, which would be too early for perforation to occur. The patient was subsequently questioned carefully on this point, and she admitted that though discharging her

nursing duties as usual, and partaking of ordinary food, she had not felt really well for a fortnight previous to the 25th of December. During this period she took her temperature on a couple of occasions, but did not find it above 99° F. If these fourteen days be added to the above-mentioned five we reach a date in the history of typhoid at which perforation might very well occur. We have, further, in the uncooked apple eaten without permission on the 28th of December, a dietary indiscretion which might be considered sufficient to encourage perforation. My difficulty in regarding this as a case of perforation and extravasation is the complete recovery of the patient without the formation of any abscess. Curschmann, to whom I have already referred as stating that five per cent. of perforations recover without operation, indicates that this result is to be attributed to a localised limiting peritonitis generally with the formation of an abscess. In this case the symptoms were not at any time localised: there was never any sign of abscess development, and it is hard to imagine that a general infection of the abdominal cavity by typhoid fæces could terminate by recovery without operation. Personally, I have not met a case in literature which does for perforation in typhoid fever with general peritonitis what a case recorded by Hughes, Ray and Hilton in "Guy's Hospital Reports" has done for perforation of a gastric ulcer. They have recorded a case of a perforated gastric ulcer which recovered under the administration of large doses of opium. Three months subsequently another ulcer perforated in the same patient, and the autopsy revealed the accuracy of their diagnosis in disclosing the presence of a peritonitis of some months' standing with abundant moderately firm adhesions between the intestinal coils.

Perforation without extravasation is, I think, improbable, as, considering the amount of food partaken of on the 27th and 28th December, it is unlikely that the ileum was empty on the morning of the 29th December.

The violent pain had abated within twenty hours after its onset, the abdominal rigidity had lessened in two days, but bilious vomiting lasted in all for some six days, while

hiccough persisted, though in a diminished intensity, for four days after the vomiting had ceased.

As a possible solution of this obscure case, and as an explanation of the diffuse peritonitis which I believe was present, the suggestion that the exciting factor was a ruptured mesenteric gland is, I think, defensible. The question of operative interference was often discussed with my late colleague, Sir George Duffey. Even if perforation had occurred, we felt that in the patient's grave condition exploration was at best a forlorn hope. And we never had such a combination of the following symptoms which, when weighed against indications negating perforation, seemed to us sufficiently strong to justify surgical intervention.

From these three cases the lesson of the danger of trusting too implicitly in any one sign or symptom as pathognomonic of perforation may be learned. I venture, in conclusion, to set out in tabular form some of the signs and symptoms which, though not arranged in the order of their frequency or importance, are worthy of consideration when a physician is face to face with the question, Has perforation occurred?

1. Pain. This is characterised by its sudden onset and its violence. It may start in the right iliac fossa or lower abdominal region, but it soon spreads all over the abdomen.

2. Rigidity of the abdominal wall, which will often be accompanied by flexion of the lower limbs and the development of a decubitus suggestive of profound peritoneal irritation.

3. Tenderness on pressure all over the abdomen, but especially so in the lower half.

4. Respiration. This is superficial, is increased in frequency, is mainly, if not entirely, thoracic, and is accompanied by activity of the *alæ nasi*.

5. Pulse. The frequency of the pulse, as a rule, increases—in some cases about 10 beats per hour.

6. The temperature is not of much use. If previously elevated it may drop on the occurrence of perforation. A normal or sub-normal temperature is not incompatible with acute generalised peritonitis.

7. The aspect of the patient is suggestive of acute suffer-

ing. The face is pallid, the skin moist, and the extremities cool. These symptoms may subside after the immediate effects of perforation are over, to return in an aggravated form on the development of definite peritonitis.

8. Micturition. There may be, as in Case I., a constant desire to pass water. In other cases there is retention.

9. Vomiting may occur at the moment of perforation or not for some hours later, after peritonitis has developed.

10. Hiccough is usually a late symptom.

11. Liver dulness has not the same value in typhoid perforation as in gastric perforation, in part due to the fact that owing to intestinal distention it may be often diminished without perforation, and in part because there does not seem to be the same amount of free gas in the abdominal cavity in typhoid as in gastric perforation, and consequently the diminution or abolition of the area of hepatic dulness is more frequently met with in the latter variety of perforation. Notwithstanding these drawbacks, the gradual diminution in the limits of hepatic dulness in a case in which a couple of hours previously the area was normal may prove a valuable aid.

12. Uniform abdominal note. This condition is not likely to be met with except in cases in which a considerable amount of gas has escaped into the abdominal cavity. It is a late sign, and is present with marked abdominal distention shortly before death.

13. The urine. The only constant abnormality I have noticed in perforative peritonitis is the presence of indican, but this substance is so frequently found in enteric fever that detection gives little assistance.

14. Leucocytosis. In the absence of other complications the occurrence of leucocytosis in a patient whose blood previously showed a leucopænia, "may be a valuable help, but it is not constant" (Osler.)

ART. V.—*The Climate of Kingstown and the South Coast of England compared.* By J. BYRNE POWER, M.R.C.P.I., D.P.H., F.R. Met. Soc.; Medical Superintendent Officer of Health for Kingstown.

To the number of this Journal for December, 1903 (Vol. CXVI., Third Series. No. 384), I contributed a paper on this subject. It is difficult for the reader to draw conclusions from a communication bristling with figures and statistics. I have, therefore, ventured to throw into the form of a summary the practical lessons which may perhaps be learned from a comparative study of the records of the Kingstown Meteorological Station and of those compiled at certain British Health Resorts.

I consider that the physical facts and tabular statistics which I have placed before my readers fully suffice to establish the claims of Kingstown to a foremost place among the specially favoured health resorts of the British Islands—both as a *summer* and as a winter residence. Those claims, which I have discussed in the paper in question, may be briefly summarised as follows:—

1. Kingstown is situated in a peculiarly advantageous position on the coast: being placed in immediate—I may say, abrupt—proximity to the *deep* Sea.

2. Its position is specially favourable to enjoyment of the modifying influences of the Atlantic Ocean and its anti-cyclonic atmospheric currents.

#### WINTER.

3. The *winter* temperature is higher than that of any of the noted health resorts on the south coast of England, except Torquay; and equals that of Ventnor in the Isle of Wight.

4. The *range* of temperature during the *winter* months is the same as that of Torquay, and considerably less than that of Bournemouth; the extremes showing less difference than those of any of the stations on the south coast of England.

5. The rainfall is less during the *winter* months than at any of those stations.

#### SUMMER.

6. The *summer* temperature displays a moderation in heat strictly comparable to that of the cold in winter.

7. The *range* of *summer* temperature is correspondingly small.

8. The *rainfall* in the *summer* months is very moderate, although not so peculiarly low in record as it is during the colder part of the year.

GENERAL.

9. The *relative humidity* of the atmosphere of Kingstown presents a lower annual record than that of Llandudno. And that of Llandudno is the lowest of any station in the whole of Great Britain.

10. The east wind prevails but slightly at Kingstown as compared with the stations on the south coast of England; and, very happily, its visitations are far fewer in the colder than in the warmer months.

Once more may I express the hope that I shall not be considered as overrating the Kingstown climate or representing this place as being an absolutely mild winter residence; such is not my intention. As I stated in my paper, I have spent some winters in the south of Europe, Madeira and elsewhere, and therefore I am not likely to fall into such an error.

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SANATORIUM FOR WEST WALES.

At the second annual meeting of the West Wales Branch of the National Association for the Prevention of Consumption, the Hon. Secretary submitted his report, which stated that a site for a sanatorium on the Highmead Estate had been kindly offered by Colonel Davies-Evans. From among the offers of the well-known firms who had been asked to compete, the plans and specifications of Messrs. Speirs & Co., of Glasgow, appeared to best suit the requirements of the Association. The proposed sanatorium, which will be erected of composite iron and wood on Speir's patented system of construction of air-spaced walls, provides accommodation for thirty beds, including two wings of four beds each for special paying patients, with administrative block. The total cost, including foundation, lighting, &c., is £7,000.

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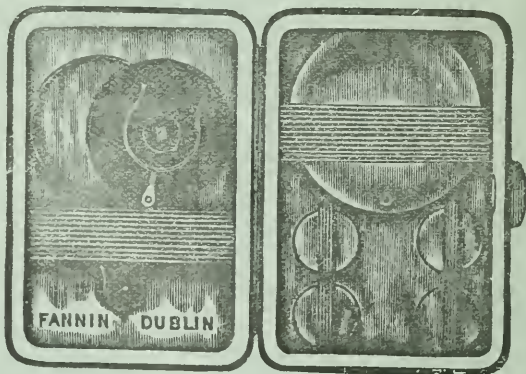
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## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*The Practical Study of Malaria and Other Blood Parasites.*

By J. W. W. STEPHENS, M.D., and S. R. CHRISTOPHERS, M.B. Published for the University Press of Liverpool by Longmans, Green & Co., London. 1903. Pp. 378 and xxxv.

THIS is an exceedingly valuable book, and one which will prove a real boon to everyone engaged in the study of blood infection by animal parasites—particularly by those who, as is generally the case in places where these infections are most common, are thrown entirely on their own resources and have not the assistance and appliances to be met with in a laboratory. The authors are well qualified, from their extensive practical experience of investigations carried out in tropical countries, to give directions as to how such work should be undertaken, and like all true practical workers they aim at simplicity in method. "In the present handbook we propose to give the essentially practical methods by which those not familiar with laboratory methods may, under their own microscopes, follow all the most recent work on malaria, and eventually be in a position themselves to add new facts to our knowledge of this important disease. For instance, with very little apparatus it is possible to undertake many most important researches—*e.g.*, to work out the *rationale* of infection in any station or cantonment; the form of the parasite present; the percentage of adults and children infected; the species of *Anopheles*; where each species is found and where it breeds; the percentage of each species carrying sporozoits and zygotes. In fact nearly the whole technique of malaria can be conducted with a microscope, a few slides and cover glasses, a needle, a stain, some tubes, pins, and card board."

Accordingly we find full directions for making blood films, both wet and dry, and for staining the latter by Romanowsky's

method: descriptions of the appearance seen in normal blood and in that taken from infected subjects, not only those due to the presence of the parasite, but the subsidiary appearances such as the pigmented leucocytes, and increased percentage of the large mononuclear cells; directions for examination of the tissues, either by smears, as from spleen or bone marrow, or by sections, with simple rules for embedding in paraffin and section cutting, staining and mounting. A chapter on the life history of the malaria parasite is illustrated by a useful diagram showing the asexual and sexual cycle undergone by the organism. Several chapters, indeed the greater part of the volume, is occupied with the study of the mosquitoes—how to catch, kill, preserve and identify the different kinds; how to find them, how to dissect them, and how to embed and cut them into microscopic sections. The eggs, larvæ, nymphæ and imagines are all fully described, and directions are given for their study and identification. Anopheles, naturally, comes in for most notice, but Culex and others are not neglected.

The “endemic index,” that is, the percentage of infected children under ten years of age in any district, represents the liability of immigrants to contract malaria. It is shown by an elaborate and painstaking research carried out in India by the authors to depend on the kind of anopheles present.

Full directions are given for making a malarial survey of a district and for mapping out the results.

The clinical study of malaria is described in full—examinations of the blood, cellular counts, determination of isotonic point, &c.; of the urine chemical, spectroscopic, and the method of detecting quinine in this secretion. Directions for determining the periodicity of development of each of the malarial parasites are given, and illustrated by a good chart.

The action of quinine is fully considered. As regards the much-vexed question of the nature of blackwater fever, the authors say: “Blackwater fever is then a quinine intoxication; but it is something more. It occurs only in those who have previously suffered from malaria, and, in fact, there is considerable evidence to show that it occurs frequently in *direct association* with a malarial infection.”

“It is not the quinine, *per se*, but a condition of blood in

the particular malarial patient which is the determining factor whether quinine will produce an attack.”

“We would only add, finally, that it is quite illogical to abstain from quinine in malaria, on the contrary, its *adequate* administration would prevent the occurrence of these attacks.”

Besides the malarial organisms, the authors describe many other blood parasites, as the Hæmogregarina and the Piroplasma, to which last genus belong the parasites of Texas cattle fever, South African horse disease and “spotted fever” of man. As many of these are transmitted by ticks, these insects are described in considerable detail.

There is a section on the yellow fever organism and its life-history in *Stegomyia fasciata*.

The trypanosomata and the Tsetse flies are described, and two good coloured plates show the trypanosomata as met with in the blood of man and animals.

The last chapter is devoted to the filaria, the embryos of eight species of which have been found in human blood.

In an appendix the blood-sucking flies and fleas are described. Formulæ for stains, hardening fluids, and other reagents are given, with tables of weights and measures, and lists of apparatus, with their cost.

From this brief notice it will be seen the enormous amount of information which is contained in this small volume. We think that, perhaps, the matter might have been somewhat better arranged, and a fuller table of contents, with references to the pages, would have been advantageous. There is, however, a good index, and besides three coloured plates there are numerous figures in the text. On the whole the work is one calling for almost unqualified praise.

*Diseases of the Nose and Throat.* By CHARLES HUNTOON KNIGHT, A.M., M.D. London: Rebman. 1903. Pp. 416.

THE author states in the opening sentence of his preface that “the contents of the following pages have formed the basis of a course of lectures at Cornell University Medical College, and have been arranged chiefly for the convenience of students.”

This is well borne out in the arrangement, and enables a

student to find quickly an account of the particular disease he may require to look up. The work is well up to date, and is easy to read, not too dogmatic but clear and happily expressed, though on this side of the water the American idioms are not always agreeable.

Briefly, the arrangement is as follows:—Nose, pharynx, &c., and larynx, each part commencing with the anatomy of that particular region, shortly and simply put; then an account of the physiology; next, methods of examination; and then the commonest diseases; and lastly, short notes on those forms of diseases which are rarely seen. His remarks on ætiology are particularly good for a learner, as there is enough to show the trend of opinion without that full detail which would only weary a non-specialist reader. Old-fashioned and out-of-date theories and methods of treatment are omitted, and long accounts of operations which, from their nature, would be performed only by specialists, are passed by with sufficient notice to show their importance and proper proportion without the technical details, which the reader would hardly need.

Common sense is the key-note of the treatment recommended, and practicability is what is kept before the reader's mind.

The illustrations are on the whole well chosen, and are sufficient for their purpose, and the type, &c., all that could be desired.

The book can be recommended with confidence to all who need a short and easily-read book, and may be safely given to students, as its teaching is to the point and will not mix in their minds the many wonderful theories with those which have stood the test of examination.

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*Scott's Emulsion Doctor's Diary and Emergency Note-Book for 1904.* London: Scott & Bowne, Ltd., 10-11 Stonecutter street, E.C.

THIS is a legitimate and useful advertisement of a well-known preparation of cod liver oil, which is not a quack remedy. As a matter of fact the formula of "Scott's Emulsion" is given as follows in the Diary:—Pure Norwegian oil, 44 per

cent. ; glycerine, 16 per cent. ; hypophosphites of lime to each fluid ounce, 6 grains ; hypophosphite of sodium to each fluid ounce, 3 grains.

The opening pages, 1 to 48, contain much valuable information, including lists of consumption sanatoriums, lunatic asylums, inebriate homes, emergency addresses, and a brief article on modern embalming, with a full list of embalmers resident in various English cities and towns. On the back of the cover is a four inch scale ; and also a ten-centimetre scale is given for comparison.

The note-book is of convenient size, and can be carried even in a vertical waistcoat pocket.

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*RECENT WORKS ON MASSAGE.*

1. *A Treatise on Massage : Its History. Mode of Application and Effects, Indications and Contraindications.* By DOUGLAS GRAHAM, M.D., of Boston, Massachusetts : Member of the American Association for the Advancement of Science, of the American Medical Association, of the Massachusetts Medical Society, &c. Third Edition. Revised, Enlarged, and Illustrated. Philadelphia and London : J. B. Lippincott Company. 1902. 8vo. Pp. 462.
2. *A Manual for Students of Massage.* By MARY ANNE ELLISON, Member of the Incorporated Society of Trained Masseurs. Second Edition. Revised by GULIELMA MANLEY, Member of the Incorporated Society of Trained Masseurs. London : Baillière, Tindall & Cox. 1904. Demy 8vo. Pp. xii. + 126.

1. DR. GRAHAM'S book is now too well known to the professional world to require the application of detailed criticism to its third edition. As the author points out, with honest pride, the first issue, which saw the light in 1884, was the first volume published on this subject in the English language. What a change has since then come over the face of the medical literature of the whole civilised world ; and what a special (revolutionary) epoch did Dr. Graham inaugurate ! As he himself truthfully and impressively puts it : " The history of massage is coeval with that of mankind, and worthy

of being preserved ; its mode of application can be cultivated as an art second to none that the human hand can perform, having a harp of more than a thousand strings on which to play ; its range of usefulness is increasing all the time, and has long since extended into every special and general branch of medicine, so that he who would keep pace with its developments must be well informed in all departments of the healing art." Every scientific physician is conscious of the truth of this estimate of the present position and scientific basis of the practice of massage. Pooh-pooed by many at first, it is now one of the special weapons of the medico-chirurgical armamentarium, with every assurance of continuing so to be. We congratulate Dr. Graham on the use which he has made of his stewardship, and the result which he has attained.

In the preface to the present edition he informs his readers, in the true and unmistakable tone of the philosophic physician, that: "This book is written from the standpoint of the physician and practical *masseur*, from that of theory and practice, of faith and works. From any other point of view it would have been as one-sided and useless as if an architect who had never learned the use of tools should try to teach carpentry, or as if a carpenter who had never studied architecture should try to teach drawing and planning." We sincerely wish—although present experience still forbids us to hope—that all future writers in the various departments of medicine and surgery would go and do likewise when taking upon themselves the very responsible function of preparing special manuals for the instruction of their brethren.

In the preparation of this third edition the author has brought his extended experience to bear on the illumination of the whole—with the necessary consequence of addition, subtraction, and alteration—major and minor. He has also added eight wholly new chapters. Accordingly, the work now before us represents a complete body of the doctrine of massage in all the departments of its theory and practice, by its earliest (and still, probably, its best) English exponent.

2. This small volume represents a praiseworthy ambitious effort to place before the beginner who is entering upon the study of the mysteries of massage the maximal amount of

desirable elementary knowledge in the minimal amount of space. It is based upon practical experience of teaching. The authoress tells us that it embodies what she has herself found useful for grounding pupils in the art of massage. She certainly has succeeded in giving a very comprehensive bird's-eye view of a very extensive area, crammed with hard scientific facts.

There is a great deal of information—excellently suited to the commencing student—in this little manual. The amount of material dealt with is really enormous; a vast number of facts is either fully grasped or lightly touched. The aim is practically all-embracing, and we are sometimes tempted to call out, "Let go half the nuts, and then try;" but no, we can't! The effort shows a transparent honesty throughout, and we cordially recommend this volume to the attention of every commencing student of massage.

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#### RECENT WORKS ON NURSING.

1. *The Home Nurse: A Hand-book for Sickness and Emergencies* (formerly known as "Sick Nursing at Home"). By S. F. A. CAULFIELD, "Lady of Grace" Order of St. John of Jerusalem in England. Third Edition, much Enlarged. Paternoster-row, E.C.: Elliot Stock. 1903. Svo. Pp. 173.
2. *Gynæcological Nursing*. By NETTA STEWART, Sister in the Extra-mural Gynæcological Wards of the Royal Infirmary, Edinburgh. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall & Co., Ltd. 1903. Svo. Pp. 174.
3. *Burdett's Official Nursing Directory*, 1903. Fifth Year. London: The Scientific Press. Svo. Pp. 439.

1. MISS CAULFIELD here gives us a valuable epitome of her wide practical experience in home nursing, and her book will be studied with great interest and advantage by those who, when illness invades the family circle, dispense with the services of a trained nurse. The highest tone pervades the work. The instruction given throughout is excellent, and we have gone through its pages with great pleasure. At the same time we must caution amateurs to avoid such

operations as giving hypodermic injections, which are undertaken by experienced *nurses* with the utmost caution.

2. Nurses will benefit much by the study of Miss Stewart's modes of preparation for various operations and after-treatment of the special cases under consideration in this little volume. The work savours of the up-to-date source from which it emanates, and is well worthy of being placed on the list of nurses' handy books of reference.

3. We are sorry to find that Sir Henry Burdett's Nursing Directory is not increasing in popularity amongst nurses. We still miss many of the best names in the profession, and the work can in no sense be looked upon as having fulfilled its object. This is to be regretted; and we again deplore the difficulty always experienced by those who attempt to arouse *professional* enthusiasm among nurses. All certificated nurses should, *even now*, send in their names, and make the Directory, intended for their benefit, a success. On referring to its pages for information during the last month, we found the name we looked for opposite a post she had vacated six years ago. This we know to be the nurse's own fault, as papers are sent out regularly for revision; but if only a few nurses are to be found on the roll, and the information given is unreliable, the value of the work becomes doubtful.

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*A Text-Book of Operative Surgery: Covering the Surgical Anatomy and Operative Technic involved in the Operations of General Surgery.* Written for Students and Practitioners. By WARREN STONE BICKHAM, Phar. M., M.D.; Assistant Instructor in Operative Surgery, College of Physicians and Surgeons, New York; late Visiting Surgeon to Charity Hospital, New Orleans; late Demonstrator of Operative Surgery, Medical Department, Tulane University of Louisiana, New Orleans. With 559 Illustrations. Philadelphia, New York, and London: W. B. Saunders & Co. 1903. Pp. 984.

THE volume before us is one of the many placed before the profession by our surgical *confrères* on the other side of the



Atlantic. The object the author desires to carry out is that of placing before the reader as clearly and briefly as possible the surgical anatomy and various steps of each operation performed in general surgery. A student, or general practitioner who is not accustomed to operating daily, but who may at times be called upon to perform an operation to save life, in case of emergency, can by referring to a work like this make himself acquainted with the anatomical landmarks and technique of any operation in a very few minutes.

The illustrations are numerous, for the most part clear and instructive, while the large majority are original. The book is somewhat ponderous, but the amount of matter it contains necessitates a large volume. The description of some of the operations is certainly too brief for one who has not seen them done before to appreciate thoroughly and to render him capable of performing them to the utmost advantage to his patient.

The book is one which should be a valuable addition to the stock of the student and general practitioner.

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*The Dublin University Calendar for the Year 1903-1904.*

Vol. I. Dublin: Hodges, Figgis & Co. 1903. 8vo.

Pp. (68) + 377.

IN Hilary Term, 1900, the Board of Trinity College arranged that in future the Calendar should consist of three volumes, to be published at various dates. Volume I.—that which lies before us—is published each year during the Long Vacation. It contains full information as to the ordinary and honour courses in Arts and in the Professional Schools. In it also the undergraduate ordinary examination papers are printed.

Volume II. is published as soon as possible after the 1st of January in each year, and contains the results of ordinary and honour examinations held in Arts and in the Professional Schools, and the degrees conferred during the past year; also the lists of students on the College Books, of the Senate, the University Electors, and the College Officers.

Volume III. is a special volume published from time to time as the Editor of the Calendar may think fit. This volume was last published in July, 1901. Whether this

arrangement is the best is certainly open to question. At all events, the contents of Volumes I. and II. should, if possible, be accessible at the same time, and within the same cover.

In addition to the foregoing, "The Supplement to the Calendar" is published as soon as possible after the 1st of January in each year. It contains the papers set at the honour examinations in Arts and at the Examinations in the Professional Schools. Medical students will find full information as to the regulations of the "School of Physic in Ireland," as the Medical Faculty of the University of Dublin is called, at pages 203 to 230.

The Calendar is clearly printed and neatly bound, and the Editor, Mr. M. W. J. Fry, M.A., F.T.C.D., is to be congratulated on the success of his editorial labours.

#### *RECENT PUBLICATIONS ON DISEASES OF CHILDREN.*

1. *Golden Rules for Diseases of Infants and Children.* By GEORGE CARPENTER, M.D. (Lond.), M.R.C.P.; Assistant Physician at the North Eastern Hospital for Children; late Physician at the Evelina Hospital for Sick Children; Hon. Sec. the Society for the Study of Disease in Children; Editor of the "British Journal of Children's Diseases." Golden Rules Series No. XI. Second Edition, enlarged. John Wright & Co.
2. *The Natural and Artificial Methods of Feeding Infants and Young Children.* By EDMUND CAUTLEY, M.D. Cantab., F.R.C.P. (Lond.); Physician to the Belgrave Hospital for Children; Assistant Physician to the Metropolitan Hospital, &c., &c. Second Edition. London: J. & A. Churchill. 1903. Pp. 418.
3. *The Nutrition of the Infant.* By RALPH VINCENT, M.D., M.R.C.P.; Physician to the Infants' Hospital; late Senior Resident Medical Officer, Queen Charlotte's Lying-in Hospital. London: Baillière, Tindall & Cox. 1904. Pp. 313.
4. *The Physiological Nursery Charts.* Designed by ERIC

PRITCHARD, M.A., M.D. (Oxon.), M.R.C.P. (Lond.). Henry Kimpton. 1903.

5. *Reports of the Society for the Study of Disease in Children.* Vol. III. 1902-1903. Edited by GEORGE CARPENTER, M.D. London: Churchill.

6. *Transactions of the American Pediatric Society.* Vol. XIV. Reprinted from the Archives of Pediatrics. Edited by WALTER LESTER CARR, M.D. 1902.

7. *Transactions of the American Orthopædic Association.* Vol. XV. With lists of published writings of the Members, and references to Orthopædic Surgery. Philadelphia. 1902.

8. *Sight and Hearing in Childhood.* By ROBERT BRUDENELL CARTER, F.R.C.S.; Consulting Ophthalmic Surgeon to St. George's Hospital; and ARTHUR H. CHEATLE, F.R.C.S.; Assistant Aural Surgeon to King's College Hospital; Surgeon to Royal Ear Infirmary. London: The Scientific Press. Pp. 120.

9. *Simple Rules for Preventing Infantile Complaints and Deaths among Infants.* By J. T. C. NASH, M.D., D.P.H.; Medical Officer of Health, Southend-on-Sea. Bristol: John Wright & Co.

1. WE are glad to welcome Dr. Carpenter's little volume in a second edition. To write a compendium of diseases of children in a pocket size, in good print, is a task of no little difficulty. Dr. Carpenter is to be congratulated on the way in which he has accomplished it. A pocket-guide is produced of real value, which bears internal evidence of the author's special knowledge of the subject. In the first edition we noticed a few omissions which deserved recognition, and we are glad to see Dr. Carpenter has incorporated many of them in this issue. We still would like to see some explanation of "tabes mesenterica"—a term which confuses many, in his paragraphs on Tuberculous Peritonitis. Some notes of idioglossia, Friedreich's disease, and a paragraph on the ataxies of children, would enhance the value of the book. There is a good index. The sections treating of the several systems might, with advantage, be more clearly defined, or divided into chapters which would facilitate reference; but these are details in arrangement rather than errors in matter.

We think Dr. Carpenter's little volume should be in many practitioners' pockets, for in a small compass a large amount of the soundest information will be found. The healthy-minded soundness of Dr. Carpenter's views is the chief feature of the volume.

2. After a space of six years Dr. Cautley issues a second edition of his work on Infant Feeding. Though several modifications in the work have become necessary, the volume is but slightly enlarged, and the print has been a little improved. It is a most comfortable book to read, and is excellently produced by Messrs. Churchill. In common with those who have much experience of its disadvantages Dr. Cautley does not highly commend the 'American system of percentage feeding. He says: "The advantages along this line have been chemical rather than clinical, and the attempt to treat the infant's stomach as a test-tube has not proved altogether successful."

He is right when he considers these complicated formulæ alarming, unwieldy, and unnecessary. To any who have studied the difficult subject of infant mortality it is abundantly clear that it is most closely connected with feeding and food disorders; therefore a thorough knowledge of the subject is essential. After an introduction, excellent chapters follow on—"The Chemistry of Infantile Dietetics;" "Human Milk, Cow's Milk, and the Milk Supply," and "Micro-organisms in Milk." The whole subject, one of great difficulty, is handled in a thoroughly sound manner, and an amount of research evinced before conclusions are drawn. It ranks as, perhaps, our chief English text-book on this important and difficult question, and should be in the hands of all those who are called upon to deal with infantile disorders.

3. Dr. Vincent in this volume goes well into the subject of infant feeding. Chapters are given on human milk, lactation, cow's milk, and artificial feeding. This portion comprises the greater part of the work. With some of Dr. Vincent's conclusions we do not agree. The American system of percentage feeding, which has been tried for some years, is not proving the unmixed blessing it was held to be. Those who have had

large experience of it have much fault to find with it. Dr. Vincent advocates strongly the use of whey in cream mixtures for infants, and gives elaborated formulæ to make humanised milk. Whey is a most deceptive food, and even when mixed with cream does not contain sufficient proteid to maintain nutrition. Many valuable hints are given, however, in the book. The paragraphs on cow's milk and the milk supply are very instructive.

In the latter half of the volume some of the diet diseases or food disorders are described. Dyspepsia and diarrhœa are dealt with sensibly, though shortly. A description of marasmus follows, in which Ruhrah's recent views as to thymus atrophy being the cause are alluded to. Short chapters on rickets and scurvy complete the volume.

The book is a useful addition to the literature of diseases of children, more, however, from the author's sound absorption of other teachers' views than from any marked originality on his part. It is beautifully printed and bound.

4. This is an admirable chart, about 2 feet square, with top and bottom rollers for suspension in nurseries. It contains excellent information:—Weight charts up to the end of the third years; directions for feeding infants for the first twelve months; methods of preparing modified milk; indications that food is not agreeing; and on the back, "What to do in sudden illness;" "what to do in case of poisoning;" dentition tables; and some useful aphorisms. Dr. Pritchard's idea is excellent, and every nursery should possess his chart. We are glad that no patent foods are permitted, good, fresh cream and milk only used, and sterilisation advocated. If we have any fault to find it is in the large quantity of cream advocated necessitating expense; and also the strengths of most foods given are rather weak. For instance, a child is to be 8 months old before a strength of equal parts food and diluent is allowed. These are, however, faults on the side of caution, and tend to correct the chief dangers in artificial feeding—namely, overfeeding and lack of cream.

5. This third report of the above new Society is in every way an improvement on its predecessors. Handsomely bound,

well printed, and containing admirably reported proceedings, it is a compendium of some of the most interesting diseases of children. The Society numbers 285 members, and they hold their meetings usually in the Medical Society's rooms in Chandos-street. The reports are, in nearly all cases, those of clinical exhibits before the Society.

In this volume interesting papers are found on "Splenic Hyperplasia," termed von Jaksch's disease, which, *en passant*, we may claim to be correctly Battersby's disease; for Dr. Francis Battersby, of Dublin, first described it in 1849 in the "Dublin Quarterly Journal," over thirty years before von Jaksch. There is a special report on "Tuberculous Peritonitis," which was admirably handled at a special meeting of the Society. The ætiology is dealt with by Dr. Cautley; symptoms and diagnosis by Drs. Barr, Parkinson, and Carpenter; pathology by Drs. Fisher, Chaffey and Carpenter; and its treatment by Drs. Guthrie, Carmichael, Carpenter, and Watson Cheyne.

Other interesting papers are found on "Dilatation of the Stomach;" "Cerebellar Tumour;" "Splenomegaly," an excellent contribution by Dr. George Carpenter; "Primary Pneumococcal Meningitis;" "Diphtheria of the Œsophagus and Stomach;" and "Scurvy and Craniotabes."

In every way these reports are valuable, and the volume is an admirable contribution to the literature of this branch of medicine.

6. In these Transactions some excellent papers are found. They are the proceedings of a Society for the Study of Disease in Children, which meets annually in various American cities, somewhat after the manner of The British Medical Association, a different place being chosen for each session (Washington, Boston, New York, Niagara, &c.). The Society numbers but 53 members, but they are mostly well-known authorities on this branch of medicine—Osler, Koplik, Holt, Jacobi, Starr, and Stengel, amongst others.

Amongst the most interesting papers are those on "Rheumatic Children," by Crandall; "Tuberculous Peritonitis," by Rotch; "Renal Decapsulation" in Chronic Bright's Disease, by Caille; "Septic Endocarditis," by Adams; and "Sudden Death from Enlarged Thymus," by Caille.

The Transactions are clearly printed, and the discussions are well reported. This volume contains a very useful index to Vols. I.-XIV., inclusive. Many interesting cases will be found within its pages.

7. This is the largest volume of these Transactions which has been issued, containing numerous papers on Orthopædic Surgery. Among those of special interest we notice contributions on "Cerebral Diplegia and Hemiplegia," by Robert Jones, F.R.C.S.; "Neuroses as seen in Orthopædic Practice," by B. E. Mackenzie, of Toronto; and a very valuable paper on "Infantile Paralysis," an epidemic of thirty-eight cases, by Charles Y. Painter, of Boston. This latter is of great value, and well worth careful study. The cases are clearly detailed, and form a reliable contribution to the pathology of this disease.

8. The fact that many children are heavily handicapped in school-life by impediments which stand at the very gates of knowledge—*i.e.*, defects in sight and hearing—demands such a volume as these writers have produced. It should be widely read. Whether a child can see and hear properly should be one of the first questions on commencing study. In 1895 Mr Carter examined 8,125 children under the London School Board, and found only 39.15 per cent. with normal sight in both eyes; 39.7 with subnormal sight in both eyes; 12.5 with right eye normal and left subnormal; and 8.6 with normal left, but abnormal right.

This volume is a series of excellent chapters on vision and hearing. It is intended for lay as well as professional readers, and is admirably clear and sound. The causes, consequences, and treatment of defective vision are concisely put before the reader; not only for the public services, military, seafaring, or civil employ, but also in young children defects of sight and hearing demand careful examination, as they are fertile sources of harm.

Mr. Cheatle contributes a most excellent chapter on the ear, and points out that amongst school children there are "twice as many with defective hearing among the backward children as among the forward children." The skilled examination of school children should be regularly carried out in this country.

In New York there has been a daily inspection, with the result that in the first week no less than 4,700 children, out of an average daily attendance of 204,262, were excluded for measles, diphtheria, scarlet fever, contagious eye diseases, pediculosis, &c. As Mr. Cheatle points out, "These figures clearly demonstrate what nurseries of disease public schools may be, and how necessary it is that all schools should be medically controlled." There is a sound practical chapter on "The Care of the Ears in Childhood."

We highly commend these essays to both lay and professional readers.

9. This is a leaflet of 8 pages for public distribution. It is safe, simple and useful. The directions are clear and the advice sound. The food recommended is well adapted to the needs of infancy, and it may with advantage be circulated amongst the community. The author wisely insists on the addition of cream in the process of humanising cow's milk, for its omission frequently causes rickets and scurvy. In pamphlets of this kind no patent food should be specified as a substitute for fresh milk, and we disapprove the mention of one in particular. On the whole the leaflet has been compiled with tact and judgment, but it would be more useful if it had been printed on one sheet of paper.

*The Purin Bodies of Food Stuffs and the Rôle of Uric Acid in Health and Disease.* By I. WALKER HALL, M.D. Second Edition (revised). London and Manchester: Sherratt & Hughes. 1903.

THE chemicopathological relations of uric acid are still a *questio vexata*, and widely divergent views are held as to the part which uric acid plays in reference to gout and sundry other diseases.

The precise mode of origin of uric acid is still unknown; but, so far as diet is concerned, its formation appears to be directly dependent upon the nucleins and xanthis contained in the ingesta.

Now these different xanthis and nucleins are built around a common nucleus, termed purin, =  $C_5 N_4$  (E. Fischer).



About 12 different combinations of this purin nucleus are known to exist in nature, but not less than 146 have been produced in the laboratory.

The purin bodies of ordinary occurrence are :—(1) Hypoxanthin,  $C_5H_4N_4O$ ; (2) xanthin,  $C_5H_4N_4O_2$ ; (3) uric acid,  $C_5H_4N_4O_3$ ; (4) guanin,  $C_5H_5N_5O$ ; (5) adenin,  $C_5H_5N_5$ ; (6) caffein,  $C_5H N_4O_2 \cdot (CH_3)_3$ ; (7) theobromin,  $C_5H_2N_4O_2 \cdot (CH_3)_2$ .

Theobromin and caffein have not been made artificially. E. Fischer draws a picture of the time when the present coffee adulterants, chicory and coffee-surrogate, will be superseded by synthetically made caffein, and a cup of refreshing drink will be prepared by simply dissolving a small powder in hot water.

The term "alloxuric bodies" has been also applied to the purin group, because they may be regarded as derivations of alloxan and urea.

Dr. Hall's object in undertaking the investigations embodied in the book under review was to obtain further information as to the action of purin bodies and their metabolism, and to discover some means whereby the early pathological changes in certain metabolic disorders may be detected.

The author describes and figures a simple instrument termed "The Purinometer" for the quantitative estimation of purin bodies in clinical and physiological work.

The purin bodies are thrown down as a silver precipitate, but for details of the process we must refer to the text.

A summary of the author's results is given in Chapter XI. While the experimental data will doubtless be found useful in future work, no very important or novel point appears to us to be made out as regards dietetics or therapeutics.

*Portfolio of Dermochromes.* By PROFESSOR JACOBI. Edited by J. J. PRINGLE, M.B. London: Rebman. 1903.

IN a previous number of this Journal we had the pleasure of expressing warm approval of Parts I. and II. of Jacobi's fine Atlas. We have now before us Parts III. and IV., which complete the work. The excellence and realistic beauty of the illustrations are fully maintained, and we again strongly commend

this portfolio of plates to the goodwill of our readers, and advise all who can afford the very moderate price to purchase it.

An index is now supplied.

No one can fail to learn much by a careful study of these beautiful plates, along with the brief, but pointed, text which accompanies them.

Dr. Pringle has carried out his part as editor with complete success.

Most of the skin affections are briefly described; but eczema and syphilis are discussed at greater length, and the treatment is explained in detail.

The text is, as a rule, free from errors, but we noticed a few slips—*e.g.*, auditory *meati*, and echthyma.

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*Recherches Experimentales sur la Pathogénie de l'Ictère.* Par le  
DR. GEORGES JOANNOVICS. Bruxelles: Hayez. 1903.  
Pp. 61.

THIS able essay has been awarded a prize of 1,000 francs by the Belgian Royal Academy of Medicine, and is published by that distinguished body in its memoirs.

The author records a number of experiments made principally on dogs, but also on cats and rabbits, in which he injected either toluylendiamine or a hæmolytic serum got "*par l'immunisation du lapin avec des globules rouges du chien*;" or by injecting into rabbits the pulp of the liver of the dog. The animals experimented on were sometimes normal, sometimes they had undergone a previous removal of the spleen, sometimes ligation of the common bile duct, and in some cases had had an anastomosis established between the portal and caval veins (fistula of Eck).

In poisoning, both by toluylendiamine and by hæmolytic serum, the jaundice is due to an increased secretion of bile, formed in the liver from the pigment of broken down red corpuscles. This superabundant bile bursts the intralobular duct and finds its way, by the lymphatics, into the general circulation. That the jaundice is not due to lesion of the hepatic cells is shown by the absence of such lesion in cases treated by the first kind of hæmolytic serum, although the cells show changes in animals treated with toluylendiamine.

There is, however, a remarkable difference in the way the broken down pigment reaches the liver in the two cases. In toluylendiamine poisoning the corpuscles undergo, it is true, changes in the circulation, but their destruction takes place in the spleen. Here the pigment is taken up by cells which convey it to the liver, and which can be seen in the hepatic blood vessels. If the spleen has been previously removed this destruction does not occur, and the animal does not suffer from jaundice. The same is true in cases where an Eck's fistula has been established.

The hæmolytic serum, on the other hand, dissolves the corpuscles in the circulating blood, and the pigment is carried in solution to the liver. So the ablation of the spleen does not make the animal more resistant, but after this operation death is even more rapid than in normal animals.

There is another difference between animals with and those without, spleen. In the former, and in those with venous fistula, hæmolysis is followed by hæmoglobinuria, while in the absence of spleen this symptom does not occur either in dogs poisoned by serum or cats poisoned by toluylendiamine.

It was found that when the common bile duct is tied a much smaller dose of toluylendiamine is necessary to cause jaundice and death than is the case in intact animals.

Chronic poisoning by small doses of toluylendiamine causes lesions in the hepatic cells, which are followed by a proliferation of the connective tissue, comparable to that found in cirrhosis of the liver.

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*The Prevention of Consumption.* By ALFRED HILLIER, M.D., C.M., B.A.; Secretary of the National Association for the Prevention of Consumption (London); Member of the Council of the International Association for the Prevention of Tuberculosis (Berlin); Visiting Physician to the London Open-Air Sanatorium. Revised by PROFESSOR R. KOCH. With Illustrations. London: Longmans, Green & Co. 1903. Pp. 226.

DEALING with tuberculosis as a great social problem this work should appeal not only to medical men but also to legislators, local authorities, and intelligent citizens generally.

Indeed it is chiefly for the latter classes that the book has been written. The clinical and therapeutic aspects of the subject have been purposely omitted, while science has been appealed to, chiefly to indicate the fundamental basis on which the author's statements rest.

Dr. Hillier traces the history of phthisis from the time of Hippocrates to the demonstrations of Klencke in 1843, and of Villemin in 1863, and thence to the culminating discovery of the tubercle bacillus by Koch in 1881.

He shows that the infectiousness of phthisis was recognised in the time of Aristotle, and that it was known to Galen and others of the Greek physicians. Passing to the middle ages the work of Sylvius (1614-1672), in demonstrating the connection between tubercles and phthisis, is dealt with, and the English writers, Lazariüs Raverius (1638), and Morton (1689), are quoted to show the prevalence of the belief in the infectiousness of the disease in this country, a belief which, under the influence of Valsalva and Morgagni (1697-1748), was also held by the mass of the people in Italy. This chapter, which is of fascinating interest, is enlivened by references to mediæval efforts to deal with the tuberculosis problem and to the influence exerted by the disease on Art, as shown in the works of Botticelli and Rossetti.

The chapter on infection contains the root of the matter—the conveyance of the disease from man to man through tuberculous sputum and tubercle laden cough-spray, recent experiments regarding the latter point being given very fully.

The relation of bovine to human tuberculosis is dealt with impartially, the arguments of both parties in the controversy being clearly stated; the author merely insisting that the question is one of minor importance to that of the conveyance of the disease from man to man.

The chapters devoted to personal precautions, public action, and sanatoria, deal lucidly with the chief methods which may be employed to prevent the disease.

The illustrations are numerous; most of them have from time to time appeared in *Tuberculosis*, the Journal of the National Association for the Prevention of Consumption, while two of Köhler's charts are also reproduced.

The appendix contains reprints of the pamphlets issued by

the London section of the National Association, also notes on State insurance for workmen in Germany, instructions issued by the Board of Health of Boston, Mass., and other matters of a like nature.

The work is published under the *imprimatur* of Professor Koch, who contributes an introduction, in which he states that "the book in all respects represents the latest scientific views, which are so clearly expounded that every intelligent reader can derive instruction from them."

We think that the work should aid materially in the formation of a healthy public opinion on this important question.

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*The Edinburgh Medical Journal.* Edited by G. A. GIBSON, M.D., F.R.C.P. Ed.; and ALEXIS THOMSON, M.D., F.R.C.S. Ed. New Series. Vol. XIV. Edinburgh and London: Young J. Pentland. 1903. 8vo. Pp. xxxvi + 572.

A NOVEL and useful feature in the present volume is the arrangement by which the article on "Medical Education in the United Kingdom" is placed in the forefront of the book, although it really formed part of the October number of the Journal.

Following the practice of recent years each monthly number opens with editorial comments on important current topics. This section is followed by original communications, many of which are splendidly illustrated; reviews of British and foreign literature; notes on books; reports on recent advances in medical science; reports of the medical societies; analytical reports; and occasional obituary notices.

Among the many "Original Communications" in this volume, we observe two notable "Addresses." Of these the first is the very learned "Introductory Address to the Class of Anatomy in the University of Edinburgh," delivered on October 13, 1903, by Professor D. J. Cunningham, M.D., D.Sc., D.C.L., LL.D., F.R.S. The second is the "Valedictory Address, delivered before the Medico-Chirurgical Society of Edinburgh on the 4th of November, 1903," by Professor Sir Thomas R. Fraser, M.D., F.R.C.P. Ed., President of the Society.

An interesting paper on a case of "meralgia paræsthetica"

by Mr. Edwin Bramwell, Assistant Physician to Leith Hospital, is contributed to the July number (page 26, *et seq.*). Bernhardt, in 1895, described five cases of paræsthesia limited to the distribution of the external cutaneous nerve. All the patients were middle-aged men, and in all the symptoms were unilateral. The general health in every case was excellent. The patients all complained of abnormal sensations, chiefly a feeling of numbness on the front and especially the outer side of the thigh. Actual pain was experienced in this area after walking, or when it was pressed upon. There was a slight degree of objective sensory disturbance, scarcely amounting to a true anæsthesia, and strictly limited to the distribution of the external cutaneous nerve of the affected leg. There was no weakness of the leg, and no disturbance of the sphincters. Typhoid fever, lead poisoning, and cold douching appeared to be ætiological factors of importance in three cases.

Bernhardt was of opinion that the symptoms were dependent upon a more or less severe neuritis of the external cutaneous nerve. As regards treatment, he considered rest of importance, while warm baths, massage, and the faradic brush had, he thought, a beneficial influence.

A few months after the publication of Bernhardt's paper, a monograph on the subject, by Roth, of Berlin, appeared under the name of "Meralgia Paræsthetica." Roth described fifteen cases. During the three succeeding years, no fewer than nine original articles on the subject appeared in the *Neurologisches Centralblatt*, Leipzig, alone.

Treatment is usually unsatisfactory. In Mr. Bramwell's case, Mr. Alexis Thomson resected the affected nerve on January 30, 1902. The patient remained free from pain for a month after operation, but the pain afterwards returned, and, when the case was reported, was almost as bad as formerly.

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*Catechism Series. Physics. Part II. Edinburgh: E. & S. Livingstone. 1903. Pp. 80.*

THIS "Part" of the "Catechism Series" includes Heat, Wave-Motion, Light, Magnetism and Electricity. A great deal of information is contained in the eighty pages of question and answer of which the book consists. We have already

expressed our general opinion of the Catechism Series, and we have only to add that the present is a good specimen of the publication.

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*Modern Surgery : General and Operative.* By JOHN CHALMERS DA COSTA, M.D. ; Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia ; Surgeon to the Philadelphia Hospital and to St. Joseph's Hospital, Philadelphia. Fourth Edition, rewritten and enlarged. With 707 Illustrations, some of them in Colours. Philadelphia, New York, and London : W. B. Saunders & Co. 1903. Pp. 1099.

BUT three years have elapsed since the third edition of this book was reviewed in this Journal. To have a new edition called for so soon speaks well for the favour with which the author's efforts are received by the profession. To say that the present edition is rewritten and enlarged is no loose and empty statement, as can be verified by its perusal. Though the actual number of pages is less by some 8 or 10, still, when we consider that the size of the page is increased by about one-fourth, and that the number of illustrations is increased from 493 to 707, it becomes apparent that the present volume is practically a new treatise.

Almost every point to which we drew attention in our review of the previous edition as requiring improvement has been revised—notably the chapter on tumours, the section on rickets, the surgery of the gall-bladder and bile ducts, while the section on diseases of the pancreas is brought well up to date.

There is one section which we should like to see improved in a subsequent edition—viz., that on diseases of the mouth and tongue, which is most inadequate for modern requirements. The illustration given as Kocher's procedure for the removal of the tongue is that of his older method, while, of course, it is well known he has since very considerably modified this operation. We can congratulate the author on the success attending his efforts in the production of a reliable "modern surgery," and can favourably commend the book to every student.

PART III.  
MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—SIR THORNLEY STOKER, M.D., F.R.C.S.I.  
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—SIR ARTHUR V. MACAN, M.B., Pres. R.C.P.I.  
Secretary—R. TRAVERS SMITH, M.D., F.R.C.P.I.

*Friday, November 20, 1903.*

THE PRESIDENT in the Chair.

*Exhibitions.*

DR. TRAVERS SMITH showed a boy with a peculiar intra-thoracic murmur, due to enlarged mediastinal glands.

DR. TRAVERS SMITH also showed a girl, the subject of erythema marginatum perstans of the face. Details of both cases will be published later.

*The Treatment of Enteric Fever.*

SIR JOHN MOORE read a paper on this subject. He touched on only the following points, which had made a fixed impression upon his mind as a result of an experience extending over many years :—(1) The sanitary housing of the patient ; (2) the relation of diarrhœa to early purgation ; (3) antipyresis generally uncalled for ; (4) management of the bowels and intestinal antisepsis ; (5) intestinal hæmorrhage ; (6) perforation, under which heading the surgical treatment of this deadly complication was illustrated by notes of five cases which had occurred in the practice of his colleague, Mr. William Taylor, F.R.C.S.I. ; (7) diet in the closing stages of the fever. In conclusion, the author warned young physicians against the perilous error of adopting a routine treat-



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ment of enteric fever, particularly in the matter of alcoholic stimulants. The attitude of the physician who is in attendance upon a patient in enteric fever should be that of "watchful, intelligent and armed expectancy." We should not forget that enteric is a self-limited disease, which in perhaps a majority of cases tends to run its appointed periodic course without mishap, the essential symptoms having "kept the noiseless tenor of their way." There is, in fact, no malady in which it is so desirable to avoid what has been well termed the "*nimia diligentia medici*."

The paper gave rise to a long and lively discussion. Among the speakers were DR. J. M. DAY, DR. H. C. DRURY, DR. BURGESS, DR. CRAIG, MR. WILLIAM TAYLOR, DR. G. PEACOCKE, DR. S. M. THOMPSON, DR. LITTLE, DR. POLLOCK, DR. M'VITTIE, DR. O'CARROLL, and DR. W. J. THOMPSON.

SIR JOHN MOORE replied.

The Section then adjourned.

## SECTION OF OBSTETRICS.

President—ALFRED J. SMITH, M.B., F.R.C.S.I.

Secretary—T. HENRY WILSON, F.R.C.P.I.

*Friday, November 27, 1903.*

The PRESIDENT in the Chair.

### *Exhibits.*

DR. SMYLY showed an interesting fibro-cyst of the uterus and a sarcomatous tumour which occurred at the seat of operation six years after an ovariectomy.

The PRESIDENT showed a specimen of tubal pregnancy strangulated by torsion of the pedicle.

### *The Effect of the Midwives Act of 1902 on Irish Training Institutions and Nurses.*

The PRESIDENT, in an Inaugural Address on this subject, pointed out the grave injustice that had been done to our midwifery hospitals and to our Irish-trained midwives by the regulations drawn up by the Central Midwives Board under the Midwives Act of 1902. He approved the general principles of the Bill, but took exception to the regulations as to training of pupil midwives—viz. (1) "That she must attend and personally deliver twenty cases of labour; (2) that she must nurse twenty

cases for ten days after confinement." It is impossible for hospitals such as the Rotunda, the Coombe, and Holles-street, in Dublin, to give twenty cases to a nurse for personal conduction, because to do so would necessitate doubling the size of the hospitals. It is equally impossible to enable a woman to nurse her patient for ten days after labour, because the patient leaves the hospital at the end of the eighth day, and would not remain longer even if the hospital authorities could keep her. He contrasted the excellent methods of training Irish midwives, as required by the Irish Chartered Hospitals, with the method of training required by the Central Midwives Board, to the great disadvantage of the latter. He also drew attention to the fact that a considerable number of English women have up to this availed themselves of the many advantages to be obtained in our midwifery hospitals, and that many Irish nurses leave Ireland every year to practise among their kith and kin in England. Now this must all stop, because the Irish maternities cannot honestly comply with the regulations as required by the Central Midwives Board. The position he took up was that nurses who have obtained their certificates from the three chartered hospitals should at least be entitled to be admitted to the examination of the Central Midwives Board without having to spend a further three months in England.

DR. TWEEDY proposed a vote of thanks to the President for his able Address. In reference to the Midwives Registration Act he said :—I fear that our profession cannot be held blameless for the present condition of affairs. When it became apparent to everyone that rightly or wrongly the English public intended to have the Bill as it at present stands, there was no unanimity of opinion among our professional brethren here. To the outsider the heads of some of our large maternity hospitals appeared apathetic, and our chartered Colleges seemed entirely concerned with an effort to prevent the extension of the Bill to Ireland. Dr. Smyly alone, so far as I know, held consistent views, and urged the importance of having Ireland included in the benefit of the Act. It was not until the Bill had almost become law that those in authority in the Rotunda aroused themselves to obtain certain privileges for the Chartered Hospitals of Dublin. These privileges, I understand, extend only to the year 1905, and, such as they are, we share them in common with every "handy woman" in England. After 1905, women who wish to practise midwifery in England will have to pass a State ex-

amination ; before presenting themselves for this, certain conditions will have to be fulfilled which render it impossible for Irish nurses to enter for it. The Rotunda is the largest hospital of its kind in the three Kingdoms ; 170 women have crossed the water to enter it as nurses within the past five years ; that in itself is sufficient proof of the value attached to our certificates. These nurses have to spend six months in the hospital, furnish testimonials of exemplary character, see hundreds of conductions, attend personally at some, look after the women from the time they arrive in hospital till they leave, care the children, &c. They receive a thorough training in antiseptics, and, finally, do not receive their certificates until they have passed a difficult examination. Yet this miserable rule of having to attend a woman for ten days after confinement absolutely makes it impossible for our nurses to qualify. It is a fact of common knowledge that the lying-in women in the Rotunda spend only eight days in the institution ; and, consequently, the "handy woman" in the English villages, who has muddled through her twenty conductions, and has attended for ten days in each case, will be adjudged more worthy to present herself for examination than our nurses. I trust that this question will not be let rest. If we agree on some common course of action we shall surely succeed in getting the Privy Council to alter the rules that at present exist ; and I hope that before we leave this meeting some resolution will be adopted which will be the means of removing the injustice that so nearly threatens us.

The resolution was unanimously adopted.

DR. KIDD, in proposing "That in the opinion of the Obstetric Section of the Royal Academy of Medicine in Ireland, any woman holding the nursing certificate of the Irish Chartered Maternity Hospitals shall be deemed to have complied with the rules of the Central Midwives Board regulating the course of training of 'pupil midwives,' and shall be eligible to present herself for the examination of the Central Midwives Board," said that in this resolution there is nothing contentious. Professor Smith pointed out very clearly the difference which exists between the training of midwives here in Ireland and that which, under the terms of the Act, would entitle the ordinary midwife in England to present herself for examination by the Central Midwives Board. To tell you of the status of our Dublin Midwifery Hospitals and their mode of training nurses would be "bringing coals to Newcastle." Dr. Tweedy mentioned that eight days

was the recognised number of days spent by a patient in the maternity of the Rotunda Hospital. I believe that nine days is the number at the Coombe; but any person who has had experience knows the extreme difficulty there is in keeping that class of patient in hospital, even for so short a time. A hospital is not a prison, a patient can leave at any time, and, in order to save the hospital authorities under these circumstances, the patient, if she insists on going out contrary to the advice of the staff, has to sign a paper that she leaves at her own risk. The reason *why* they want to go so soon is not far to seek. These poor people have to leave their homes and children without anyone to take care of them, relying probably on some neighbour to look after them when she can spare time from her own family duties. It is quite impossible to detain the patients for the period of ten days required by the rules. With regard to the allocating of twenty conductions to each nurse, I think that instead of doubling the size of our hospitals we would have to double the number of births. Dr. Tweedy has pointed out that no less than 170 midwives who were trained in the Rotunda Hospital during the last five years went over to practise in England. I think that if this point were brought prominently forward, it is the one and sole proof needed to show the estimation in which the diploma of the Rotunda Hospital is held in England. With regard to the section of the Act which gives us two or three years' grace, it really reduces the nurses who have received the certificate of the Rotunda or the Coombe to the level of the "handy women" in England. I think that if this resolution is adopted, and if pressure is brought to bear on the Privy Council to alter the rules so as to allow the admission of our trained nurses to the examinations of the Central Midwives Board, we shall succeed in getting justice done to the Chartered Hospitals of Dublin.

DR. JELLETT in seconding Dr. Kidd's resolution said that he would like to point out that the present difficulty of the Dublin hospitals was brought about not by the provisions of the Midwives Act, but by the regulations of the Central Midwives Board sanctioned by the Privy Council; and that it was, therefore, possible to overcome it, as these regulations could be changed. There was not the least occasion for the Dublin hospitals to lose heart. If the proper stand is made, the changes are sure to be effected. The present regulations practically prohibit the training of nurses in Ireland for English districts. In this country



we have been accustomed for a long time to the cry of "Ireland for the Irish," and perhaps the present difficulty is due to the extension of a cry to England, that, in other words, the regulations are an attempt, whether deliberate or not, on the part of the English maternity hospitals to prevent the training of English nurses, for English districts, in Ireland. Now there are two ways out of the present difficulty open to the Irish hospitals. They can claim either that their examinations should be recognised as equivalent to the examination of the Central Midwives Board or that, in the terms of the resolution, the certificates of the Irish hospitals shall be taken by the Central Midwives Board as evidence of sufficient training, though this would seem to be self-evident to anyone. Indeed, the opinion has been expressed that the knowledge of our Irish maternity nurses is often greater than that of the average medical student. It is interesting to note the attitude of the promoters of the different Bills towards the Irish hospitals in the past and at present. (The speaker then read some correspondence which passed between the College of Physicians and the promoters of the Midwives Bills of 1900 and 1902.) When the Bill of 1900 was before Parliament, Mr. Heywood Johnston expressed a willingness to accept an amendment recognising the examinations of the Irish hospitals as equivalent to the examination of the Central Midwives Board. When the Bill of 1902 came forward he refused to accept such an amendment, but at the same time disclaimed any hostility to the Irish hospitals, and stated that in his opinion the Bill would not injure them. Now that the Bill is law, the first act of a Board largely controlled by the promoters of the Bill is to draw up rules which effectually exclude Irish nurses. It is of importance to know how the Irish nurses stand at present, and what would be their position if they asked to be examined by the Central Midwives Board. On this account he had written to Dr. Sinclair, a member of the Board, and asked him what would be the position of an Irish nurse who applied to be admitted to the examination of the Board, and who said—"I have been a pupil midwife for six months at one of the Dublin Incorporated Hospitals. During that time I have attended a regular course of instruction; I have watched some 300 to 400 deliveries; I have personally assisted at some 20 to 30; I have personally conducted some three or four; I have watched some 600 to 800 women during their puerperium; and I have personally nursed some 20 to 30. I have passed the examination of the hospital."

Dr. Sinclair, in reply, had stated that the Board had said that it was bound by the Privy Council Rules, but that he considered that the Irish hospitals had a substantial grievance which called for removal. What were they going to do? The resolution of the Academy would be of little value unless backed unanimously by the hospitals, by the Royal Colleges, and by extraneous opinion, but if it were brought before these bodies and the Irish members, and then before the Privy Council, it could not fail. The Central Midwives Board were undoubtedly a powerful body, but when it went too far it could be pulled up by the Privy Council, as had been done before. Of the present regulations some were good and some were bad; and it was a curious fact that—as was commonly hinted—almost all the good regulations were recommended by a minority of the Board, were refused by the majority, and were finally forced on the majority by the Privy Council. In other words, the majority report was, to a very large extent, rejected by the Privy Council, and if the Privy Council had compelled the Central Board to change their regulations once, it could make them do so again. But to succeed there must be absolute unanimity between the Dublin hospitals. The worst enemies of these hospitals could not accuse them of over zeal in their own behalf in the past. The College of Physicians and the Board of the Rotunda Hospital had done something; the College of Physicians had worked hard, but had failed to accomplish what it wanted; the Rotunda had succeeded in getting an amendment to the Bill, which put the nurses of that institution on the same level as the “handy women” of England. In the future, if reform was to be obtained the Dublin hospitals, the Royal Colleges, and this Academy must unanimously insist on the admission of the nurses of the chartered hospitals to the examination of the Central Board.

The PRESIDENT then put the resolution to the meeting, and declared it unanimously carried.

DR. SMYLY: The resolution I have to propose is one of great importance to our country and profession, and therefore should arouse the most intense feelings of patriotism and professional *esprit de corps*. It is that this Midwives Act should be extended to Ireland. For many years I have felt it to be a very desirable Act both for England and Ireland, and at first I worked with some energy for its passing; but when I found that Ireland was excluded from the Act, and that we were excluded from all the benefits of it, it seemed to me that we should suffer a double

wrong—we not only get nothing ourselves, but we are deprived of our present privileges. I think this Act would be of benefit to us in three ways. First, to poor lying-in women in Ireland. It has been said to me often that we do not want the Midwives Act over here when we have a Poor-Law that provides midwifery for necessitous women. I give my opinion—it has been formed from some experience among the poor of Dublin and elsewhere, and not founded on statistics, so it may clash with and be different from the opinion of other people—but it is my opinion that in the poorer parts the lying-in women are not attended by trained nurses, but by ignorant women who have no training whatever, and are popularly known as “handy women.” These persons, however good their motives may be, are absolutely ignorant of the methods which are best for the safety of the mother and her offspring. I am sure we can all remember instances in which injuries have been done by these women. One case I remember—that of a woman who came to me at the Rotunda suffering from a disease which required surgical treatment. I suggested that she should come to the hospital for operation, and she said that she could not as she had some labour cases to attend to. I asked her was she a trained nurse, and she said no. Was she aware of the danger lying-in women incurred through her? She replied that she sponged herself several times a day, and kept herself quite clean. I asked her did she make p. v. exams.? She said she did, that her cases would think she was no good if she did not. It would be impossible for such a woman to practise under the Midwives Act. No woman will be allowed to practise midwifery again without a certificate—that is, in England. If the Bill extended to Ireland the effect would be that these poor women would be attended by trained nurses. However superficial such training might be, she would at least have learnt the use of antiseptics, the methods of cleanliness, the prevention of puerperal fever, &c., and she would know when to send for a doctor. Now, what an inestimable boon this would be to our poor people. In the reports brought before us annually, there is seldom one in which there are not reports of cases mismanaged by midwives. That would be prevented by the legislation in this Bill. The untrained nurse does not send for a doctor, simply because she does not know that her patient is in danger. If under the Midwives Act a nurse meet with a case of malpresentation, hæmorrhage, and so on, and she does not send for a doctor, she is liable to have

her name erased from the Midwives Roll. If guilty of drunkenness, or immorality, she would be liable to punishment. How does this Bill affect the medical profession? The midwives have to send for a doctor if anything is going wrong, and this entails a lot of work for doctors which they might otherwise not have got. And as midwives are compelled by Act under the County Councils to send for the doctor, I believe the people who compel the sending for the doctor will have to pay him; but this is not quite clear. However from many a point of view, and especially from the fact that it would be a benefit to humanity, the extension of the Act to Ireland should be looked on with favour by the medical profession. The third reason why the extension would be beneficial to us is that of the great training schools here. If we fail in our appeal to the Central Board and to the privy Council, we shall be in an unfortunate condition, and the Rotunda will receive a very great blow. If we had united to get the Bill extended to this country, we should have had our representatives on the Central Board, and their rules would not have been passed in their present form, for I cannot help feeling that these regulations were passed more through ignorance than through any feeling of malice to this country or to the Rotunda Hospital. As this resolution appeals generally to the profession in Ireland, I propose that a copy of it, if passed, be sent to the authorities of the Irish Medical Association.

DR. HORNE said we had to go back some twelve or fourteen years since this Bill was proposed, and ask who were its promoters. Not the medical profession, but a lay society and Mr. Heywood Johnston. The Obstetric Section of the Royal Academy of Medicine in Ireland had the Bill under discussion. When it came before us it was said it did not affect us at all; it was a Bill for England and Wales. We thought our poor people in this country well nursed indeed, for we had the Coombe and the Rotunda Hospitals, which were sending out nurses all over the country. A second attempt was made to carry the Bill, but it was still resisted by the profession, as against their rights. A third time, it becomes law. It is because it is law that I feel justified in saying that it should be extended to Ireland. However, there may be some difficulties about its extension to Ireland. Dr. Smyly has mentioned one very important point. How will medical men receive it? How will the County Councils, if they find they have to pay the costs? And I do not think that a trained nurse will go, say, to the Arran Isles for a salary of £15

a year. However, the meeting very properly decided that the resolution ought to go before the Irish Medical Association in order that the profession may give their opinion on it. Probably, however, we are proceeding too fast. The Central Midwives Board may be looking after their own interests. I wrote the other day to the Secretary of that Board, asking for explanations, first as to the nurses' certificates in training, and those to come afterwards. I got a reply stating that my letter would be laid before the Board in due course. There is no necessity for action until they say they cannot receive our certificates. If they do not, I think this Act ought to be extended to Ireland, but with very decided amendments. I should be very sorry to see nurses trained under a certified midwife because she has seen twenty cases and attended for ten days afterwards. I think that in centres like Dublin and Belfast the right should be reserved for nurses to train just as at the present time, for it is only in big clinical centres that attendance should be recognised and certificates given.

The resolution was put to the meeting, and unanimously adopted.

DR. STEVENS proposed that the resolution of Dr. Kidd, which was seconded by Dr. Jellett, *re* the Chartered Hospitals, should be sent to the Central Midwives Board, and to the Privy Council. On account of some remarks of Drs. Tweedy and Jellett, he would like to state that his Board had been willing to co-operate with the Rotunda Hospital, and had sent a communication to the Board of that hospital, which had not received any reply. He added that his Board would be only too happy to act with the other hospitals, for it was only by united action they could hope to prosecute their claim successfully. He was there on behalf of his Board to join in any resolution they might adopt, and he was heartily in agreement with the opinions of the meeting.

DR. BARRY seconded the resolution, and thought it was one that should be accepted without hesitation, for it was no more than justice that they should have good nurses not only here but across the water. The united action of the hospitals would be bound to get them what they wanted, not as a favour, but as a right.

The resolution was adopted, and

The Section adjourned.

## CORK MEDICAL AND SURGICAL SOCIETY.

President—J. COTTER, M.D., F.R.C.S.I.

Secretary—RICHARD P. CROSBIE, M.A., M.B., R.U.I.

*Wednesday, November 25, 1903.*

THE PRESIDENT in the Chair.

### *Congenital Malformations.*

THE PRESIDENT showed a female child, aged four, with congenital absence of the lower eyelid on the right side, an unusually extensive hare-lip on the same side, with a fissure in the gum just under it, and a double auricle surrounding the left auditory meatus. The palate was highly arched, but not cleft. The child was also suffering from chorea, but its intelligence was up to the normal standard.

### *Ovarian Dermoid Cyst.*

DR. H. CORBY showed a dermoid cyst of the ovary which he had removed from a girl, aged eleven. The patient noticed a lump in the abdomen, which gave rise to no symptoms, and which was very movable. On opening the abdomen, it was seen to be connected with one of the ovaries, and on removal was found to be composed of an ordinary glandular cyst, and a dermoid one, containing hair, bone, &c. The patient made a good recovery.

### *Chronic Jaundice from Gallstones.*

DR. T. GELSTON ATKINS read notes of a case of removal of gall-stones for jaundice persisting for seven years. The patient was a woman, aged thirty-five. Both liver and gall-bladder were enlarged. Twenty-six stones were removed from the gall-bladder, and a large stone could still be found in the common bile duct. It was so soft that on gentle pressure between the fingers it crumbled away, and the duct was then flushed. The patient recovered and the jaundice disappeared.

## SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR JOHN MOORE, B.A., M.D., Univ. Dubl.;  
F.R.C.P.I.; F.R. Met. Soc.;  
Diplomate in State Medicine and Ex-Sch. Trin. Coll. Dubl.

### VITAL STATISTICS.

*For four weeks ending Saturday, January 2, 1904.*

### IRELAND.

#### TWENTY-TWO TOWN DISTRICTS.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending January 2, 1904, in the Dublin Registration Area and the twenty-one principal provincial Urban Districts of Ireland was 27.6 per 1,000 of their aggregate population, which for the purposes of these returns is estimated at 1,093,289. The deaths registered in each of the four weeks ended Saturday, January 2, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Dec. 12	Dec. 19	Dec. 26	Jan. 2			Dec. 12	Dec. 19	Dec. 26	Jan. 2	
22 Town Districts	21.8	26.0	19.1	27.6	23.6	Lisburn -	4.5	27.3	18.2	13.6	15.9
Armagh -	6.9	27.5	6.9	34.4	18.9	Londonderry	10.1	26.5	12.6	29.2	17.4
Ballymena	19.2	19.2	4.8	19.2	15.6	Lurgan -	13.3	31.0	8.9	26.6	20.0
Belfast -	21.1	25.9	23.0	26.5	24.1	Newry -	25.2	21.0	12.6	21.0	20.0
Clonmel -	25.6	25.6	25.6	25.6	25.6	Newtown- ards	40.1	34.3	28.6	22.9	31.5
Cork -	19.9	17.8	15.1	20.5	18.3	Portadown -	25.8	31.0	20.7	20.7	24.6
Drogheda -	27.6	23.6	12.3	12.3	20.5	Queenstown	6.6	46.1	13.2	-	16.5
Dublin (Reg. Area)	24.6	25.6	19.9	31.8	25.5	Sligo -	9.6	19.2	-	24.0	13.2
Dundalk -	12.0	23.9	27.9	12.0	19.0	Tralee -	15.9	15.9	-	10.6	10.6
Galway -	31.1	15.5	35.0	35.0	29.2	Waterford -	19.5	31.2	13.6	27.3	22.9
Kilkenny -	29.5	63.9	19.7	29.5	35.7	Wexford -	37.4	23.3	9.3	23.3	23.3
Limerick -	23.2	36.9	8.2	50.6	29.7						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from certain epidemic diseases, registered in the 22 districts during the week ended Saturday, January 2, 1904, were equal to an annual rate of 2.2 per 1,000—the rates varying from 0.0 in fifteen of the districts to 4.8 in Ballymena and Sligo Urban Districts, respectively. Among the 182 deaths from all causes in Belfast are 18 from whooping-cough, one from diphtheria, 2 from enteric fever, and 2 from diarrhoeal diseases. The 37 deaths from all causes in Limerick include 3 from whooping-cough.

#### DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this area is 378,994, that of the City being 293,385, Rathmines 33,203, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, January 2, 1904, amounted to 228—105 boys and 123 girls; and the deaths to 240—116 males and 124 females.

#### DEATHS.

The deaths registered represent an annual rate of mortality of 33.0 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the Area, the rate was 31.8 per 1,000. During the fifty-two weeks ending with Saturday, January 2, 1904, the death-rate averaged 23.9, and was 2.1 under the mean rate for the corresponding portions of the ten years 1893–1902.

There was one death from measles. Scarlet fever and influenza each caused 2 deaths. Twelve deaths from whooping-cough and one death each from enteric fever and simple continued fever were registered. In the preceding 4 weeks the deaths from whooping-cough had been 5, 7, 4, and 3, respectively, and the deaths from enteric fever had been 2, 1, 1, and 2, respectively. Not one death from small-pox, typhus, or diphtheria was registered.

Included in the 36 deaths due to tuberculous disease are 7 from tubercular phthisis, 18 from *phthisis*, 3 from tubercular



meningitis, one from tabes mesenterica, and 7 from other forms of the disease.

Three deaths were assigned to carcinoma and 5 to *cancer* (*malignant disease*).

Of 14 deaths from diseases of the nervous system, 6 deaths were caused by *convulsions*; 5 of the latter were of infants under one year old.

There were 47 deaths from diseases of the heart and blood-vessels.

Of 59 deaths attributed to diseases of the respiratory system, 34 were caused by bronchitis, 10 by broncho-pneumonia, and 10 by *pneumonia*. The total (59) is equal to an annual rate of 8.1 per 1,000 of the population of the Dublin Registration Area, the annual average rate for the corresponding week of the preceding 10 years being 7.0 per 1,000.

Of 6 deaths attributed to accidental violence, 4 were due to burns, scalds, or explosions, and one death was caused by drowning.

In 9 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases include the deaths of 3 children under one year old and the deaths of 3 persons aged 60 years or upwards.

Sixty-nine of the persons whose deaths were registered during the week ended Saturday, January 2, 1904, were under 5 years of age (37 being infants under one year, of whom 11 were under one month old); and 61 were aged 60 years and upwards, including 27 persons aged 70 and upwards, of whom 14 were octogenarians, and 2 (a man and a woman) were stated to have been aged 91 and 90 years respectively.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

#### STATE OF INFECTIOUS DISEASE IN THE DUBLIN REGISTRATION AREA AND IN BELFAST.

Returns of the number of cases of infectious diseases notified under the "Infectious Diseases (Notification) Act, 1889," as set forth in the following table, have been furnished by Sir Charles A. Cameron, C.B., M.D., Medical Superintendent Officer of Health for the City of Dublin; Mr. Fawcett, Executive Sanitary Officer for Rathmines and Rathgar Urban District; Mr. Manly,

Executive Sanitary Officer for Pembroke Urban District; Mr. Heron, Executive Sanitary Officer for Blackrock Urban District; Dr. Byrne Power, Medical Superintendent Officer of Health for Kingstown Urban District; and Dr. Whitaker, Medical Superintendent Officer of Health for the City of Belfast.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area (viz.—the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown), and in the City of Belfast, during the week ended January 2, 1904, and during each of the preceding three weeks.

CITIES AND URBAN DISTRICTS	Week ending	Small-pox	Measles	Rubella, or German Measles.	Scarlet Fever	Typhus Fever	Relapsing Fever	Diphtheria	Alimentary Group	Continued Fever	Typhoid or Enteric Fever	Erysipelas	Puerperal Fever	Varicella	Other Notifiable Diseases	Total
City of Dublin	Dec. 12	-	-	-	8	-	-	3	-	2	11	7	-	-	-	31
	Dec. 19	-	1	-	13	-	-	5	-	2	19	16	-	-	-	59
	Dec. 26	-	14	-	7	-	-	-	-	1	16	14	-	-	-	52
	Jan. 2	-	12	-	13	-	-	8	-	-	17	11	-	-	-	61
Rathmines and Rathgar Urban District	Dec. 12	-	-	-	1	-	-	1	-	-	2	1	-	1	-	6
	Dec. 19	-	-	-	1	-	-	1	-	-	2	-	-	-	-	4
	Dec. 26	-	-	-	1	-	-	-	-	2	2	-	-	-	1	5
	Jan. 2	-	-	-	1	-	-	-	-	-	1	1	-	-	-	3
Pembroke Urban District	Dec. 12	-	-	-	-	-	-	1	-	-	-	3	-	6	-	10
	Dec. 19	-	-	-	-	-	-	-	-	-	-	1	-	-	2	3
	Dec. 26	-	-	-	-	-	-	-	-	-	-	-	-	6	-	6
	Jan. 2	-	-	-	-	-	-	3	-	-	1	-	-	1	3	8
Blackrock Urban District	Dec. 12	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2
	Dec. 19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Dec. 26	-	-	-	3	-	-	-	-	-	-	1	-	-	-	4
	Jan. 2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
Kingstown Urban District	Dec. 12	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	Dec. 19	-	-	-	-	-	-	-	-	-	1	1	-	-	-	2
	Dec. 26	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	Jan. 2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
City of Belfast	Dec. 12	2	-	-	20	1	-	6	1	6	8	17	2	-	-	63
	Dec. 19	5	-	-	24	1	-	10	2	5	10	13	-	-	-	70
	Dec. 26	1	-	-	22	-	-	2	-	5	4	11	2	-	-	47
	Jan. 2	2	-	-	15	-	-	1	1	8	4	13	2	-	-	46

#### CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ended Saturday, January 2, 1904, eight cases of measles were admitted to hospital, there was one death, and 20 patients remained under treatment at its close.

Nine cases of scarlet fever were admitted to hospital, 10 cases were discharged, there was one death, and 101 cases remained under treatment at the close of the week. This number is

exclusive of 12 patients still under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital, Dublin.

Two cases of typhus fever were admitted to hospital, and 3 remained under treatment at the close of the week.

Twelve cases of diphtheria were admitted to hospital, 3 were discharged, and 22 cases remained under treatment at the close of the week.

Four cases of enteric fever were admitted to hospital, 15 cases were discharged, there were 3 deaths, and 63 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 9 cases of pneumonia were admitted to hospital, 4 patients were discharged, there was one death, and 16 cases remained under treatment at the end of the week.

#### ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, January 2, 1904, in 76 large English towns, including London (in which the rate was 21.1), was equal to an average annual death-rate of 20.6 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 21.7 per 1,000, the rate for Glasgow being 24.6, and for Edinburgh 20.0.

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#### *Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of December, 1903.*

Mean Height of Barometer, - - -	29.660 inches.
Maximal Height of Barometer (25th, at 9 a.m.),	30.171 ,,
Minimal Height of Barometer (10th, at 3 a.m.),	28.810 ,,
Mean Dry-bulb Temperature, - - -	40.3°.
Mean Wet-bulb Temperature, - - -	38.7°.
Mean Dew-point Temperature - - -	36.5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.220 inch.
Mean Humidity, - - -	86.9 per cent.
Highest Temperature in Shade (on 21st)	55.8°.
Lowest Temperature in Shade (on 2nd),	27.1°.
Lowest Temperature on Grass (Radiation) (2nd),	21.9°.
Mean Amount of Cloud, - - -	64.4 per cent.
Rainfall (on 16 days), - - -	1.586 inches.
Greatest Daily Rainfall (on 12th),	.291 inch.
General Directions of Wind,	- - S.E., S.W., W.

*Remarks.*

The salient features of the closing month of the year 1903 were—cold spells of considerable intensity at the beginning and end, separated from each other by a wave of warmth, which culminated in day temperatures of  $55.8^{\circ}$  and  $55.7^{\circ}$  on the 21st and 22nd respectively; a rainfall which was frequent (16 “rainy days”) but deficient in amount (1.586 inches against an average of 2.390 inches); a remarkable and persistent depression of the barometer between the 4th and 13th, followed by a very gradual increase of atmospheric pressure from the latter day to the 20th, and a high and relatively steady barometer thence to the 30th inclusive; and finally, an unusual prevalence of S.E. winds. In the City of Dublin the estimated duration of bright sunshine was 67.25 hours, compared with 53.25 hours in December, 1902—the daily average being 2.17 hours against 1.72 hours in 1902.

In Dublin the arithmetical mean temperature ( $40.9^{\circ}$ ) was below the average ( $41.7^{\circ}$ ); the mean dry-bulb readings at 9 a.m. and 9 p.m. were  $40.3^{\circ}$ . In the thirty-eight years ending with 1902, December was coldest in 1878 (M. T. =  $32.8^{\circ}$ ), and in 1874 (M. T. =  $36.8^{\circ}$ ); warmest in 1898 (M. T. =  $47.6^{\circ}$ ), and in 1900 (M. T. =  $47.1^{\circ}$ ).

The mean height of the barometer was 29.660 inches, or 0.215 inch below the corrected average value for December—namely, 29.875 inches. The mercury rose to 30.171 inches at 9 a.m. of the 25th, and fell to 28.810 inches at 3 a.m. of the 10th. The observed range of atmospheric pressure was, therefore, 1.361 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was  $40.3^{\circ}$ , or  $3.7^{\circ}$  below the value for November, 1903. Using the formula, *Mean Temp.* = *Min.* + (*Max.* - *Min.*  $\times$  .52), the value was  $41.0^{\circ}$ , or  $0.9^{\circ}$  below the average mean temperature for December, calculated in the same way in the thirty years, 1871-1900, inclusive ( $41.9^{\circ}$ ). The arithmetical mean of the maximal and minimal readings was  $40.9^{\circ}$ , compared with a thirty years' average of  $41.7^{\circ}$ . On the 21st the thermometer in the screen rose to  $55.8^{\circ}$ —wind, S., on the 2nd the temperature fell to  $27.1^{\circ}$ —wind, W.N.W. The minimum on the grass was  $21.9^{\circ}$ , also on the 2nd. There was frost in the screen on 8 days, and 15 nights of frost on the grass were recorded.

The rainfall was 1.586 inches, distributed over 16 days. The average rainfall for December in the thirty-five years, 1866-1900, was 2.390 inches, and the average number of rainy days was 18. The rainfall, therefore, and also the rainy days were below the average. In 1876 the rainfall in December was very large—7.566 inches on 22 days. In 1868 (which was otherwise a fine and dry year), 4.749 inches fell on as many as 27 days. On the other hand, in 1867, only .771 inch was measured on 13 days; in 1885, only .742 inch on 10 days; in 1892, only .795 inch on 10 days; and in 1871, only .797 inch on 15 days. In 1902, 1.563 inches of rain fell on 13 days.

High winds were noted on 9 days, and attained the force of a gale on three occasions—the 3rd, 7th and 8th. The atmosphere was more or less foggy in Dublin on the 12th, 13th, 17th, 19th, 20th, 23rd, 24th, 25th and 26th. Hail fell on the 8th, 26th and 28th.

The rainfall in Dublin during 1903 amounted to 31.601 inches on 228 days, compared with 29.375 inches on 203 days in 1902, 26.075 inches on 179 days in 1901, 34.338 inches on 216 days in 1900, 27.737 inches on 186 days in 1899, 27.048 inches on 194 days in 1898, 29.344 inches on 211 days in 1897, 26.901 inches on 194 days in 1896, 31.242 inches on 194 days in 1895, 29.261 inches on 209 days in 1894, only 20.493 inches on 174 days in 1893, only 16.601 inches on 160 days in 1887, and a thirty-five years' average of 27.770 inches on 198 days.

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At Knockdolian, Greystones, Co. Wicklow, the rainfall was 2.830 inches on 18 days, compared with 2.920 inches on only 11 days in December, 1902. Of the total amount .460 inch fell on the 14th. From January 1st to December 31st, 1903, rain fell at Knockdolian on 211 days, to the total amount of 35.900 inches. The corresponding figures for 1895 were 35.135 inches on 174 days; 1896, 36.102 inches on 169 days; 1897, 42.885 inches on 210 days; 1898, 30.546 inches on 171 days; 1899, 36.690 inches on 182 days; 1900, 42.716 inches on 191 days; 1901, 34.750 inches on 166 days; and 1902, 40.021 inches on 168 days.

The rainfall at Clonccevin, Killiney, was 2.39 inches on 16 days. The maximal fall in 24 hours was .44 inch on the 14th. The average December rainfall of the 18 years (1885-1902) was 2.423 inches on 17.5 days.

Dr. Arthur S. Goff reports that at Lynton, Dundry, Co. Dublin, rain fell on 20 days to the amount of 2.21 inches, .51 inch being measured on the 14th. Temperature ranged from  $54^{\circ}$  on the 21st to  $27.0^{\circ}$  on the 30th. The mean shade temperature was  $40.8^{\circ}$  Fahrenheit. Sleet fell on the 26th.

Dr. B. H. Steede reports that at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell on 17 days in December to the amount of 3.733 inches. The heaviest falls in 24 hours were .670 inch on the 14th and .570 inch on the 6th. The highest temperature was  $51.3^{\circ}$  on the 22nd, the lowest was  $27.8^{\circ}$  on the 30th. At this Normal Climatological Station the total rainfall during the year 1903 was 41.820 inches on 231 days.

At Wellesley-terrace, Cork, the December rainfall was 4.67 inches on 22 days, the measurement being .22 inch in excess of the average. The greatest daily rainfall was .85 inch on the 14th. The year's rainfall at this station was 52.77 inches on 240 days, the total being 14.57 inches over the average, and the rainy days being 43 in excess. The rainfall was the largest in Cork since 1872, when the measurement was 61.5 inches.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 6.335 inches on 15 days, compared with 9.413 inches on 26 days in December, 1899, 7.810 inches on 27 days in 1900, 7.667 inches on 20 days in 1901, and 4.760 inches on 20 days in 1902. On the 8th 1.300 inches fell, and on the 21st 1.400 inches. Snow was observed on the 1st.

At the Ordnance Survey Office, Phoenix Park, Dublin, 1.816 inches fell on 18 days, .355 inch being recorded on the 7th.

Mr. John Read, of Claremount, Carrickmines, Co. Dublin, reports that the rainfall at that place in December was 2.35 inches, .87 inch being recorded on the 16th. The total rainfall for 1903 at Claremount was 33.23 inches.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health for Kingstown, reports that the mean temperature at that health resort was  $41.3^{\circ}$ , being  $0.2^{\circ}$  below the average for this month during the previous 5 years. At Portland the mean was  $41.9^{\circ}$  and it was  $40.0^{\circ}$  at Dungeness. The mean of these two numbers,  $41.0^{\circ}$  may be taken as the average mean temperature at the principal health resorts on the south coast of England. The extremes were—highest,  $54^{\circ}$  on the 21st; lowest,  $30^{\circ}$  on the 1st. At Portland they were—highest,  $52^{\circ}$  on the 9th; lowest,  $28^{\circ}$  on the 30th and 31st; and at Dungeness—

highest,  $51^{\circ}$  on the 9th; lowest,  $25^{\circ}$  on the 31st. The mean daily range was  $7.2^{\circ}$  at Kingstown,  $6.2^{\circ}$  at Portland, and  $6.8^{\circ}$  at Dungeness. The average temperature of the sea at Sandycove bathing-place was  $43.7^{\circ}$ . The rainfall at Kingstown was 2.08 inches on 16 days, at Portland it was 2.27 inches on 18 days, and at Dungeness 2.10 inches on 15 days. The mean relative humidity as observed at 9 a.m. daily, was 84 per cent. The duration of bright sunshine was 43.1 hours, whereas it was 46.7 hours at the Ordnance Survey Office, Phoenix Park., 50.8 hours at Valentia, 32.3 hours at Paisonstown, 21.5 hours at Southport, and 23.5 hours at Eastbourne.

The total annual rainfall for 1903 at Kingstown amounted to 29.28 inches on 208 days, being 0.48 inch above the average for the 13 previous years (1873-83 and 1901-02). The greatest monthly rainfall was that of September, amounting to 3.51 inches. On two days only the rainfall amounted to one inch—namely, on March 12th, when 1.15 inches fell, and on September 10th, when the measurement was 1.02 inches. The annual average relative humidity, as observed daily at 9 a.m., was 77.9 per cent.

#### RAINFALL IN 1903.

*At 40 Fitzwilliam-square, West, Dublin.*

*Rain Gauge:—Diameter of Funnel, 8 in. Height of top—Above ground, 1 ft. 4 in.; above sea level, 50 ft.*

Month	Total Depth		Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
	Inches	Depth	Date		
January, -	3.269	.577	8th		20
February, -	2.234	.644	26th		15
March, -	2.623	.808	12th		26
April, -	1.050	.340	25th		17
May, -	2.384	.479	29th		17
June, -	2.494	.838	22nd		13
July, -	4.018	.517	14th		23
August, -	2.800	.470	13th		26
September, -	3.397	<sup>a</sup> .966	10th		17
October, -	2.613	.315	6th		22
November, -	2.133	.615	28th		16
December, -	1.586	.291	18th		16
Year, -	31.601	—	—		228

<sup>a</sup> Maxim m.

The rainfall was 31.601 inches, or 3.831 inches in excess of the average annual measurement of the thirty-five years, 1866-1900, inclusive—viz., 27.770 inches.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16.601 inches—the only approach to this measurement in Dublin being in 1870, when only 20.859 inches fell; in 1884, when the measurement was 20.467 inches; and in 1893, with its rainfall of 20.493 inches. In nine of the thirty-five years in question the rainfall was less than 26 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32.966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. In 1900 the rainfall was 34.338 inches, or 6.568 inches in excess of the average for the thirty-five years, 1866-1900. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1900—namely, in 1872, when 35.566 inches fell on 238 days, and in 1880, when 34.512 inches were measured on, however, only 188 days.

In 1903 there were 228 rainy days, or days upon which not less than .005 inch of rain (five-thousandths of an inch) was measured. This was 30 above the average number of rainy days, which was 198 in the thirty-five years, 1866-1900, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rainy days were only 160, and in 1870 they were only 145.

In 1903 the rainfall in 24 hours, from 9 a.m. to 9 a.m., on no occasion exceeded one inch—the maximum being .966 inch on September 10. In 1892 the daily rainfall twice exceeded 1 inch—viz., May 28th (2.056 inches) and August 16th (1.310 inches). On no occasion in 1893 did one inch of rain fall on a given day in Dublin. In 1894 falls of upwards of an inch of rain in 24 hours were recorded on 4 occasions—viz., May 15th (1.330 inches); July 24th (1.560 inches); August 25th (1.369 inches); and October 23rd (1.042 inches). In 1895, 1.802 inches fell on January 12th; 1.014 inches on July 24th; and 1.256 inches on July 25th. In 1896, 1.563 inches fell on July 8th; 2.020 inches on July 24th; and 1.388 inches on December 8th. In 1897, 1.166 inches fell on September 1st. In 1898, on November 23rd, 1.732 inches were measured. In 1899, the rainfall exceeded one inch on 4 occasions—namely, July 11th (1.402 inches); August 5th (2.227 inches); September 30th (1.042 inches), and December 28th (1.129 inches). In 1900, as in 1899,



the rainfall exceeded one inch on 4 occasions—namely, July 27th (1.783 inches); August 2nd (2.135 inches); November 6th (1.103 inches); and November 27th (1.126 inches). In 1901, the rainfall only once exceeded one inch, but on that occasion (November 11th) the measurement was 2.037 inches. In 1902, 1.342 inches fell on July 25th, and 2.075 inches on September 2. The excessive rainfall on September 2, 1902, is noteworthy—it amounted to 2.075 inches in Dublin (Fitzwilliam-square). It was the eighth occasion only since 1865—that is, in 38 years—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the preceding 24 hours' precipitation. The previous excessive falls were—August 13th, 1874 (2.482 inches); October 27th, 1880 (2.736 inches); May 28th, 1892 (2.056 inches); July 24th, 1896 (2.020 inches); August 5th, 1899 (2.227 inches); August 2nd, 1900 (2.135 inches); and November 11th, 1901 (2.037 inches).

Included in the 228 rainy days in 1903 are 11 on which snow or sleet fell, and 19 on which there was hail. In January hail was observed on 4 days, in February on 1 day, in March on 4 days, in April on 3 days, in May on 1 day, in June on 2 days, in July on 1 day, in September and October on 1 day, and in December on 3 days. Snow or sleet fell on 3 days in January, 2 days in February, 4 days in March, and 1 day in both April and November. Thunder was heard on 3 days in July. Thunderstorms occurred once in February, July and September; three times in June; and twice in August. Lightning was seen three times in February; once in April, May, June and July; twice in August.

The rainfall in the first six months was 15.054 inches on 108 days. The rainfall exceeded 3 inches in January (3.269), March (3.623), July (4.018), and September (3.397).

The rainfall was distributed as follows:—9.126 inches fell on 61 days in the first quarter, 5.928 inches on 47 days in the second, 10.215 inches on 66 days in the third, 6.332 inches on 54 days in the fourth, and last, quarter.

More or less fog prevailed on 41 occasions—8 in January, 1 in February, 1 in March, 4 in April, 1 in May and June, 3 in July, 2 in September, 5 in October, 6 in November, and 9 in December. High winds were noted on 147 days—21 in January, 16 in February, 22 in March, 7 in April, 5 in May, 6 in June, 8 in July, 18 in August, 13 in September, 14 in October, 8 in November,

and 9 in December. The high winds amounted to gales (force 7 or upwards, according to the Beaufort scale) on 54 occasions—9 in January, 10 in February, 11 in March, 1 in April, 2 in July, 5 in August, 6 in September, 5 in October, 2 in November, and 3 in December.

Solar halos were seen on 7 occasions, a lunar halo on only 1, Mr. Robert O'Brien Furlong, M.A., C.B., writes :—

The rainfall at Cloneevin, Killiney, for the year 1903, amounted to 32.44 inches on 219 days. This is only .18 inch more than in 1902, when 32.26 inches fell; and the amount has been exceeded in 1900 (35.35 inches), 1895 (32.85 inches), and 1894 (32.64 inches).

The largest amount measured in any month was 3.82 inches on 26 days in October—the smallest was 1.37 inches on 12 days in April.

The greatest number of days on which rain fell in any month was 29 in March—the lowest, 12 in April, and also in June.

The number of days on which rain fell—219—is higher than in any year since these observations began—1885. The highest number heretofore recorded was 205 in 1900.

The heaviest fall in 24 hours was on August 18, when 1.15 inches fell; this was the only day on which one inch or upwards was measured in the year 1903. The average yearly fall during 18 years, 1885–1902, was 28.107 inches on 182.9 days. The rainfall of 1903 was 4.33 inches, and the number of days on which rain fell was 37 in excess of the average

Snow, sleet, or hail was noticed on 12 days.

*Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1903.*

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevailing Winds
January	55.9	26th	25.7	13th	46.3	37.9	3.269	20	29.815	30.544	14th	28.830	7th	S.W.
February	59.0	8th	31.7	28th	52.4	42.5	2.234	15	29.951	30.527	13th	28.550	27th	S.W., W.
March	60.7	22nd	34.1	2nd	51.5	39.6	3.623	26	29.642	30.392	8th	28.600	2nd	S.W., W., S.
April	61.1	6th	29.9	17th	52.3	39.4	1.050	17	29.913	30.504	17th	29.188	29th	N.W., W., N.E.
May	68.0	25th and 28th	40.9	17th	59.2	46.5	2.384	17	29.871	30.147	23rd	29.246	4th	E.N.E., N.E., E.
June	72.7	28th	41.0	14th	62.6	50.2	2.491	13	30.082	30.565	4th	29.728	18th	N.E., N.
July	79.0	9th	44.1	7th	66.7	53.5	4.018	23	29.910	30.345	9th	29.477	16th	W., N.W., S.W.
August	70.9	30th	46.1	21st	64.9	51.8	2.800	26	29.774	30.180	25th	28.837	14th	W., S.W., S.
September	67.2	1st	37.8	15th	62.0	49.9	3.397	17	29.946	30.561	14th	28.781	10th	S., S.S.E., S.E.
October	64.9	6th	33.6	28th	56.8	45.9	2.613	22	29.505	30.121	17th	28.801	12th	W., N.W., S.W.
November	60.0	12th	29.2	30th	50.7	40.0	2.133	15	30.047	30.626	5th	29.144	28th	W., S.W., N.W.
December	55.8	21st	27.1	2nd	44.9	36.8	1.586	16	29.660	30.171	25th	28.810	10th	S.E., S.W., W.
Extremes, Totals, and Means	79.0	July 9th	25.7	Jan. 13th	55.9	44.5	31.601	Days 228	29.926	30.626	Nov. 5th	28.550	Feb. 27th	S.W., W.
					50.20									

JOHN WILLIAM MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;  
F. R. Met. Soc.

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### SKIN LESIONS AFTER ENTERIC FEVER.

W. P. NORTHRUP, M.D., reports (*Medical News*, New York, October 31st, 1903) a case of *lineæ albicantes* occurring in convalescence from enteric fever. Such cases are rare, generally occurring across the knee-joints. Dr. Northrup suggests that they result from the skin not being able to keep up with the rapid growth of the long bones. Cases recorded in Jules Comby's book on Children's Diseases (Paris) are abstracted in this article.

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Process patented.

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Whole milk coagulated with Pegnin serves for the nourishment of healthy and sick children, as well as for older children and adults. Indicated in excessive acidity of the stomach. Whole milk coagulated with Pegnin induces a rapid gain in weight and general improvement of the bodily strength.

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## An Memoriam.

CHARLES FREDERICK MOORE, M.D. (UNIV. GLASG.),  
F.R.C.S.I.

WE cull from the *British Medical Journal*, January 2nd, 1904, the following memoir of DR. CHARLES F. MOORE :—

“ The death of this highly-esteemed member of the medical profession took place, after a very brief illness, at an early hour on the morning of Christmas Day, at his residence, 10 Upper Merrion-street, Dublin. Although DR. MOORE had reached the advanced age of eighty-three years he was brisk and active to a remarkable degree, and may be said to have died in harness, for so recently as the Monday before his death he spent several hours in the discharge of his duties as Certifying Factory Surgeon for the Dublin district.

“ A scion of a medical family, CHARLES MOORE at an early age chose medicine as his calling. He became a Licentiate of the Apothecaries' Hall, Dublin, in 1843, a Licentiate of the Royal College of Surgeons in Ireland in 1844, and a Doctor of Medicine of the University of Glasgow in the same year. In 1865 he obtained the Fellowship of the Royal College of Surgeons, Ireland, by examination.

“ Soon after he became qualified, CHARLES MOORE entered the service of the Peninsular and Oriental Steam Navigation Company, in which he was in due time promoted to be Senior Surgeon. During his many voyages to the Far East he gained a sound knowledge of tropical and sub-tropical diseases, which he was in after life able to turn to practical account in the interest of the public. He was an artist of no mean power, and in the fifties often enriched the pages of the *Illustrated London News* by the work of his pencil.

“ After he retired from the Company's service, DR. MOORE practised for a short time in London, but soon returned to Ireland. At first he settled in the country, being finally appointed Medical Superintendent and Surgeon to Middletown Hospital, Co. Armagh. From this he removed to Dublin, where his life-work was mainly cast. For many years he acted as Medical Officer of one of the metropolitan dispensary districts, becoming a Medical Officer of Health under the Public Health Acts of 1875 and 1878. He was also for several years one of the Visiting Physicians of Cork-street Fever Hospital and House of Recovery. In more recent years he filled the important posts of Medical Inspector of Seamen for the Port of Dublin and Certifying Factory

## In Memoriam.

Surgeon for the metropolitan district. For some years Dr. Moore represented the Apothecaries' Hall of Dublin on the General Medical Council. He was also in course of time chosen President of the State Medicine Section in the Royal Academy of Medicine in Ireland, President of the Dublin Sanitary Association, and a Vice-President of the British Association of Certifying Factory Surgeons—a conclusive proof of the estimation in which he was held by the public, as well as by his professional brethren.

“DR. MOORE wrote frequently, but published no large work. He was author of ‘Suggestions for Improvements in the Sewerage of Cities and Towns’ (1854), and contributed to the *Dublin Journal of Medical Science* a ‘Report of Cholera as observed in 1854 in the Finglas Cholera Hospital,’ to which he was physician, as well as reports of cases observed in the East Indies, Mediterranean, Egypt, and Turkey. He also published occasional clinical records in the weekly medical journals.

“As to his private life, the *Dublin Daily Express* says: ‘DR. MOORE was a kindly, courteous gentleman, of retiring habits, and a keenly sensitive and refined disposition. He never willingly did an injury to any one, and his death will be deplored by a host of friends who valued him for his sterling qualities of heart and mind. The fact that he passed away on Christmas Day adds a special touch of pathos to the sorrow with which the announcement has been received by all who knew CHARLES FREDERICK MOORE, and held him as a true and faithful friend.’”

At a meeting of the Council of the Dublin Sanitary Association, held on Thursday, January 7, 1904, the President Mr. George Roberts Price, K.C., in the chair, the following Resolution was unanimously adopted:—“Resolved: That at this, the first meeting of the Council since the lamented death of DR. CHARLES FREDERICK MOORE, the Council hereby give expression to the very deep regret felt by them for the loss of so highly-valued a colleague. Dr. MOORE was one of the principal founders of the Association, and for many years took an active part in the transaction of its business, and recently filled the office of President. His intimate knowledge of the subject, his excellent business capacity, amiable disposition, and conciliatory manner, conduced to his rendering valuable service to the cause of Sanitary Science. The Council deeply sympathise with DR. MOORE'S bereaved family.”



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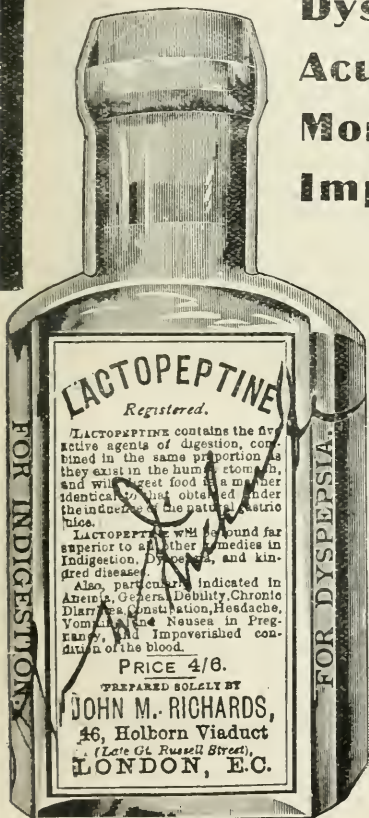
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