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# The AntiSeptic

Vol. 1.

No. 1

May-Dec.

©104

JL  
Lm 211, v4  
No 4.1  
161.501

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The Anti-Septic

*N. S. S. S.*  
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கையொப்பம் கையொப்பம்



LORD LISTER.

# The Anti-Septic.

Vol. I.]

MAY 1, 1904.

[No. 1.

## Lord Lister.

WE call ourselves 'the Anti-septic' after the great and epoch making discovery which has revolutionized scientific medicine and surgery. And we consider that the discoverer of "Anti-septic Surgery" Lord Lister to be the greatest benefactor of the human race now living. We cannot make a better beginning than by giving a short biographical sketch of Lord Lister whose glorious life will, for all time, be an ideal for every medical man to cherish. It is not possible for every man to rise to his eminence. But every one may emulate his ideal and profit by his example. "The Mariner is often guided by the pole star though he never hopes to become possessor of it."

We are indebted to the British Medical Journal (which brought out a Special Lister jubilee number in 1902) for the following facts regarding Lord Lister.

JOSEPH LISTER was born in April 5th 1827, at Upton, Essex. His father was Joseph Jackson Lister and his mother Isabella, daughter of Anthony

Harris of Maryport Cumberland. Both belonged to the Society of Friends. The marriage took place in 1818. Mrs. Lister died in 1864 and Mr. Lister five years later. Joseph Lister received his early education at a school kept by the members of the Society of Friends at Tottenham. And among his school-fellows were the late Mr. W. E. Forster and Dr. Wilson Fox. He proceeded subsequently to University College and graduated B. A. in the University of London in 1847 at the early age of 20. He then spent 5 years in the study of Medicine in the Medical Faculty of the University College and at the University College Hospital. During the early part of this period he seems to have been especially influenced by Graham, the professor of Chemistry, and Sharpey, the professor of Physiology. Mr. Lister's first investigation was directed to the verification of the existence in the iris of tissue identical with ordinary unstriated muscle and to its distribution. This paper was published in the Quarterly Journal of Science for 1853.

same volume

"Observations on the muscular tissue of the skin" is described as by Joseph Lister, M.B. (Lond.) F.R.C.S. and is dated University College Hospital June 1853. Mr. Lister served the usual office in the Hospital; he was dresser to Mr. (afterwards Sir) J. E. Erichsen and the house surgeon under whom he served was afterwards Sir Henry Thompson whose death last month was mourned by the whole of the Medical and scientific world—He himself was afterwards house surgeon to Mr. Erichsen, and at the end of his period of office in that capacity determined to visit Edinburgh in order to carry out the advice of Professor Sharpey to take six weeks of Syme's clinic. The six weeks however grew into years. At Edinburgh Mr. Lister commenced a course of lectures upon systematic surgery in the Extra Mural School; and among his earliest students was Professor Anandale, the present Professor of Clinical Surgery at Edinburgh. At this time Mr. Lister was carrying on his important investigations in regard to the coagulation of the blood. Before leaving for Glasgow in 1860 Mr. Lister had commenced his bacteriological work in connection with antiseptics. But at this time its practical details were still in their infancy. It may be mentioned that Mr. Lister married Mr. Syme's daughter. At Glasgow Mr. Lister took up his duties as Professor of Surgery in the University of Glasgow in the summer session of 1860. In the following year he was appointed Surgeon to the Royal Infirmary of Glasgow. Before coming to Glasgow he had already commenced his researches into the essential causes of suppuration.

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in wounds was the decomposition of blood and serum retained within them brought about in some way by the influence of the atmosphere. In the wards he insisted on scrupulous cleanliness; on the frequent washing of the hands of all those assisting at operations or engaged in dressing wounds, while he used constantly various deodorant lotions and recommended frequent changing of dressings in all suppurating wounds. While engaged in these observations, and in such strenuous and constant endeavours to improve the existing state of matters, the newly published researches of the French Chemist Pasteur on Fermentation and Putrefaction came under Lister's notice. Possessed strongly as he was of the scientific imagination, he seems to have recognised at once the all important bearing which the result of those researches, if true, must have on the questions which had been occupying his own attention so long. In one of the earliest communications made by him on the subject—an address given at the Dublin Meeting of the British Medical Association in August, 1867, these were his opening words.

"In the course of an extended investigation into the nature of inflammation and the healthy and morbid conditions of the blood in relation to it, I arrived several years ago at the conclusion that the essential cause of suppuration in wounds is decomposition brought about by the atmosphere upon blood or serum retained within them; and in the case of contused wounds, upon portions of tissue destroyed by the violence of the injury. To prevent the occurrence of suppuration and all its attendant risks was an object highly desirable but till lately apparently unattainable since it seemed

hopeless to exclude the oxygen which was universally regarded as the agent by which putrefaction was effected. But when it had been shown by researches of Pasteur that the septic properties of the atmosphere depended not on oxygen or any gaseous constituent but on minute organisms suspended in it, which owed their energy to their vitality, it occurred to me that decomposition in the injured part might be avoided without excluding the air by applying as a dressing some material capable of destroying the life of the floating particles."

The material he was led to try was carbolic acid, a substance little known at that time. This was the beginning of the antiseptic system of treatment. In 1867, after he had been 7 years a surgeon to the Glasgow Royal Infirmary, he published his first paper on antiseptic surgery entitled, on a new method of treating compound fractures, abscesses &c. with observations on the conditions of suppuration. We need not dwell in detail on the antiseptic system of treatment as advocated by Lord Lister. By this time they are well-known. In 1869 Lister was appointed Professor of Clinical Surgery in the University of Edinburgh. In 1871, he delivered the address on Surgery at the Plymouth Meeting of the British Medical Association. At that time his doctrines were not in general favour. His opponents used to scoffingly say that Lister's solutions were becoming weaker, while his arguments were becoming stronger. But before Mr. Lister left Edinburgh in 1877 the profession had in the main accepted his doctrines and had attempted to follow out his practice.

When Lord Lister went to London, he was still using carbolic acid and carbolized

gauze. At a later period when corrosive sublimate was demonstrated to be a good antiseptic he experimented very largely on its uses in surgery and introduced a variety of gauzes, wools, &c. impregnated with various preparations of Mercury. He also steadily diminished the introduction of antiseptics into the wounds themselves and from time to time weak solutions of corrosive sublimate were introduced. He ceased to bring carbolic acid in contact with wounds, reserving it for the disinfection of the instruments and skin.

He was elected a fellow of the Royal Society in 1860 at the early age of 33. He delivered the Croonian lecture on the coagulation of the blood in 1863. He received the Royal Medal in 1880 and Copley Medal in 1902. In 1895 he was elected president of the Royal Society. He was president of the British Association in 1896. The University of Edinburgh conferred on him the honorary degree of LL.D. in 1878, the University of Dublin that of M.D. and the University of Glasgow that of LL.D. in 1879. In 1880 he received the honorary degrees of D.C.L. from the University of Oxford and LL.D. from the University of Cambridge. In 1897 he received the honorary degree of LL.D. from the Universities of Toronto and Montreal. He is an honorary fellow of the Royal College of Surgeons of Ireland and of the Faculty of Physicians and Surgeons of Glasgow. In 1893 he retired from active work at King's College, London and was appointed Emeritus Professor of Clinical Surgery and consulting Surgeon to the King's College Hospitals. He is a foreign associate of the Institute de France and Academie de Medicine (1899) and a Laureate of the French Academy of



Science also (1881). He is an Honorary Member of the American Academy of Arts and Sciences, of the German Surgical Society and of the Medical Societies of Amsterdam, Buda-Pesth, Dresden, Finland, Leipzig, Munich, and St. Petersburg and of the Imperial Academy of Sciences, Vienna. He has also received the Cothenius Medal of the Imperial Leopold Academy of Natural Sciences, and the Honorary degree of M. D. from the Universities of Bologna, Buda-Pesth and Winsburg.

While Regius Professor of Clinical Surgery in Edinburgh he was appointed Surgeon to the Queen in Scotland, and after his removal to London, Surgeon Extraordinary. In 1900, he was appointed Sergeant Surgeon in ordinary to Queen Victoria, and a couple of years ago was nominated to the same office to His Majesty King Edward VII. He was gazetted a Baronet in 1883, and in 1897, was made a Peer with the title of Baron Lister. On the occasion of the Coronation in 1902 his name appeared in the first list of members of the Order of Merit, and he was sworn a Member of the Privy Council. He is also a Knight of the Prussian Order. "Pomle-Merite," and a Knight Commander of the First class of the Order of the Daneburg (Denmark).



## Original Articles.

### Cases of Empyema of the maxillary antrum.

#### 3 Cardinal tests, And their relative value.

CHRONIC Empyemas of the antrum of Highmore are fairly common, but their diagnosis is a matter of some difficulty. In acute cases symptoms such as acute pain, tenderness over the antral region, bulging of the antral walls, rise of temperature and rigors are well marked and the condition is easily diagnosed. But in cases of Chronic Empyemas it is quite different. As Leinnox Browne points out "the ordinary symptoms usually described in text-books such as dull aching pains in the cheek, with heat, redness, and fulness of the soft parts externally, even to expansion of the whole jaw, are chiefly conspicuous by their absence." The only symptom that you very often observe is a discharge from the nose. The discharge is usually of a yellow colour of a fluid consistence, and usually with an offensive foetid smell. And unlike in cases of atrophic rhinites the patient can smell the discharge himself. Usually the discharge is unilateral, and this is the symptom that first attracts the attention of the rhinologist. But it is well to bear in mind that there is an appreciable percentage of Empyemas of both antra. And also that in a small percentage of cases where, although only one antrum is affected, there is discharge from both nostrils. According to Dr. McBride, such cases are explained by the fact that the discharge from one nostril gets into the other through the

posterior nares. Now, in a case of discharge from the nose, how are you to ascertain that it proceeds from the antrum of Highmore. Of course the first step to be taken is a careful rhinoscopic examination after which you can exclude the presence of ulcers, foreign bodies, rhinoliths, caries, and atrophic rhinitis. After excluding these you proceed to apply three tests which I shall describe in detail. The first is called Frankel's test.

B. Frankel pointed out that in a case of suppuration in the antrum, when you find the middle meatus full of pus, if you carefully wipe out all the pus that is present, and then make the patient sit on a chair and hang his head down at the same time holding the head tilted to one side so that the affected antrum is uppermost, then you have the discharge re-appearing in the hiatus semi-lunaris or the middle meatus. This I believe to be a very important and a very useful test. Dr. Greville McDonald lays so much stress on this symptom that he says:—"Whenever in fact we perceive an opaque canary coloured purulent discharge, which must be carefully distinguished from the transparent muco pus of simple Rhinitis, lying in the concavity of the middle turbinated body, which discharge after being wiped away is immediately reproduced, we need have no hesitation in opening the antrum with the strongest possibility of evacuating pus." The object of placing the patient in that position is to place the suspected antrum in the most favourable position to drain its contents into the middle meatus. This is very often done unconsciously by the patient himself by lying on the sound side at night, and it is a well-known fact that patients suffering from empyema of the antrum give a history of increased discharge from the nose in the morning. But

unfortunately in this position very often the ethmoidal sinus and *even the frontal sinus* discharge their contents into the middle meatus. I have not seen a frontal sinus discharging in this position, but there is no doubt it would do so if it contained fluid and if its opening was patent. That being the case all that I can say for Frankel's symptom is that, when it is present, you may suspect either antral, ethmoidal, or frontal sinus troubles. If the pus is present in large quantities then the chances are that it is not from the ethmoidal cells. That leaves upon us the necessity of proceeding to the next step in diagnosing antral empyema.

But before leaving Frankel's symptom let me say that there are instances where on placing the head in what for brevity I may call Frankel's position, the pus has run down the inferior meatus instead of the middle meatus. It is difficult to explain why this should have happened. But Mr. Cresswell Baber told me that he had seen this occur and that he thought the pus ran over the middle turbinated body. I shall return to Frankel's symptom again in connection with puncture of the antrum.

Dr. M'Bride says that there are cases where Frankel's symptom is absent and yet there was suppuration in the antrum. I have never seen a case like that. But they are probably cases where the ostium is occluded. Where Frankel's symptom has left us in a state of suspicion between antral and ethmoidal affection and to a certain extent of frontal affection as well, we may have recourse to transillumination of the antra. This valuable aid in the diagnosis of antral trouble was first introduced by Voltolini and consists in placing a small electric lamp inside the

mouth of the patient, and, on the patient closing his lips and darkening the room, noticing the amount of light transmitted through the infra orbital regions. Where you cannot get a perfectly dark room, we may throw a dark cloth over the patient, and the observer like what the photographer does over his head and the camera. This certainly has the advantage in that it does not disturb the other occupants of the room every time you want to transilluminate a patient.

And in order to examine all the more accurately whether the infra orbital region is dark or light, Dr. M'Bride suggests a black tube through which he looks on the infra orbital region. This I should think will be an excellent arrangement, though I have never used one nor seen one used. Armed with these appliances we proceed to transilluminate the antra of our patient. In a case where the antra are perfectly healthy, we expect the infra orbital region to light up well, and in a case where the antra are diseased, we expect them to be dark. This in a large number of cases does occur, but unfortunately in great many other cases, the result of transillumination is not very reliable. There are two ways in which transillumination is stated to be misleading, (1) it is stated that sometimes antra which contain pus light up well on transillumination, (2) that antra which do not contain pus do not light up at all.

The first of these two contentions, namely, that antra that contain pus light up well sometimes is made on the strength of two cases reported by Lichtwitz and Srebny. An attempt has been made by Davidsohn to explain this phenomenon by assuming that the antral cavity above the pus was illuminated by rays of

light deflected (?) from the turbinated bodies and an irregular nasal septum. Although I have no explanation of mine to give, I have great difficulty in accepting that explanation. But with the exception of the two cases above alluded to, I have never read of any case where the antra containing pus lighted up. I have never seen myself an antrum with pus in it light up. Mr. Cresswell Baber, who has lighted up a large number of antra, says that he has never seen one yet that lighted up and yet had pus inside, and that seems to be the opinion of a great many Rhinologists. Dr. Dundas Grant says that if on transillumination the antra light up, then we may safely exclude empyema of the antrum. I am inclined to agree with that view. But if transillumination is of value in excluding suppuration in the antrum, how far does it help you in diagnosing the presence of pus? Not very far I am afraid. Because, as I stated above, a large number of antra do not light up and yet contain no pus. Several explanations have been given to account for this. Unusual thickening of bones and asymmetry of the antra are the causes given by Lennox Browne. Dr. Scans Spicer who gives the same causes and says "bilaterally symmetrical opacity of cheek tissue and nonillumination of pupils do not indicate double antral empyema, nor do they exclude empyema of one or both antra. In a large number of healthy subjects such opacity is found." I myself believe that the failure of antra to light up is due to thickening or opacity of the lining membrane of the antrum. I believe that even in cases of simple catarrh without any suppuration whatever, you get the infra orbitals dark to transillumination.

I lighted up the antra of 20 patients who had no symptoms of antral suppuration at all, and I found that in 14 cases both infra orbitals were dark, in 1 slightly so, and in 5 cases the infra orbitals lighted up well. In the case of the 5 patients whose antra lighted up well and the one whose infra orbitals were moderately dark, there were no nasal symptoms at all. But in the 14 cases where the antra remained dark, there was nasal catarrh in 8 cases, polypi in 3 cases, and enlargement of the turbinated bodies in 3 with history of previous nasal catarrh. These facts suggested to me the idea that there may have been more or less catarrh of the lining membrane of the antrum as a result of which a thickening or opacity might have been left which prevented the antra from lighting up. Moreover, it is well known that in a case of empyema of the antrum, after thoroughly emptying the cavity of the contained pus and washing it out, if you light it up, the infra orbital remains dark. This can only be explained on the supposition that it is the thickening and opacity of the lining membrane that is the cause of the antra not lighting up. If asymmetry in the sense of difference in size as stated by Lennox Browne of the antra had anything to do with it, then I should think there will be a difference in the area that is lighted up, but I can't see how asymmetry can make any difference in the intensity of the light that is transmitted through the antral walls. But however, I must confess that dark antra on transillumination do not necessarily indicate empyema. But I think that if the antrum lights up well, it goes a very long way towards proving that there is no empyema there. This negative evidence is of the utmost value, because in a great many

cases where we are pretty certain that there is sinus trouble, but unable to diagnose it, it will be a great step if we can exclude antrum suppuration.

The most conclusive evidence of the presence of pus in the antrum is to see it, and hence the most reliable diagnostic aid at our disposal is puncture of the antrum. This can be done through the middle meatus, through the inferior meatus, or through the socket of a molar tooth.

Bresgen suggested the puncture of the antrum in the region of the hiatus semilunaris. This I think adds unnecessarily to the risks of the operation. Puncture from the middle meatus has the disadvantage that it may more likely penetrate the floor of the orbit, while it has no advantage whatever over puncture through the inferior meatus. The puncture through the socket of the molar tooth, which was introduced by Ziem, has also its drawbacks. "Sometimes you may have to sacrifice a sound tooth with the possibility of finding one's self mistaken." Then there is a greater thickness of bone to be drilled through in this position than in the inferior meatus. But it has certainly the advantage in one respect that if pus is detected in the antrum, a second operation is avoided. But on the whole the puncture through the inferior meatus is to be preferred. This was introduced by Moritz Schmidt, and here is a description of the operation in his own words:—"I commence by inserting a small plug of cotton wool into the inferior meatus of the nose under the anterior portion of the lower turbinated bone. I saturate it with 20 p. c. of cocaine solution and allow it to remain there for ten minutes. I then raise the

anterior portion of the meatus with a hypodermic syringe which I push inwards in an oblique direction somewhat towards the outer meatus of the ear. If I do not succeed in getting it in at one spot, I try another a little above or further back."

I have done this several times. I use a straight trocar and cannula and not a curved one as used by Moritz Schmidt. I have never once had the exploratory needle fail to enter into the antrum in this way. But after entering the antrum mere aspiration as practised by Schmidt with a hypodermic syringe sometimes proved unsuccessful. And therefore after aspiration, air is blown into the antrum through the cannula by means of an India rubber ball with a vulcanite nozzle which fits into the cannula. This method was first recommended by Grunwald. In two cases that I punctured the antrum through the inferior meatus, no pus was detected on aspiration with the hypodermic needle, but on blowing air into the antrum pus was blown out through the ostium maxillare into the nasal cavity and a bubbling sound was heard in the antrum. I have never seen any bad results follow from these punctures. But safe and reliable as it is there is a source of fallacy even in this.

Supposing at the moment of puncture there was no pus in the antrum, all of it having run out, are you to suppose that there was no empyema present. Therein lies the slight possibility of a mistake. Go avoid this Grunwald suggests repeated punctures, or what is rather an ingenious suggestion, the plugging of the ostium maxillare for some hours before puncture.

I may here mention that passing a probe through the natural opening has

also been suggested. Hansberg passes a bougie through the ostium maxillare and injects a solution of peroxide of hydrogen into the antrum, and it is stated that if pus is present the middle meatus and the nasal cavity in general becomes filled with a white froth. I do not think the practice is one that is at all safe to follow. In the first place it is not always a very easy thing to get a bougie into the antrum through the ostium maxillare, and secondly the introduction of any substances like peroxide of hydrogen into the antrum for diagnostic purposes ought to be deprecated.

Before I leave this part of the subject I may briefly sum up several empyemas and suspected empyemas of the antrum. In none of the cases of empyemas of the antrum did the infra orbital light upon transillumination. Then every case in which Frankel's symptom was present, disease of the antrum or Ethmoid or frontal sinus was afterwards detected. There were no cases of antral empyemas in which Frankel's symptom was absent. And there were no bad results following on diagnostic puncture through the inferior meatus. Therefore I will draw the following conclusions from the cases I have seen.

(1) Transillumination is a valuable aid in excluding suppuration of the antrum.

(2) That Frankel's symptom is a very valuable aid in diagnosing suppuration of the sinuses. And when you have once got that symptom the best means of differential diagnosis is to explore one after the other the antrum and the ethmoidal cells and then get to disease of frontal sinus by a process of exclusion.

(3) The diagnostic puncture of the antrum through the inferior meatus is a safe and reliable procedure and is undoubtedly the best means as yet at our disposal for the correct diagnosis of antral empyemas.

The following cases of empyemas of the antrum which came under my observation will illustrate my remarks. I give the results in a tabular form.

| Name & age. | Discharge.    | Transillumination. |       | Frankel's Symptom. | Puncture.              | Result and remarks.  |
|-------------|---------------|--------------------|-------|--------------------|------------------------|----------------------|
|             |               | Right              | Left  |                    |                        |                      |
| C. H. 25    | Both nostrils | Dark               | Dark  | Present both sides | Both antra punctured   | Pus detected in both |
| K. M. 35    | Left side     | Light              | Dark  | Present left side  | Left antrum punctured  | Pus present          |
| B. P. 54    | Left side     | Light              | Dark  | Present left side  | Left antrum punctured  | Pus present          |
| L. T. 17    | Right side    | Dark               | Light | Present right side | Right antrum punctured | Pus present          |
| J. H. 41    | Right side    | Dark               | Light | Present right side | Right antrum punctured | Pus present          |
| E. W. 24    | Both sides    | Dark               | Dark  | Present both sides | Both antra punctured   | Pus present in both  |
| J. P. 44    | Left side     | Light              | Dark  | Present left side  | Left antrum punctured  | Pus present          |

In the next three cases although the infra orbital was dark on transillumination and although Frankel's symptom was present the result of the puncture through the inferior meatus was negative. But in these cases suppuration in other sinuses was present.

| Name & age. | Discharge. | Transillumination. |      | Frankel's Symptom.       | Puncture.              | Result and remarks.                                                              |
|-------------|------------|--------------------|------|--------------------------|------------------------|----------------------------------------------------------------------------------|
|             |            | Right              | Left |                          |                        |                                                                                  |
| P. S. 32    | Both sides | Dark               | Dark | Present                  | Both antra punctured   | No pus detected. This was afterwards found to be disease of the ethmoidal sinus. |
| M. B. 52    | Left side  | Light              | Dark | Present on the left side | Left antrum punctured. | No pus detected. Afterwards found to be disease of the frontal sinus.            |
| L. N. 19    | Left side  | Light              | Dark | Present left side        | Left antrum punctured  | No pus detected. Afterwards found to be disease of the ethmoidal sinus.          |

T. M. N.

## Cases and Comments.

### Physostigmine in the Treatment of Intestinal Atony.

BY

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Asst. to the Chemical Examiner, Madras.

INTESTINAL atony resulting after diarrhoea brought on from neglect of hygienic principles in the feeding of children with cow's milk, is of common occurrence among Indian children. It often shows itself in a form of constipation with flatulence of the intestines which makes the child scream with pain and writhe in agony. Carminatives and laxatives do but temporarily relieve the condition which very often recurs after every feeding.

A case of a very painful nature happened in a child only two months old brought upon cow's milk. It baffled all efforts to alleviate its sufferings with hot fomentations, turpentine stupes and by the use of ordinary carminative drugs including asafoetida and small doses of opium very cautiously administered. For two days the child was in agony relieved only temporarily by small doses of opium, and the moment its influence was over it used to startle every one with its painful screams. The opium could not be pushed owing to the severe constipation which followed its use and which was only relieved by the use of frequent laxatives, which weakened the child very considerably. I then decided to try the effect of physostigmine, although I had not previously used it in similar cases. I administered it in doses of 1-150ths grain of Eserine sulphate in solution, but the result was striking and

almost seemed wonderful. Before two doses were given, at intervals of two hours, the bloated condition of the child's abdomen diminished the child had a refreshing sleep after passing a natural motion. Only one more dose was repeated the next morning and the child has been well ever since. It is now seven months old. The diet of the child was altered by the substitution of Nestle's Milk food for cow's milk, and this was done when the diarrhoea preceded this atonic condition of the bowels.

One swallow does not make a summer, but it presages its near advent. Although I have tried this drug in only one case, its results gave me great encouragement especially when the effects were so striking and permanent. The case is given here to elicit information from my brother practitioners about their experience of this rarely used drug in their practice and to bring to the notice of such as have not used it, its usefulness in the painful condition mentioned above.

Thinking that a few extracts on the use of this drug from my note book may be of some use to others, I make no apology for giving the same with the hope that others may try this drug and report on its therapeutic value.

"As a result of experiments upon animals, Curlo, of Genoa, concludes (*La Reforma Medica*, Sep. 16, 1903) that physostigmine exerts a stimulating effect upon the muscular fibres of the intestine, thereby augmenting peristalsis. He finds that the nearer the drug is brought into direct contact with the intestinal mucus the greater is the degree of peristalsis produced. Thus, even the smallest quantities introduced into the bowel through an abdominal incision cause marked

peristalsis, and doses as low as one milligramme injected into the rectum give rise to considerable intestinal contraction whereas when the drug is employed hypodermically, eight milligrammes is required to produce even eight contractions. Curlo has used the drug therapeutically as well as experimentally, and he states that it is particularly useful in the treatment of constipation depending upon intestinal atony and in meteorism. He considers the salicylate of physostigmine to be the best preparation for general use, the ordinary daily dose being from two to three milligrammes (1-30 to 1-20 grain), given in keratin-coated pills, which are not dissolved until they reach the intestines. For rapidly overcoming meteorism, however, one to three milligrammes may be dissolved in water and injected into the bowel. Suppositories containing two or three milligrammes of the drug have also been employed with good effects. Contraindications to the use of physostigmine are constipation due to spasm of the bowel, acute and chronic intestinal catarrh, and enterocolities.

### THERAPEUTIC GAZETTE Vol. XX.

No. 2 of February, 1904.

A note in the New York Medical Journal of July 11, 1903, states:—

"Mbszkowiez reports 5 cases of very severe meteorism following operation, which were relieved by the hypodermic injection of Physostigmine Salicylate in doses of 1-70th of a grain. In one case it had the effect of a stimulant like camphor. The drug was well borne even in the case of two patients, who were much weakened. In two of the cases, the effect of the injections seemed to save life. In all the cases, the blood

pressure was raised, and no injurious effect on other organs was noted. The use of Physostigmine is especially recommended in cases of Post operative paresis of the intestines the so called Pseudo-Ileus."

### Sixty-nine cases, Illustrating the Action of Supra Renal extract as a Haemostatic.

Within the last 18 months I have used various preparations of supra-renal extract extensively, and have had ample opportunities of studying its effects as a Haemostatic and vaso-constrictor agent. The names under which and the forms in which this drug is manufactured and sold are enough to puzzle any one. I have heard it called, Hemisine, Takamine, Renaglandin, Adrenalin, Suprenal Haemostat and many others. But we are not concerned with the ingenuity displayed in coining new names. Our concern is with the action of the drug itself. Supra-renal extract under any other name will act as powerfully.

### Adrenalin in 17 cases of Tonsillotomies.

The first time I used adrenalin was in a Tonsillotomy in a patient about 35 years old. My personal experience of over one hundred Tonsillotomies has been that there is as a rule free Hemorrhage following these operations. In cases where Tonsils are removed from adults there is invariably a very free hemorrhage. Bosworth in his work on diseases of the nose and throat says—"If the tonsil is one of any magnitude, its excision is an operation which is exceedingly liable to be followed by troublesome hemorrhage in probably the larger proportion of cases in adult life."

Indeed, as the result of former experiences, I never undertake an operation in adult life without apprehension and without being prepared for emergencies." That has exactly been my experience too. I was therefore very glad to try the effect of adrenalin in a Tonsillotomy in an adult. The result was quite satisfactory. I removed both tonsils in that patient after free application of the Liq. Suprenal Haemostat (Squire) and there was practically no hemorrhage at all. Thus encouraged I tried adrenalin in a number of tonsillotomies. In 3 cases where I applied adrenalin and removed the tonsils under chloroform there was no appreciable diminution in the amount of blood lost. I have now come to the conclusion that in patients who are under chloroform anaesthesia we do not get the full hemostatic action of adrenalin and therefore I have given up its use in chloroform cases. As most of the tonsillotomies are in children and as children don't submit to tonsillotomies without chloroform the use of adrenalin in this class of cases becomes very much restricted. But as the fear of hemorrhage is mostly in adult tonsillotomies and as we can dispense with chloroform in those cases the use of adrenalin becomes a very useful help in operations on adult tonsils. I have now used adrenalin in 14 cases of tonsillotomies in adults in all of them with excellent results. In all these 14 cases I performed the operation without the use of chloroform and there was in no case any hemorrhage worth speaking of. The 3 cases in which I used adrenalin in patients under chloroform were all children.

#### **In 32 Cases of Anterior Turbinotomies.**

The next class of cases in which I used adrenalin was in turbinate hypertrophies.

This was a class of cases in which also from previous personal experience I had found hemorrhage a troublesome consequence of operation. I have now removed the anterior portion of the inferior turbinate body in 32 cases after the use of adrenalin. I freely apply a solution of adrenalin chloride (Parke Davis & Co.) to the turbinate bodies and remove them with a cold snare. After removal I plug the nostrils with cotton wool plugs soaked in the same solution. Except in 3 cases there was no hemorrhage worth speaking of, and even in those 3 cases the bleeding was considerably less than what I was accustomed to see in such cases. Anterior turbinotomy is one of the commonest of rhinological operations and it is in these cases, perhaps, that adrenalin finds its best application.

#### **In 2 Cases of Removal of the Spur on Nasal Septum.**

I used adrenalin in 2 cases in which I removed spurs on the nasal septum. Even moderate hemorrhage in these cases is very troublesome as it prevents you from seeing what you are doing. But by constant wiping of the parts with adrenalin cotton plugs bleeding was kept absolutely in check and I was able to saw through the bony spurs most easily and comfortably.

#### **In 6 Cases of Mucous Polypi.**

In six cases of mucous polypi of the nose which I removed with Baber's snare I also tried the use of adrenalin. In all 6 cases there was moderate hemorrhage. In this class of cases adrenalin has not been the success that I expected it to be. However I shall try it in some more cases before I give up its use in cases of mucous polypi of the nose.

#### **In 1 Case of Fibrous Polypus of the Nose.**

In the only case of fibrous polypus of the nose in which I tried adrenalin it was an absolute disappointment. This was a large polypus with a very broad triangular attachment. I expected hemorrhage after its removal but mainly relied on adrenalin to stop it. After a very free application of adrenalin solution I removed the polypus with Baber's snare. There was a very profuse hemorrhage following the removal. I plugged the nostril time after time with cotton wool plugs soaked in adrenalin solution but it did not make the slightest impression on the bleeding. Then I gave up adrenalin and plugged the nose with Cooper's Epistaxis plug and kept it in there for six hours. This had the desired effect of stopping the hemorrhage but even after the removal of the epistaxis plug there was oozing from the nose for 24 hours which adrenalin plugs entirely failed to stop. Whether this is an exceptional case, or the patient is a bleeder or adrenalin has no effect in cases of fibrous polypi I am not able to say definitely.

#### **In 4 cases of Hay Asthma.**

It is in cases of Hay fever and Hay asthma that adrenalin is reputed to be so serviceable. I have tried its effects in four cases of Hay asthma. There is no denying the immediate effect of adrenalin on the nasal symptoms in Hay fever. The paroxysmal sneezing, the swelling of the turbinates and the watery discharge are all immediately relieved. But a few hours after the effect of the drug has disappeared the troublesome symptoms come back again. From my experience in these four cases I come to the conclusion that however much adrenalin may relieve symptoms of Hay fever it will not cure

that disease. For that perhaps we may have to wait for Sir Felix Semon's Serum. Internal administration of supra renal extract is recommended in Hay fever. I have never tried it.

#### **In 5 cases of Uvulotomies.**

I have tried adrenalin in five cases of Uvulotomies and there were no hemorrhage after any of them. But then I have never seen troublesome hemorrhage after uvulotomy although I have performed the operation now over 80 times.

#### **In 2 Cases of Epistaxis.**

I have only had occasions to try adrenalin in two cases of Epistaxis, *i. e.*, in cases of hemorrhage from the nose with no apparent cause. In one case I have not been able to trace the after-history of the patient. In the other case the epistaxis has entirely stopped. But whether it was from the use of the adrenalin or from the use of the galvano-cautery to the nasal septum (which I did in this case) that the troublesome symptom was stopped I am not in a position to say. In conclusion I have no doubt whatever about the powerful hemostatic action of the drug. But whether it will fulfill all the wonderful expectations that some of its manufacturers have formed about it is a question for the future to decide. At present its high price certainly prevents it from being more extensively used in Hospital practice and in poor class private practice.

T. M. N.



### Hydronaphthal in the Treatment of Tenia Tonsurans.

By U. RAMA RAO.

Medical Practitioner.

A Brahmin boy G., aged about 15 years, came to me with a number of round patches of ringworm covered with minute branny scales all over his head. The boy was very weak, and he could get no sleep during nights on account of scratching. I tried the following remedies with no benefit; Oleate of Mercury, Citrine Ointment, Strong Acetic acid, Salicylic acid Ointment, Iodine paint Ointment of the Iodide of Sulphur. So while I was searching for better remedies I found in the *Lancet* of 30th November 1889 that Hydronaphthal was strongly recommended. I tried it in my case and found very successful. Before I trace my treatment it is well to remind the readers that Hydronaphthal is a secondary compound of Betanaphthal. It has a slight aromatic taste, is almost odourless, sparingly soluble in water, but easily dissolved in Alcohol, Ether, Chloroform and Glycerine, it is non-poisonous, non-irritant and non-corrosive. In its anti-septic power Hydronaphthal stands much higher than Betanaphthal and is said to be 14 times more potent as an anti-septic than Carbolic acid and 30 times as potent as Salicylic acid. When dissolved in ordinary water it is not much more than half as powerful as Corrosive sublimate in its anti-septic power. Further, as it is non-poisonous a saturated watery solution of 1 in 100 may be freely made use of. It is said to be reliably antiseptic in the strength of 1 in 2,500 to 1 in 7,000, and further it is said that a solution 1 in 10,000 will arrest putrifactive decomposition.

### Treatment of Tenia Tonsurans.

—The method of treatment I have found successful is as follows:—I got the head completely shaved, then washed it with 5 per cent. soap of Hydronaphthal, using water as hot as can be borne. After drying the scalp applied over the affected area 10% plaster of Hydronaphthal in narrow strips, letting each strip overlap its fellow and extending the plaster quite half an inch beyond the margin of the diseased patch. Outside the margin of the plaster I painted a layer of 10% Hydronaphthal Jelly (when melted) so as to exclude all air. The plasters help in starving the fungus of oxygen. At the end of four days the plaster was removed. After cleaning it I applied the plaster again using 20% plaster and kept it for 10 days more, at the end of these 10 days the disease was completely cured.

Care should be taken that all articles brought in contact with the head before treatment be destroyed, otherwise reinfection will take place and the treatment may be apparently ineffective. *Remarks.*

Failure in the treatment has been due in the first place to allowing too free access of oxygen to the fungus, as the mould fungus flourishes when it is supplied with oxygen.

*Secondly*—not having adopted the best means of securing penetration of the remedies employed.

*Thirdly*—to want of a potent germicide which does not set up extensive dermatitis, and in finding such germicide it won't be out of place if I remind the reader that many micro-organisms have two existence—an adult form where the

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organism is rapidly growing and is very easily killed, and a spore form which rests and provides for its future existence being very difficult to kill. So it is very necessary to have germicide that will act in no uncertain way that will destroy the spores of the bacilli, without producing deleterious local or constitutional results. Such a good combination is found in Hydronaphthal.

(6) In Eczema of the scalp the well-known Ihles paste may be used with advantage. This paste is also serviceable in cases of Favus. Its composition is

R Resorcin 3 i  
Zinci Oxidum 3 ii  
Pulvis Annyli 3 ii  
Lanolini 3 ii  
Vaselini 3 ii

\* Sign. Cut the hair short. Wash head with soft soap and water. Dry and apply the paste.

The following prescription is also an excellent one in cases of chronic Eczema

R Acidi Salicylici grs. x  
Acidi Pyrogallici grs. xxv  
Ichthyolici m. xxv  
Vaselini 3 i

Fit. ungt. To be applied to the affected parts.

### PRESCRIPTIONS.

#### Treatment of Eczema.

(1) In cases of Eczema accompanied by great irritation and inflammation.

R Pulvis Opii grs. xxiv.  
Plumbi Acetatis grs. xxiv.  
Aquam Bulliantis 3 vi.

\* Sign. To be applied only to limited areas.

(2) Where the inflammation is not so acute.

R Kaolin 3 vi  
Glycerine 3 vi  
Zinci Oxidi 3 iv

Liq. Plumbi Diacetat 3 iv

\* Sign. To be brushed on to the affected parts.

(3) In cases of Eczema where the inflammation is not acute and where an astringent effect is required.

R Bismuthi Oxidi 3 i  
Acidi Oleici 3 i  
Ceral Albae 3 iii  
Vaseline 3 ix  
Oli. Rosmarini m. ii

\* Sign. To be applied to the affected parts.

(4) In chronic cases of Eczema.

R Oli. Cadini 3 i  
Spts. Vini Rectificatis 3 i  
Saponis Mollis 3 i  
Ol. Lavendulae m. xx

\* Sign. Rub in well on to the affected parts.

(5) In chronic cases of Eczema with thickening of the skin.

R Saponis Viridis 3 i  
Spts. Vini Rectificatis 3 i  
Picis Liquidum 3 i

\* Sign. To be well rubbed into the thickened parts.

## THE ANTI-SEPTIC

May, 1904.

### Our compliments to the medical profession.

We offer our respects and beg to introduce ourselves to the members of the medical profession in India. It is our aim to create for them a medium for recording of scientific facts and for discussion of scientific principles. It shall be our endeavour to plead their cause and to promote their interests. We are perfectly conscious of the uphill nature of our task. The medical profession in India, even at the commencement of the twentieth century, does not occupy that position of prominence and influence, which properly belongs to it in every civilized state. It may be that the India of to-day is not civilized enough to recognize

the true place of scientific medicine in its social system. But the British rulers of India are civilized enough in all conscience, and when we find that even they are slow in appreciating the claims of their medical services, we are forced to come to the conclusion that there is "something rotten in the state of Denmark." That we are not taking too pessimistic a view can easily be proved by a little detailed analysis of the position and prospects of medical men in this country. The members of the Indian Medical service—the highest medical service under the Government of India—are recruited in England after a competitive examination. It must be remembered that the competitive examination for the Indian Medical service differs in one very important respect from competitive examination for the other Indian services such as the Civil service or the Police service. The candidates for the Indian Civil service are young men coming up from one of the Universities, or from some educational institution in Great Britain, whereas the men who compete for the Indian Medical service are men who have not only had a sound general education but have also undergone a five years' course of medical education and obtained a recognized and registrable medical qualification. A candidate for the I. M. S. examination must have spent at least £ 1500 more on his education than a candidate for the Indian Civil service. And yet what a vast difference between the pay and prospects of the two when they come out to India. It has been said that the members of the medical service have the opportunity of earning money over and above their pay by private medical practice. That is true to a certain extent. But we know as a matter of fact that only a very small proportion of I. M. S. officers ever get the

chance of making any appreciable incomes from private practice. There are a few appointments in the Presidency towns, which offer considerable opportunities for private practice. But since only one man can occupy one appointment at a time, the existence of a few plums of the service does not in any way brighten the prospects of the average I. M. S. man. When the I. M. S. man complains that he is poorly paid he is told that he can make that up by taking private practice. When he murmurs that his frequent transfers from place to place interfere with the prospect of his building up a private practice, he is told that he is not in India for making money by private practice and that he must submit himself to be transferred according to the exigencies of public service. While on civil employ the I. M. S. man has to play second fiddle to even a junior member of the Indian Civil service and when on military duty he is completely overshadowed by his colleagues of the combatant branch of the service.

Coming down to the next rung of the official medical ladder—the assistant surgeons, we find them in an even more deplorable condition than their official superiors—the members of the Indian Medical service. The Asst. Surgeon is usually a graduate in medicine of one of the Indian Universities and starts in life at least in this presidency on a salary of Rs. 100 a month. Now a day he has to hang on for a number of years as a temporary Assistant Surgeon before he can get on to the permanent establishment. During this intermediary stage he has not only to work as a maid of all work in some hospital or other, but is also liable like a general servant to be sent away at a month's notice. A permanent Assistant Surgeon has the potentiality in

him of developing into a Civil Surgeon. But as the number of Civil Surgeoncies is thrown open to promotion from the rank of Assistant Surgeons in this Presidency is theoretically five and practically only three, and as there is considerable congestion in the ranks of the Assistant Surgeons, this developmental stage in the large majority of cases is an abortive one. Lord Melbourne once said that "the best thing about the Order of the Garter was there was no d—n question of merit about it." The same is the case with the promotion of an Assistant Surgeon to a Civil Surgeon. The most senior man succeeds and "there is no d—n question of merit about it." In most services in India promotion by seniority is the rule. In a country like India where the heat is intense and the average duration of life is shorter than in Europe, perhaps the mere capacity to live and remain in service settles the question of survival of the fittest. The pay and prospects of an Assistant Surgeon are exceedingly poor when compared to those who enter other branches of the Government service. Take for instance a District Munsiff or a Deputy Collector. They start at twice the starting salary of the Assistant Surgeon and perhaps end with three times what the Asst. Surgeon ever hopes to get.

The Apothecary genus has all the grievances of the Asst. Surgeons—and a great deal more. But as this class is fast getting extinct we shall not deal at great length with their prospects. But situated as they are now their one pleasure in life is to see younger men than themselves with practically the same qualifications constantly promoted over their heads.

We next come to that large class of Medical Subordinates commonly

called the Hospital Assistant. The term Hospital Assistant originally meant a subordinate medical man whose function was to assist a Medical officer in charge of a Hospital. But with time and the increase of Hospitals and Hospital Assistants this interpretation of the meaning of the term has also changed. It now means a medical man who assists the Government or a local body in keeping a Hospital going. But whatever change may have come over the functions of the Hospital Assistant, his pay remains the same. He starts in life on a magnificent salary of Rs. 25 a month. A medical man who has undergone 3 or 4 years medical training, and who is very often put in charge of small hospitals and dispensaries, who is made to conduct medico-legal post mortem examinations and upon whose evidence probably human beings are hanged is paid the glorious sum of £ 20 a year. We wonder what the Hospital Assistant does with all that money. If his starting salary is so great the maximum that he can rise to is still more prodigious. Rs. 55 a month after 35 years service) sounds to ordinary ears like the remuneration of a petty shop-assistant rather than that of a qualified medical man. It is incredible that that is the usual amount with which a Hospital Assistant winds up a useful public career as a medical man in Government service. Now we are told that under exceptional circumstances a Hospital Assistant may rise up to Rs. 70 a month. We are thankful for this small mercy, and the Hospital Assistants may derive what consolation they can from the fact that after 35 years of public service, they can draw the same amount of money that one of the newly created Sanitary Inspector is enabled to draw after 10 days' training in Madras. Mention of the Sanitary

Inspectors reminds us of yet another grievance of the Hospital Assistants. These new Sanitary Inspectors, C. S. I.'s they call themselves (not in the remotest way connected with the order of the Star of India) are usually recruited from among young men who have not succeeded in convincing the examiners of the Matriculation examination of their great intellectual capabilities. And yet in the wonderfully short period of 10 days, during which they undergo a course of instruction at the office of the Sanitary Commissioner, they blossom out into certificated Sanitary Inspectors ready to do battle against infectious diseases in general and against plague in particular. They start on Rs. 40 pay together with Rs. 30 allowance. Provided with a pony, to purchase which an obliging Government is willing to accommodate him with a small loan, the new C. S. I. like the knights of King Arthur's Round Table, is ready "to ride abroad redressing human wrongs." In his crusade against plague the C. S. I. comes in contact with our poor Hospital Assistant and we are told, we hope that the information is not correct, that a C. S. I. in certain cases actually issues orders to the Hospital Assistants. We have nothing to say against the C. S. I. He may be left to go about doing his duty in his own way, very much as a salt petty officer, a police station house officer, or an incometax inspector. But that he should issue orders to qualified medical men is too much of a practical joke. We are familiar with compressed drugs, but we never knew before that medical knowledge could be so successfully compressed that in ten days one could swallow more of its active principle than another could swallow in 4 years of the drug in its non-compressed form.

Coming to those medical men who are not employed in any of the Government medical services—either the higher or the subordinate, we find their case perhaps the most pitiable of all. They depend entirely on private medical practice for their livelihood, and they have to carry on this against what we may call state aided competition. Now, every one will admit that it is as hard for a private medical practitioner to compete with medical men heavily subsidised by Government as it is for an Indian sugar manufacturer to compete with foreign bounty-fed sugar. But still heavy as this handicap is the Indian private medical practitioner has accepted the situation cheerfully. But unfortunately the sympathy of his professional colleagues in the Government service is not with him. "How dare you exist?" is the unasked question of the Government medical man to the private practitioner.

This is not to be wondered at. The Indian officialdom has gradually developed and built round it as rigid and exclusive a caste system as was ever devised by Brahminical orthodoxy. The Indian medical officer, though not very high up in the official caste system, is still an orthodox caste man. And he would be violating all principles of official usage and tradition if he welcomed the advent of the non-official private practitioner. The private medical man also enters into competition with the official medical man in a field which the latter had till recently all to himself. None but a philosopher will entertain brotherly feelings towards a man who persistently deprives him of a large slice of his monthly earnings. And the Indian medical officers are not Stoic philosophers by any manner of means. But at the same time we cheerfully admit

that of all the official classes the medical officials are among the most sympathetic. It may be that the nature of their work brings them more closely into contact with the non-official classes, and the more intimate knowledge thus acquired generates mutual sympathy and closer union. Or it may be that the whole training and associations of a medical man exercise a humanizing and refining influence which to a very large extent withstands what Mr. John Morley so aptly described as the "deteriorating effect" which is usually observed in civilized men when they are placed for prolonged periods in savage or semi-civilized surroundings. Personal differences and professional jealousies will exist as long as human nature remains what it is. But in course of time—and a very short time too—we expect that the artificial barrier now existing between the official and non-official medical men will disappear except for administrative purposes. Already the official medical man is gradually descending from the Olympian heights on which his own personal vanity and the ignorance of the general public had installed him. The private practitioner is slowly rising from the miserable depths to which his non-official disability had relegated him. The two will meet sooner or later, and we hope then that they will exchange pleasant greetings. To bring the medical profession in India to its legitimate place in the forefront of all learned professions will require the united efforts of all its members, official and non-official, European and Indian. The parliament of man and the federation of the world is still a poetic dream, but it rests with the medical profession in India, and in Great Britain too, whether the idea of a united medical profession in India, a general

Medical Council for India and a Medical Registration Act for India, should remain a dream indefinitely or should be brought within the range of practical politics within the next few years. Unfortunately the modern craze for amassing large fortunes has taken possession of the members of the medical profession also. And the popular method of measuring professional success by the largeness of the banking account of the professional man has added fresh impetus to the commercial aspects of medical practice. The philosophy that affects to despise money does not go very deep. And we do not for a moment say that honest and legitimate earning of wealth is not one of the aims of the members of the medical profession. But it ought not to be the aim. It never was the main aim of the medical profession in any civilized country. The richest doctor is by no means the most respected. Fortune hunters, if they enter the medical profession will have, to use a slang expression, "gone to the wrong shop." If they wanted to make money they ought to have become Vakeels or Dubashes. The emoluments of the medical profession are not very high. To enter the medical profession with an idea of going into trade is as roundabout a way as to become a priest to qualify as a publican. We are compelled to make these remarks because we firmly believe that the commercial spirit is the greatest bar to medical progress.

I hold it dear,  
Virtue and cunning were endowments greater,  
Than nobleness and riches: careless heirs  
May the two latter darken and expend;  
But immortality attends the former,  
Making a man a God. 'Tis known, I ever  
Have studied Physic, through which secret art,  
By turning over authorities, I have  
(Together with my practice) made familiar,  
To me and to my aid the best infusions



That dwell in vegetables, in metals, stones,  
And can speak of the disturbances that nature  
Works, and of her cures; which doth give me  
A more content in course of true delight  
Than to be thirsty after tottering honour  
Or tie my treasure up in silken bags  
To please the fool and death.

## Our Contemporaries

(From the Polyclinic)

### On Injuries to the Eye.

By E. JULER, F. R. C. S.

[Abstract.]

**I**NJURIES to the eye are either contusions or wounds. A blow which produces an ordinary "black eye" either may or may not injure the eyeball. As a consequence of this, or some similar form of violence, various kinds of damage may result. Some of these produce immediate impairment of vision, whilst in other instances there is; perhaps, little interference with sight at the time, though a serious degree of blindness may be the ultimate effect. A common result of contusion of the eyeball is hæmorrhage into the anterior chamber. This, in itself, is hardly a serious condition, as the blood will usually become absorbed in the course of a few days. But if there is hæmorrhage into the vitreous—shown by the absence of the red reflex when a beam of light is thrown into the eye—the prospect is an anxious one, and the prognosis must be guarded. Such hæmorrhage may occur apart from the presence of blood in

the anterior chamber. It may be the consequence, for example, of an injury which ruptures the choroid. Another consequence of contusion of the eyeball is concussion choroiditis. Inflammatory changes are produced in the choroid, and these, as their ultimate result, lead to pigmentary deposit in the macular region, with the possibility of serious impairment of central vision. In other cases, again, there appear to be produced a temporary disturbance and loss of function of the retina—a *commotio retinæ*—and the patient, though partly blind for a time, and perhaps for a long time, ultimately regains perfect vision. Another, and a relatively common result of violence, and sometimes of comparatively slight violence, is detachment of the retina. This may either follow the injury immediately, or may be postponed, and in the latter case it is at times difficult to get a history of violence, more particularly if this has been slight in degree. An unusual condition which sometimes develops as a late result of injury is the appearance of "holes" in the retina, these looking like punctures in the macula. Hæmorrhage into the retina, detachment of the choroid, and rupture of the sclerotic, are amongst the other serious effects which violence may produce in the tissues of the eyeball. The last-mentioned always means great violence and is almost invariably accompanied by considerable loss of vitreous—indicated by *minus* tension.

The damage, indeed, is so great that the only safe course is to remove the eyeball. Another group of cases are those in which the iris is damaged. There may be a mere paralysis causing dilatation of the pupil—a condition which sometimes persists for a long period, and in the absence of a history of violence may lead to a suspicion of organic nervous disease. Another functional result is paralysis of the ciliary muscle and consequent loss of the power of accommodation. In other instances there is a more or less extensive separation of the iris at its periphery. This at first may be concealed by the hæmorrhage into the anterior chamber which accompanies such a casualty, but, as the blood is absorbed, the gap at the periphery of the iris comes into view. The gap rarely or never becomes closed, though, unless the rent is a considerable one, it hardly interferes with the acuity of vision. The proper treatment is the instillation of atropine, which, by dilating the pupil, carries the iris out towards the periphery, and thus gives a chance for union to occur, or, in any event, diminishes the risk of further separation. In another group of cases there is dislocation, partial or complete, of the lens or rupture of the lens capsule. The latter accident interferes with the nutrition of the lens substance, and is followed by the development of cataract. Apart from damage to the structure of the globe, a blow on the eyeball may damage the

trunk of the optic nerve. The nerve may be ruptured, or hæmorrhage may occur into its sheath. In such a case the patient will be blind, though, provided no intra-ocular damage has been done, the ophthalmoscopic appearances may be normal. Later, atrophy of the nerve takes place, and the optic disc acquires the characters which mark this condition. Lastly, in connection with contusions may be mentioned the possibility of fractures of the orbital walls. These can only be produced by great violence; they are usually accompanied by considerable damage, and by injury to intracranial structures.

Wounds of the eyeball are either penetrating or non-penetrating, and the latter either may or may not be associated with the presence of a foreign body in the eye. Non-penetrating wounds may be limited to the conjunctiva or cornea, or they may reach the sclera. A small wound or abrasion of the cornea may be difficult to detect, but it should always be suspected when, after some slight accident to the eye, there is marked photophobia, and it may readily be brought into view by dropping into the eye a little of a 2 per cent solution of fluorescein, which gives to the injured part a greenish yellow stain, but leaves uncoloured the normal corneal epithelium. The great risk of the non-penetrating wounds is the liability to septic infection. The warm, moist, conjunctival sac is a situation very favourable to bacterial growth,

and when surface infection once occurs the elaborate lymph system of the eyeball favours absorption. Thus the septic processes readily extend to the deeper parts of the globe. The slightest injury may in this way be the prelude to a process of suppuration which may cause the complete destruction of the eyeball. Hence all injuries, however apparently trivial in themselves, demand careful treatment with a view to render them aseptic and to promote their rapid healing.

Penetrating wounds, without the retention of a foreign body in the eye, are usually caused by some sharp-pointed instrument such as a pair of scissors, a knife, bradawl, &c. Such a wound may be limited to the cornea, and may thus be overlooked unless the fluorescein test is employed. It always, however, permits the escape of the aqueous. As a consequence, the tension of the globe is diminished, and the anterior chamber is rendered shallow by the approach of the iris to the cornea. Indeed, it is a common occurrence for the iris to prolapse into the wound—a condition which at once indicates the existence of a penetrating wound of the cornea. The treatment in these circumstances is as follows:—Wash out the palpebral sac thoroughly with a solution of perchloride of mercury (1 in 5000); if the iris is protruding, try, after cleansing, to replace it; this failing, the protruding portion must be drawn forwards with forceps and

cut off with a pair of scissors—the resulting coloboma will be a less serious prejudice to vision than the adhesions and other consequences which will follow if the iris is left in the wound. After resotation or removal of the iris atropine must be instilled and the eye covered with a pad and bandage.

Penetrating wounds of the sclera vary in importance according to (1) their size, and (2) their situation. A large wound, wherever situated, will almost certainly be attended by free escape of the vitreous. The eyeball therefore becomes flaccid and collapsed, useless as an organ of vision, and a source of danger to the other eye. Hence the safe course is to remove it. A small wound is not necessarily attended by these consequences, and in such a case every effort should be made to save the eye. The chances of doing this depend largely on the situation of the wound. If it is in the anterior part of the sclera, that is, near to the circumference of the cornea, it will almost certainly involve the ciliary body. This will mean hæmorrhage into the vitreous. Further, if septic matter has been introduced with the instrument that has caused the wound, absorption in the region of the ciliary body occurs with great rapidity and ease, and so there is great danger, not only of destruction of the injured eye, but also of the development of sympathetic ophthalmitis in the other eye.

Thus wounds—even small wounds—which penetrate the anterior or ciliary region of the sclera—the danger zone, as it is called—are attended with great risk, and demand always a guarded prognosis. Wounds outside the ciliary region are less dangerous, but with any one of these, even the smallest, there is the risk of septic infection.

Penetrating wounds complicated by the presence of a foreign body in the eye are most commonly caused by chips of metal. Thus they occur in various classes of artisans. Another cause is shot discharged from a gun, or a piece of metal driven into the eye by the explosion of a gun-cap. The first point to decide is whether there actually is a foreign body in the globe and if so, what is its exact situation. Hence the anterior chamber, the iris, and the lens must each be carefully examined under a beam of light concentrated on the eye by means of a lens (focal illumination). In the anterior chamber the foreign body may possibly be concealed by effused blood, and to detect one which has become lodged in the lens it may be necessary to first dilate the pupil. If the foreign body has penetrated as far as the vitreous it can scarcely be detected except by the ophthalmoscope, and it may be altogether concealed by hæmorrhage. Sometimes a foreign body may be seen lying in actual contact with the retina at the posterior pole of the eyeball. In the event of

failure to detect the presence and position of a foreign body by direct inspection—when the history renders it possible that one is present—Mackenzie Davidson's instrument for localising the position of such bodies by means of stereoscopic skiagrams should be employed. Another mechanical aid, at least in the case of magnetic objects is Haab's magnet, which will cause pain in an eyeball in which any such object is lodged. The magnet may also be used for the extraction of objects of this nature. The usual result of the entrance of a foreign body into the eyeball is violent inflammation (more especially if septic material is carried into the wound) with the risk of sympathetic ophthalmitis. In other instances, a small, clean piece of metal may enter the eye and remain with, as a consequence, only a limited amount of surface congestion in the circumcorneal zone—an appearance always suggestive in connection with the possibility of a foreign body being present in the eye. Very exceptionally, a fragment of clean metal will remain for years either lodged in the lens or lying against the retina without producing any inflammatory reaction and unattended by any serious limitation of vision. The chances are, however, enormously in favour, in any case of a foreign body in the eye, of loss of the eye by inflammatory changes with a grave risk of extension to the other eye. Hence, when once diagnosed, the invariable rule is to endeavour to extract the foreign body. The method

to be adopted will vary with the position and nature of the object. A fragment of steel may be removed by Haab's magnet, either through the wound of entrance or, if this has closed, through an incision made near to where the steel is lodged. In the case of a non-magnetic body, similarly, it must be accurately localised and then an endeavour to remove it must be made. Failure raises the difficult question of removal or evisceration of the eyeball. Rarely, as already stated, a foreign body remains quiescent and does not produce trouble. But in the great majority of cases there is grave danger both to the injured and to the sound eye, and delay in removal of the one means a risk that when this step is finally taken it will be found that it has been taken too late to save the non-wounded eye. No absolute rule can be stated. Each case must be judged on its merits. But it is better to be on the safe side and to remove an eye that is sightless or painful and is a danger to its fellow, rather than incur a risk of the destruction of both eyes with its terrible consequence of total blindness.

(From the Treatment).  
**Phosphorus and its Derivatives  
 as Therapeutic Agents.**

BY H. W. SYERS, M. A., M. D., CANTAB.

THE virtues of phosphorus in the treatment of tuberculosis have been at one time lauded and at another denied. Not so very many years ago phosphorus was spoken of in terms of the highest praise, not merely in the treatment of phthisis, but in a very large number of other maladies. In nervous diseases especially was the power of phosphorus esteemed very highly, and wonderful cures of intractable affections of the nervous system were thought to have been effected.

No doubt the hackneyed aphorism "Ohne Phosphor, kein Gedanke" had much to do with this cult of phosphorus in the treatment of chronic and incurable nervous diseases, and thus the quack, always alive to coming tendencies of medical thought, and anxious to anticipate up-to-date therapeutics, arrived in the field and boldly proclaimed phosphorus as being the remedy, a universal panacea and a veritable *elixir vite*.

When this stage was reached it is not surprising that practitioners were less and less inclined to make use of a remedy which had fallen into the degraded position occupied by phosphorus, and still more has this tendency of disinclination been accentuated

by the fact that the rash and ill-considered use of the drug has led to not a few serious accidents.

At the present day, although phosphorus is admitted to the Pharmacopœia in the form of the crude drug and the phosphorated oil, it is certainly seldom or never made use of. Further, much difference of opinion exists as to its effects, and for this difference of view great justification exists.

Yet, just in proportion to the indifference shown to phosphorus in its crude form, so is there a tendency to employ the phosphates, the glycerophosphates, and other derivatives of the element. At the present time the leaning is towards the lecithin compounds, or glycerophosphates. Not so very many years ago the rage was for the hypophosphates in the treatment of tuberculosis; now the hypophosphates are seldom mentioned.

In an article which appeared in *La Presse Medicale* for December 18, 1902, Dr. A. J. Plique, under the heading, "Phosphorus and its Derivatives in Tuberculosis" (*Le Phosphore et des Derives dans la Tuberculose*), calls attention to the action of phosphorus in the treatment of the different varieties of tuberculosis. He refers to the gradation in the active power of the different preparations, starting from the excessive activity of phosphorus itself and traversing through the series of hypophosphates,

glycerophosphates, etc., until the comparatively inert phosphates are reached. As he points out, it, by no means, follows that the less energetic products are also the least endowed with therapeutic virtues. The case is quite otherwise, and, as the author remarks, being more readily retained by the stomach, they are, at all events, harmless, and acting powerfully on the imagination of the patient, they enable the appropriate hygienic and dietetic measures to be carried out.

There can be no question as to the important part played by phosphorus in the work of general nutrition. As Bonchard has put the matter: "No cell can be produced or exist without phosphorus." And it is therefore an essential condition for the production and growth of young cells that phosphorus be present. In the repair and cicatrization of tissues phosphorus is also absolutely necessary. To phosphorus is owing the activity of the leucocytes, and this activity is of paramount importance in the healing of tuberculous lesions.

Again, phosphoric acid is the chief vehicle for the conveyance of the salts of urine to the organism. A most important portion of the reparative process in tuberculous disease is the certification of the lesions; this is perfectly familiar to all those who have much to do with post-mortem work, in which the knife so often grates against the tuberculous nodules at the

lung apex, and this, too, in those whose death has not arisen from pulmonary lesion of any kind. "Healed phthisis" is a standing proof of the necessity of phosphorus in the animal economy.

Now, tuberculosis is one of those maladies—phosphaturia in diabetes excepted—in which the greatest waste of phosphates takes place in the tissues. Such a loss of phosphates is effected through the sweat, the expectoration, as well as by the intestinal canal and urine. But the chief loss is by the expectoration and the urine. Tubercular sputum contains a very large quantity of mineral and organic phosphates, and the presence of lecithin has frequently been detected therein. Purulent expectoration is particularly thick in nuclein, and, indeed, it was from the nuclei of pus corpuscles that this substance was in the first instance isolated by Mieschew. Of course, it is in the advanced periods of the malady that this loss by expectoration takes place.

But the loss of phosphates by the urine takes place in quite the early stage of the malady, and is also very considerable. The author thinks that it may, indeed, be regarded as a differential test as between pseudochlorosis attending tuberculosis and genuine chlorosis, in which malady the urinary phosphates, far from being increased, are actually diminished.

In tuberculosis as much as 4 grammes of phosphates may be passed daily. Hence, as there is almost invariably polyuria, it is obvious that the normal amount of 2.50 grammes daily is much exceeded.

Some forms of treatment are based on methods by which this loss of phosphates is reduced. Such is the treatment by repose, for it has been proved that muscular fatigue increases the output of phosphates. Fatty diet also hinders phosphatic waste, and it may be that cod-liver oil owes its undoubted efficacy to this fact. Alcohol also appears to be endowed with the same power.

It is clear that the diet should be so arranged as to supply the waste of phosphatic materials, and for this purpose milk is extremely valuable. Oysters are also rich in phosphates, though the recent scare concerning this form of delicacy is likely to check their employment as a dietetic aid.

The author discountenances in strong terms the use of pure phosphorus and we think his objections to the employment of this element are well founded. He refers to treatment by phosphorized oil, the effects of which are at first truly surprising. Patients submitted to this treatment feel much stronger, and experience a great diminution in the quantity of expectoration; but the final result is most unsatisfactory. Sudden death

from hæmoptysis or pulmonary stasis was especially frequent, and when the treatment is prolonged the tendency of the drug to induce fatty changes is most injurious.

The same good result may be obtained by the use of phosphide of zinc. In phthisis this drug may be given in granules, each containing 1 or 2 milligrammes. But although phosphide of zinc is eight times less active than is phosphorus, yet not more than a centigramme should be given in one day, and a week's treatment should be followed by a similar respite.

Phosphoric acid is but seldom made use of, but it is refreshing in fever, and may tend to promote digestion. It may be given in fever cases as follows:

|                           |            |
|---------------------------|------------|
| Acid phosph. dil. . . . . | 2 grammes. |
| Syrup . . . . .           | 100 "      |
| Water . . . . .           | 900 "      |

One or two litres of this may be given per diem.

The hypophosphites have been used in the treatment of phthisis, and the author thinks that, apart from their stimulating action, which they possess in common with all other derivatives of phosphorus, they have a special and valued influence on the disease. By diminishing the oxidation of the tissues they tend to support nutrition. Under the use of hypophosphates the appetite increases, the strength is regained, and anæmia becomes less

marked. The form which is most amenable to this treatment is the pseudochlorotic variety of tuberculosis. But it must not be forgotten that when given during long periods, or in too large doses, the hypophosphites are apt to produce hæmoptysis and congestions. At the beginning of treatment not more than 50 centigrammes should be administered, which may be increased to a maximum of 2 grammes per diem; and hypophosphite of soda is more easily given than the lime salt. Either the syrup of hypophosphites may be prescribed or the following solution:

|                                 |            |
|---------------------------------|------------|
| Hypophosphite of soda . . . . . | 3 grammes. |
| Water . . . . .                 | 120 "      |

A tablespoonful in water once or twice daily, each spoonful containing 50 centigrammes.

As regards the phosphates, phosphoric acid being a tribasic acid, and there being a triple series of salts, the pharmacology of these is somewhat involved. Each of the three series possesses different properties. The tribasic phosphate is altogether insoluble; it is useful in cases of dyspepsia, and it greatly reduces the irritating effect of creosote and of tannin when mixed with the drugs. The tribasic phosphate is also insoluble, and seldom used. On the other hand, the hypobasic salt is very soluble. It is used as an aid in dyspepsia, and the lime salt forms an important constituent of the syrup of the phosphates.

Lactophosphate of lime may be given as follows:—

Lactophosphate of lime . . . 15 grammes  
Water . . . . . 300 „  
A tablespoonful with meals.

Phosphate of soda is much used as an aperient in doses of 30 to 40 grammes. In quantities of 1 to 5 grammes daily it is best tolerated.

Dujardin-Beaumetz gives the following formula:

Phosphate of soda . . . . 6 grammes.  
Phosphate of potash . . . . 3 „  
Syrup of orange . . . . 60 „  
Wine . . . . . 200 „

A wineglassful with each meal. The wine acts as a laxative.

Attempts have been made to combine hypophosphoric or phosphoric acid with creosote, and thus to obtain a product uniting the virtues of both remedies.

According to Lorot, the prolonged use of these preparations tends to cause polyneuritis resembling that which results from the use of toxic remedies. Thus, creosote polyneuritis is fairly common in women. It tends to occur more readily in those cases in which arsenic has been given shortly before, or in which it is simultaneously administered. The first symptoms are weakness of legs, indefinite pains and cramps, and a tendency to stumble. Instead, when phosphate of creosote is given for long periods, wasting ensues,

hence it is desirable to use this drug, for short periods only. Brissart's formula is:

Phosphate or tannophosphate of soda 25 grammes.  
Syrup of orange . . . . 70 grammes.  
Gum arabic . . . . . 10 „  
Orange-flower water . . . . 125 „

A tea-spoon containing 1 gramme of phosphate or tannophosphate.

The phosphate of creosote is also given with cod-liver oil, and in this form is well borne by the stomach.

The phosphate of creosote is very irritating, and should be given only by the rectum. The following is a good formula:

Tinct. opii . . . . . 10 drachms.  
Phosphate of creosote . . . 1 to 2 grammes.  
Yolk of egg . . . . . 1 grammes.  
Olive oil . . . . . 30 grammes.  
Milk . . . . . 180 „

In another series of preparations the therapeutic value depends upon anhydride of phosphorus in inorganic combination. Phosphomannate of iron is one of these preparations, but so far little is known as to the advantages which accrue from the use of these compounds.

The glycerophosphates are of value as toxic agents in neurasthenia, tuberculosis, etc. They may be regarded as representing the final products of the breaking up of lecithin. The latter, when exposed to the influence of the pancreatic juice, breaks up into glycerophosphoric acid and fatty acid, and

the same transformation is effected at a temperature of 70°. Large numbers of ailments contain lecithin, amongst others yolk of egg, and the lecithin contained in these is therefore decomposed, as referred to above, by cooking. The glycerophosphates tend somewhat to upset the stomach, and to avoid this disturbance an equal quantity of carbonate of soda may be added to the dose.

But if the gastric disturbance continues, then the drug should be given hypodermically as follows:

Glycerophosphate of soda . . . 1 gramme.  
Water . . . . . 4 grammes.

Such injections are always well borne. The dose is 25 centigrammes. Lecithin alone is well tolerated by the stomach, but its taste is objectionable; it is not toxic, even in large doses. Branheim and Tarburg, however obtained good

results from quantities of 25 to 50 centigrammes per diem. These doses may be given in pills. By hypodermic injection the dose varies from 10 to 28 centigrammes, and this quantity can be easily dissolved in 2 to 5 centimetres of sterilized oil. However administered, lecithin will exert a favourable influence on the course of tuberculosis. Phosphates will cease to be eliminated and at the same time the urea in the urine will be increased, both of these changes proving that the process of retitution has been favourably modified.

The author's statements are throughout characterized by great moderation and by an entire absence of overlaudation. This greatly increases the value of the paper which certainly gives a most complete and comprehensive practical survey of the important field occupied by the therapeutics of the derivatives of phosphorus.

## University of Madras.

The following are the names of successful candidates.

**Final M. B. & C. M.**  
Lakshmana Kamath Mulki.  
Nanjappa, Cheemasanahalli.  
Oliver, David P.  
Ramabaliga, Burntwal.  
Shankernarayana Pillai, T. A.  
Subba Rau Ragho.

**Final L. M. & S.**  
Chandi, Jacob J.  
Chintan Menon, Valur.  
Ganesh Sunder Rau, Tonse.  
Gopinatha Rau, R.  
Mathu, A. Thomas.  
Paramesvaram Pillai, Krisnan.  
Sarvottam Poi, Ammembal.  
Varughese T. K.



# BISHOP'S EFFERVESCENT CALCUSOL

(Registered name).  
Piperidine Para Sulphamine Benzoate, 5 grains } in  
Potash Bicarbonate, 10 grains } 60 grains.

HOWEVER Physicians may differ as to the exact part played by Uric Acid in the causation of the group of disorders commonly known as Rheumatic or Gouty, there is a general agreement that when it tends to be deposited in excessive quantities either in the urine, in the joints, or in the form of Uric Acid Calculi, it is desirable to administer some drug which will not only counteract this tendency to excessive formation, but will also assist in eliminating accumulations. Such a drug ought to be easy to administer, readily assimilable without giving rise to any constitutional disturbance, and sufficiently stable to allow of its preparation and exhibition in agreeable form. It should also be capable of detection in the urine for some hours after administration, as evidence that it had not been at once excreted, and also that it was not destroyed in the process of assimilation. All these requirements are combined in Bishop's "CALCUSOL," which we do not hesitate to pronounce the most powerful solvent of Uric Acid at present known. We base our claims upon the following facts and experiments:—

The investigations of Tinnicliffe and Rosenheim showed that Piperidine possessed a marked superiority over all other Uric Acid solvents, and that while it could not be well employed in the form of the base on account of its very unpleasant odour and taste, it could be administered in the form of a salt without the slightest untoward effects.

The highly encouraging results of their investigations led us to search for a salt of Piperidine which should fulfil all Pharmaceutical and Therapeutic requirements. After a long course of experiments, we came to the conclusion that the only salt thoroughly reliable from both points of view is that formed by combining the base Piperidine with Para Sulphamine Benzoic Acid. This salt is Piperidine Sulphamine Benzoate ( $\text{SO}_2 \text{NH}_2 \text{C}_6\text{H}_4 \text{COOH C}_6\text{H}_5 \text{N}$ ). It is stable at all temperatures up to  $100^\circ \text{C}$ ; does not absorb water or  $\text{CO}_2$  from the air, as the base itself does; contains a very high percentage of Piperidine; is neutral; is freely soluble in water; and can be administered in large quantities without the least inconvenience.

The observers already quoted found that certain organic salts of Piperidine when administered had a twofold action, not only did they diminish the total amount of Uric Acid produced, but by increasing the quantity of Xanthine—a substance the excretion of which gives rise to no difficulties—did not in any way interfere with the normal nitrogenous output. In fact when Piperidine Para Sulphamine Benzoate is administered, matter which would otherwise be converted into insoluble Uric Acid is in great measure excreted as soluble Xanthine. Experiments prove that when 5 grains\* of Piperidine Para Sulphamine Benzoate is taken in water internally it can be detected in the urine one hour afterwards and at all periods up to ten hours. After twenty hours no trace could be found, showing complete elimination of the drug had taken place in that period. As Para Sulphamine Benzoic Acid itself is a Urinary Antiseptic, its presence in this salt should give the latter similar properties; but our experiments in this direction have not gone far enough to enable us to state definitely the exact value of Piperidine Para Sulphamine Benzoate as a Urinary Antiseptic.

Bishop's "CALCUSOL" is a Granular Effervescent preparation of the above salt combined with Potash. It has already been used with signal success in different conditions of the Uric Acid diathesis. Among these may be specially mentioned cases of Uric Acid deposits in the small articulations—a condition commonly known as Rheumatic Gout. After a course of "CALCUSOL," the joints have become markedly smaller, the pain disappeared, and the flexibility of the joints was restored.

"CALCUSOL" is also indicated in cases of excessive deposit of Uric Acid in the urine, especially where this condition has given rise to the actual formation of renal or bladder calculus. Its use has materially aided the treatment of renal colic, and where frequent micturition and bladder irritation arise from Uric Acid Sediments, a course of "CALCUSOL" has been followed by the happiest results, while in no single instance has its administration been attended by the slightest inconvenience. We therefore offer it as an important addition to the Physician's armamentarium for the treatment of all Uric Acid disorders which have not yielded to the ordinary solvents, and especially for Rheumatism either chronic or recent, Rheumatic Gout, and renal or bladder calculi.

We have given the registered name "CALCUSOL" to our Granular Effervescent Piperidine Para Sulphamine Benzoate, Potash Bicarb, for the Physician's convenience in prescribing and we wish to call attention to the fact that we are the sole manufacturers of this Piperidine Salt and of any preparation containing it.

"CALCUSOL" is sold only in one sized bottle containing 4oz. (28 doses). Price to the profession 3/8.

A wooden measure (holding 1 drachm) accompanies each bottle which, when filled level gives the proper dose.

We do not sell "CALCUSOL" to the public; it is supplied exclusively to Medical Men and Chemists.

**CALCUSOL** INTRODUCED AND PREPARED ONLY BY  
**ALFRED BISHOP, Limited, Manufacturing Chemists,**  
Speck's Fields, Spelman Street, Mile END NEW TOWN, London E. C. Sold by:—**W. E. Smith & Co. Madras.**

# The Antiseptic.

Vol. I.]

JUNE, 1904.

No. 2.  
Annual Subscription Rs. 5.

## Original Articles.

### The Etiology of Leprosy.

#### The Fish hypothesis and its fallacies.

NO subject has afforded freer scope for the play of the scientific imagination than that of the etiology of Leprosy. Climate, soil and race have each in turn been accused of being concerned in the causation of leprosy. But they have all had to be acquitted as there was neither direct nor circumstantial evidence against them. Almost from the very commencement of Medical speculation as to the cause of leprosy, suspicion seems to have fallen on some article of diet as the probable originator of this dreadful disease.

Even among the ancient Greeks the belief was prevalent that the eating of milk and fish at the same meal was an infallible cause of leprosy. "From time to time and in various places" says Mr. Jonathan Hutchinson "many articles of food have come under suspicion." But these popular suspicions would not have attracted the serious attention of the scientific world any more than the popular belief that Epilepsy is caused by the action of an evil spirit or that eclipses

are produced by the attempted swallowing of the sun or moon by an enormous snake, had it not been for the enthusiastic advocacy of the fish hypothesis by one of the foremost medical men of the present day—Mr. Jonathan Hutchinson. Mr. Hutchinson has been attempting to prove for these last 30 years that leprosy is caused by the eating of badly-cured fish. As the result of his labours he has succeeded in convincing no one, except himself, of the correctness of the fish hypothesis. With a less eminent advocate the hypothesis would have deliquesced long ago. Coming from one of Mr. Jonathan Hutchinson's scientific eminence and professional reputation the hypothesis deserves our careful consideration. I may here mention that a great step has already been taken in determining the cause of leprosy by the discovery of the *Lepra Bacillus* by Hansen of Norway.

It is true that the chain of evidence required to establish the *Lepra Bacillus* as the real cause of leprosy is not yet complete. There are some links still wanting. But there is no denying that a very important step has been taken. Speaking about Hansen's *Bacillus* Mr. Hutchinson says:—

"Without doubt one of the most powerful influences which has militated against the acceptance of the fish-hypothesis, or, indeed, of any which should trace



leprosy to food causation, was Hansen's discovery of the lepra bacillus. *In some sense this discovery may be called an unfortunate one, for, unless I am much mistaken, it has thrown back our recognition of the true cause of the spread of leprosy by a quarter of a century. It was without doubt an important item of new knowledge; it was "light from Heaven," but for all that it has "led us astray." It may, however, be confidently assumed that it will not be permanently injurious to the cause of practical progress. The discovery of a direct relationship between this bacillus and cured fish, which is not improbably one which awaits us in the near future, would do more to remove incredulity in one month than the appeal to circumstantial evidence can do in a half century.* (The italics are ours.)

I quite admit that such a discovery of a direct relationship between this bacillus and cured fish would go a long way towards proving the fish hypothesis. But so far, neither Mr. Hutchinson, nor any other investigator has proved the existence of any such relationship. And in the absence of any direct proof Mr. Hutchinson relies on circumstantial evidence to establish his theory.

"From the beginning of my interest in the subject" says Mr. Hutchinson "I have recognised that the facts from India were more difficult than those from any other place to reconcile with this fish hypothesis." But after his recent flying visit to India Mr. Hutchinson has convinced himself that even the facts from India support rather than contradict his fish hypothesis. After a perusal of Mr. Hutchinson's writings on the subject since his visit to India, it seems to me that Mr. Hutchinson has hardly touched the "facts from India." "He concerns himself not with facts—he only reasons." I shall in the course of this article give a few "facts from India" and see how Mr. Hutchinson's circumstantial evidence stands in the light of these facts.

Before I deal with the facts regarding the leprosy problem on the mainland of

India, I shall dispose off Mr. Hutchinson's statements about two islands very near India, namely, Minicoy and Ceylon.

Let us take Minicoy first. Here is what Mr. Hutchinson has to say about Minicoy.

"The little island of Minicoy (off the southern extremity of India) offers probably unequalled opportunities for the investigation of the causes of leprosy. The disease prevails there in higher ratio to the population than in any other part of the world. Its inhabitants live on cocoanuts and fish, many of them eating three fish meals a day. The fish is eaten in various states of preservation. It is said that of four classes into which the population of five thousand is divided only the two lower suffer from leprosy."

All that is quite true, but it is not the whole truth. Mr. Hutchinson has presented the facts very much in the same way as an advocate states his client's case, putting forward prominently what tells in his favour and carefully omitting what goes against him. Mr. Hutchinson's syllogism is very simple. The inhabitants of Minicoy chiefly live on fish. Minicoy has the largest percentage of leprosy in the world. Therefore, leprosy must be caused by fish eating. Let us study Minicoy at close quarters and then see if Mr. Hutchinson's arguments will hold water. Minicoy is one of the Islands included in the Southern group of Laccadive Islands which consists of 5 islands, named (1) Agatti, (2) Kavaratti, (3) Androth (4) Kalpeni and (5) Minicoy. Of these, Minicoy is the largest with an area of  $1\frac{1}{4}$  sq. miles. The smallest is Kalpeni whose area is 1 sq. mile, the others having areas of  $1\frac{1}{2}$ ,  $1\frac{1}{3}$  &  $1\frac{1}{4}$  sq. miles. The total population of the islands according to the last census (1901) is 10,274, out of which 3097 belong to Minicoy. The total number of lepers in the Laccadives is 15, all of whom are on the Island of

Minicoy. The number of lepers on the island of Minicoy has varied from 9 in 1877, to 17 in 1889. In the other four islands *there are no lepers.* Mr. Kunhi Kannan, who was minister to the Rajah of Cannanore to whom these islands belonged for a long time, writes to me to say: "I have visited Androth, Kavaratti and Agatti, and I hardly saw a leper in those islands. The inhabitants of these islands are fish-eaters just as much as the Minicoites are."

The division of the population into 4 classes exists on all the five Islands. The explanation of this division is that the original inhabitants of these islands were Hindus who were shipwrecked off the coast of the Laccadive Islands when they went in search of their king Cheraman Perumal. They were subsequently converted to Mohamadanism. And even after their conversion, they still keep on the Hindu division of 4 classes, very much as a large number of Christian converts in India keep their Hindu castes in spite of their profession of the Christian faith. The climate, the soil, the flora, fauna, habits and occupations of the inhabitants are all the same in these five islands. The main industry is fishing; and they all live on fish and cocoanut. Now, I could easily argue very much as Mr. Hutchinson has done, in this way:—The inhabitants of Agatti, Kavaratti, Androth and Kalpeni live mainly on fish. There is no case of leprosy on these islands. Therefore, fish-eating does not produce leprosy.

I may also mention that of these islands Minicoy is the richest and Kalpeni is the poorest. The inhabitants of this latter island are poor, dirty and lazy as compared with the inhabitants of the other islands. They are more likely to eat

rotten and decomposed and badly-cured fish than the people of Minicoy, who are comparatively well off. And yet there is not a single case of leprosy in Kalpeni. Another fact which Mr. Hutchinson will find very difficult to explain is this—"According to him if fish is cured with plenty of salt, it is not likely to become unwholesome. I shall quote his very words when I come to deal with fish-curing in India. For the present it will be sufficient if I point out that the inhabitants of Minicoy have a plentiful supply of salt. In Logan's Manual of Malabar, Vol. II, this para. appears:—"On the introduction of salt and tobacco monopoly on the coast, they were imitated in the Cannanore Islands (another name for the Laccadive Islands when they were under the Rajah of Cannanore). The Rajah made considerable profit by this; but of late this has fallen into disuse and the people now supply themselves. *The free supply of salt to the islanders was recognized by Government in February 1880.*" (The italics are ours.) There is only one other fact that I want to mention about Minicoy, and that is that most of the fish cured in Minicoy chiefly mass-fish—is exported to Ceylon. That brings me to the next of Mr. Hutchinson's islands—Ceylon. If Minicoy served Mr. Hutchinson as an example of a largely fish-eating population generating leprosy at an abnormally high ratio, Ceylon presented to him the spectacle of abstinence from eating cured fish saving the inhabitants from the horrors of leprosy.

Speaking of Ceylon Mr. Hutchinson says:—

The population of Ceylon is somewhat more than three millions and a half, and the total number of lepers is estimated as 635. This is a ratio of about 1·8 per 10,000. It would appear that there is a slight

tendency to increase, due, possibly, to the importation of Indian coolies for the tea plantations. There is a very comfortable leper asylum at Hendala, near Colombo, which receives 339 patients, and the Kalmuni hospital receives twenty-six more. The segregation is entirely voluntary, and there are no laws in reference to the disease. Ceylon presents few definite problems in respect to leprosy. Fish-eating is a possible cause in all classes, and so far as I know, nothing is alleged as to the greater liability of any one class. As usual, it is a disease chiefly of the poor, and it prevails mostly near the coast. I am indebted to my friend Sir William Kynsey, long the Inspector-General of Hospitals for the Island, for much information regarding Ceylon. He informs me that much salted fish is imported from India, and this matter ought to be inquired into.

Sir William Kynsey was quite right. There is a large quantity of salt fish imported into Ceylon from Minicoy, as I have already stated, and from India. Did Mr. Hutchinson investigate this subject when he was in India? If he did, I have not seen the results of his investigation published. From the report of the administration of the department of salt revenue in the Madras Presidency for the year 1901-1902. (page 14, para. 73). I find that in that year "the actual quantity of fish which, after undergoing the process of curing, left the yards in a fit condition for use amounted to 1,088,781 maunds, and in addition to this 20,385 maunds were imported from places outside the Presidency. So that the total quantity available for local consumption and for export amounted to 1,109,166 maunds. 907,401 maunds or 81.8 per cent. of this quantity was consumed within the Presidency." So that over 18 per cent. of the total quantity of salt-fish in this Presidency was exported to places outside the Presidency. A large proportion of this exported fish finds its way into our neighbouring island of Ceylon.

Here are the exact figures for the quantity of dried fish imported into Ceylon.

I have quoted the figures for a number of years to show the steady increase in the importation of cured fish into Ceylon. These figures are taken from Ferguson's Ceylon Directory.

| Year. | Quantity of cured fish imported into Ceylon. |
|-------|----------------------------------------------|
| 1850  | 35,705 Cwts.                                 |
| 1860  | 55,989 "                                     |
| 1870  | 76,968 "                                     |
| 1880  | 90,397 "                                     |
| 1890  | 173,495 "                                    |
| 1895  | 191,141 "                                    |
| 1900  | 263,260 "                                    |
| 1901  | 295,515 "                                    |

And yet the amount of Leprosy in Ceylon is only 1.8 per 10,000.

Both Ceylon and Minicoy, instead of proving the fish theory, are about the best instances for disproving it. Now, we will pass on to the mainland of India.

The first point that I shall discuss in connection with leprosy in India is the large preponderance of male over female lepers. "In the whole country," says the Census Commissioner (Census of India, 1901, Vol. I, page 144) "there are, according to the present census, 48 male and 17 female lepers in every 10,000 of the population of each sex." Taking the figures for the Madras Presidency we find, that excluding the Native States, we have 13,439 lepers, out of whom 10,113 are males and 3,326 are females. If eating of badly cured fish is the cause of leprosy, why should there be such an excessive preponderance of male lepers? Mr. Hutchinson has a very ingenious explanation to account for this disproportion between

the number of male and female lepers. He suggests that in a good many instances poor families find it difficult to procure the necessary amount of fish to feed the whole family, and then they buy just enough of fish for the male bread-winners of the family, the female members being satisfied with pure vegetable food. This explanation has only one drawback, and that is that it is not supported by facts. On the Malabar coast sardines are cheaper than any vegetable food. You can get there enough sardines for  $\frac{1}{4}$  anna (1 farthing) to feed a family of 2 or 3 persons. Among the poorer classes on the Malabar coast the difficulty is to procure enough rice for the whole family. I know the Malabar coast better than Mr. Hutchinson does, and I know that large number of families on the coast habitually live on rice-water (conjee) and fish. The female members, therefore, do not sacrifice their fish in order to feed the male members better. If they sacrifice anything for that purpose it is their rice, the male members eating the rice and the females drinking the rice-water. And, moreover, according to Mr. Hutchinson the salt fish is more used as a condiment than as the "piece de resistance" of an ordinary meal. There are no families, however poor, who cannot afford a small quantity of salt fish for every member of the family to be used as a condiment with his or her humble share of rice-water. If Mr. Hutchinson had gone out into the bazaar at Ponnani or Calicut and purchased cured fish for a farthing, he would not have put forth this explanation.

That explanation does not apply, at all events, to the west coast of India. There the women eat fish as often as the men do, and in Malabar there are 719 male lepers to 319 female lepers.

This excessive preponderance of male over female lepers, without any corresponding difference in their fish-eating habits, is, in my opinion, one of the most fatal arguments against the fish hypothesis. Let us next take the distribution of leprosy in India and see how it bears out Mr. Hutchinson's conclusions. Speaking on the regional prevalence of leprosy Mr. Hutchinson says:—

A glance at my "leprosy globe" or at any good map will at once claim attention to the fact that over the whole world the regional prevalence of leprosy is chiefly on the sea-coast, on islands, or in river valleys, and the further the enquiry on this matter is pushed, the stronger will this impression become.

Leaving Mr. Hutchinson's leprosy globe alone for a moment, let us listen to what the Indian Census Commissioner has to say on the subject.

"It thus appears" writes Mr. Risley "that the blackest spot in the whole of India is found in a small group of districts in west Bengal, in the worst of which, Bankura, leprosy would seem to be twice as prevalent as it is in any other part of India. Then comes the Goalpara district of Assam, then the western part of Berar and then a tract on the lower spurs of the Himalayas lying partly in the Punjab and partly in the United Provinces."

Of these four localities which, according to the Census Commissioner, are the worst leprosy districts in the whole of India, two of them do not answer Mr. Hutchinson's description of leprosy locality at all. The area in west Bengal, which is the worst leprosy district in India, is an inland district and has a slightly elevated and undulating surface and rests mainly on the laterite. The Himalayan region in the Punjab and United Provinces is mountainous. The other two localities, namely, the Goalpara district and west Berar, are situated in river valleys. The fifth most leprosy district in India is Orissa which is a sea-coast district. Thus of

the 5 localities in India where leprosy is most prevalent, 2 are inland, 2 are in river valleys and 1 is on the sea-coast. The worst district of the whole lot is an inland district. Mr. Hutchinson's leprosy globe wants alteration, at all events, so far as India is concerned.

Having dealt with leprosy in India by sex and by localities let me next discuss it by castes. It is admitted by every one (including Mr. Hutchinson) that leprosy prevails in a larger proportion among the lower and poorer classes in India. Nothing is gained by examining the poor leper at close quarters so far as the fish hypothesis is concerned. In almost every case the poor leper will admit that he has eaten fish and that he is prepared to eat it whenever he can get it. It is when we come to the higher class of purely vegetarian Hindus that controversial questions arise. If it can be proved that an appreciable proportion of purely vegetarian Hindus suffer from leprosy, the bubble of the fish hypothesis will be pricked. Speaking on this Mr. Hutchinson says:—

Over and over again I have been assured that large sections of the Indian population, who yet suffer from leprosy, never eat fish. I have even been told by those whose judgment I hold in much respect that in persisting in applying that hypothesis to India I was going in the face of facts. On the other hand, I have been told by other observers that the statements of Hindus, whether Brahmins or others, to the effect that they had never eaten fish, were not in the least worthy of credit. For a time, however, I may confess, my zeal somewhat waned, for I felt that the difficulties in stating the circumstantial evidence upon which that creed rests were such that it was hopeless to expect to convince others.

Before we discuss the question of clandestine fish eating by Brahmins, let us see the extent of the prevalence of leprosy among Brahmins. According to the Madras Census report (Census of India,

1901, Vol. XV-A, pages 156, 148—154) the prevalence of leprosy among Brahmins in the Madras Presidency is as follows:—

| Class of Brahmins. | Total Brahmin Population. | Number of Lepers. |
|--------------------|---------------------------|-------------------|
| Canarese Brahmin   | 93,683                    | 25                |
| Malayalam do.      | 19,279                    | 4                 |
| Oriya do.          | 127,934                   | 106               |
| Tamil do.          | 415,931                   | 164               |
| Telugu do.         | 436,094                   | 67                |
| Other do.          | 105,990                   | 29                |

Any one can see at a glance at the above table that the proportion of lepers to the total Brahmin population is very small. This can be accounted for in two ways. In the first place the Brahmins as a class constitute the upper classes of Hindu society and escape to a certain extent those diseases which prevail among the poorer and lower classes. And secondly, all high class Hindus who suffer from leprosy are prevented, according to Hindu Law, from inheriting or administering property, and consequently there is a strong incentive for concealing the existence of leprosy. In Mayne on Hindu Law and Usage, page 660, para 551, there is stated "The occurrence of Leprosy is looked upon as the punishment of sin, either in the present or a past existence, and produces an incapacity for inheritance from the moment it is exhibited until it is removed by expiation. Some cases of leprosy are of a mild and curable form, while others are of a virulent and aggravated type, and incurable. It is only the latter form of the malady which causes inability to inherit." With such a

legal disability imposed on lepers it is no wonder that high caste Hindus are anxious to hide the fact that they are suffering from leprosy; or if the existence of the malady in them is discovered to make out that their complaint is only a manifestation of secondary or tertiary syphilis. But in spite of all this we see that in the Government census returns a certain number of Brahmins are returned as lepers. Now, notice how Mr. Hutchinson gets over this fact. He refuses to believe that those Brahmins who suffer from leprosy have not eaten fish. For the simple reason that a certain number of Brahmins had the misfortune to contract leprosy and upset Mr. Hutchinson's pet theory, these miserable Brahmin lepers must also be put down as liars. It is really amusing to see the different manner in which Mr. Hutchinson refers to the two vegetarian communities in India. Speaking of the Jains he says "*the Indian Jain who is a vegetarian almost absolutely escapes leprosy*," whereas speaking about the Brahmins he quotes from Kipling's Kim "where there are no eyes there is no caste." Mr. Hutchinson knows as little of the Jains as he does of the Brahmins. But because the facts from the Jain community are favourable to his theory, the Jain speaks the truth when he says that he is a vegetarian; and the Brahmin does not when he becomes a leper in defiance of Mr. Hutchinson's theory, and his statements like his body become contaminated. This reminds us of a counsel for the plaintiff, in an action, who in addressing a jury said "the plaintiff in this case is a respectable member of the Semetic community who, by purchasing worn-out apparel and selling them at a slightly enhanced value, supports a large family of a wife and several children. And

the defendant is an old clothesman and Jew." But Mr. Hutchinson's prejudices and prepossessions apart, let us discuss the probabilities of the case. That some members of the Brahmin community eat fish and flesh and many other good things of this world no one who knows India will deny. But these are to be found among the English educated and well-to-do members of the Brahmin community. There is no evidence whatever that the Brahmin lepers are to be found exclusively among the English educated. And again, when a Brahmin makes up his mind to violate his caste rules and begins to take animal food, it is not to fish that he takes but to flesh. And even when he eats fish it is fresh fish that he is likely to eat. Even Mr. Hutchinson admits "that there is no risk whatever from sound fish, whether fresh or cured. The danger comes when decomposition commences". Is it likely that a novice, who secretly tries to eat fish, will select decomposed cured fish. Again, let me quote Mr. Hutchinson's own words. Speaking of the taste for dried fish he says "It would appear, however, that it is an acquired or cultivated taste like that for high game." Is it likely that the Brahmin, who wants to eat fish on the quiet and to suspend his caste rules where there are no eyes, will come prepared with a 'cultivated taste' for rotten fish? Even such exceptional cases there may be of perverted tastes. But we have already seen that, according to the census report, there are 395 Brahmin lepers in the southern Presidency alone. And when due allowance is made for the difficulty of recording all cases of leprosy in Brahmins, the total number of Brahmin lepers in this Presidency will be found to be nearer 1000 than 395. And are we to imagine that these 1000 Brahmin gentle-

men cultivated a taste for stinking fish in corners where there were no eyes.

I have known really orthodox men, who have never touched animal food of any kind, contract leprosy. Several other medical men in Madras told Mr. Hutchinson that they knew of such cases and offered to introduce those sufferers to Mr. Hutchinson. But Mr. Hutchinson did not avail himself of that opportunity to investigate those cases. He went to the leper asylum instead, the inmates of which are mostly low caste Hindus and Muhamadans, from any one of whom a confession of having eaten cured fish is exceedingly easy to obtain.

Mr. Hutchinson believes that Roman Catholic Christians are especially liable to be attacked by leprosy because they belong to "a creed which imposes the use of fish on one or two days at least of every week." But why should Mr. Hutchinson suppose that Roman Catholics eat rotten dried fish during their fish fast days? Even the Protestant convert incurs some extra risk of becoming leper, says Mr. Hutchinson because "it removes the prejudice to animal food which to some extent is natural" to the Hindu mind." Mr. Hutchinson knows full well that the lower class Hindus have no more prejudice to animal food than the Christian converts. But let that pass. Let us hear what Mr. Hutchinson has to say on the statistics on which his conclusions are based, and then we shall examine the other side of the picture. In his letter to the *Times*, dated May 25th 1903, Mr. Hutchinson writes:

"My calculation is that the risk to a Catholic convert is twenty fold than of one who remains in the Hindu faith. If I dare trust my figures chiefly—those of the last census—it may possibly in Bengal amount to ninety fold. No one can be more willing

than myself to admit that statistics are often fallacious, but the margin which may be here allowed for error is such that no doubt as to the general bearing of the facts can be felt. Similar conclusions are suggested whether we examine the statistics of Bengal, Bombay, Madras or the Punjab.

Let me now quote "the figures for the Madras Presidency from the Census report of 1901 for the prevalence of leprosy among the native Christians (*i.e.* Indians who have become converts to Christianity) and compare those figures with those of the Jain community—a community which according to Mr. Hutchinson "is purely vegetarian and consequently escapes leprosy altogether". Among native Christians I include both Protestants and Catholics, but I may say that more than half the Christian population of India is Roman Catholic. My figures are taken from the census of India, 1901. Volume XV-A, Madras, pages 154, 156, 157.

Total native Christian population of Madras Presidency. } 998,623.

Total No. of Lepers among the native Christians in this Presidency. } 472.

This gives us a proportion of little over 4 lepers for every 10,000 native Christians.

Now let us have the figures for the Jain community.

Total Jain population in Madras Presidency } 27,485.

Total No. of lepers among the Jains in Madras Presidency } 14.

This gives us a proportion of little over 5 for 10,000 of the Jain population. It may be said that the Jain population of the Madras Presidency is too small to deduce any conclusion from its leprosy figures. But if Mr. Hutchinson can rely on Minicoy with its population of three thousand and odd with its fifteen lepers, I think I am justified in relying on the

leprosy figures of a community which is 9½ times larger than the population of Minicoy.

I am compelled to take my facts chiefly from the Madras Presidency because that is the Presidency that I know best.

Mr. Hutchinson concludes his letter to the *Times* of May 25, 1903 (from which I have quoted a passage above) with a strong appeal for the abolition of the salt tax in India. In that appeal I cordially join. But not for the reasons given by Mr. Hutchinson. His objections to the salt tax I shall give in his own words:—Says Mr. Hutchinson:—

Next, Sir, let me entreat your powerful aid in the endeavour to secure the prompt and total abolition of the salt tax throughout our Indian Empire. It would be difficult to devise any tax more injurious to the welfare of that vast community. Give the Hindu good and cheap salt and he will cure his fish well and render it a wholesome article of diet instead of a poison. No doubt but that the decrease in the prevalence of leprosy which has recently occurred in most parts of India has been largely due to the remission of this tax by an enlightened Government in the case of the large fish curing establishments. What is now wanted is its total abolition. So that salt may be cheap in the homes of the peasant and the fisherman.

From the above quotation I understand that it is Mr. Hutchinson's belief that if plenty of salt is used in curing fish, it becomes less instrumental in producing leprosy. In the administration report of the Salt Revenue Department of Madras for the year 1901-1902 (I take that year because that was the census year and figures for population could be taken direct from the census report without estimating) there is published a table (Appendix O, page 47) in which the amount of Salt used in curing one maund of fish in the different localities of the Madras Presidency is given. I shall give those figures in tabular form, together with the percentage of

leprosy in those districts per 10,000 of the population.

| Name of the locality (Sub-division), | Quantity of salt issued for each maund weight of fish. | Number of lepers in the locality for 10,000 of the population. |
|--------------------------------------|--------------------------------------------------------|----------------------------------------------------------------|
| Chicacole                            | 6.97 lbs                                               | 4.98                                                           |
| Cocanada                             | 10.17 lbs                                              | 4.8                                                            |
| Masulipatam                          | 12.89 lbs                                              | 2.4                                                            |
| Nellore                              | 10.42                                                  | 2.5                                                            |
| Chingleput                           | 9.89                                                   | 4.5                                                            |
| Cuddalore                            | 10.21                                                  | 5.6                                                            |
| Negapatam                            | 12.19                                                  | 8.6                                                            |
| Tinnevely                            | 12.26                                                  | 2.6                                                            |
| Calicut                              | 11.25                                                  | 4.39                                                           |

A glance at the above table will show that the prevalence of leprosy in any locality is not affected by the quantity of salt that is used in curing the fish consumed in that locality. In Cocanada, Nellore and Cuddalore they use 10 lbs. of salt per maund of fish to be cured. And yet the leprosy figures are 4, 2, & 5 respectively, for these divisions. In Chicacole they use only 6 lbs. of salt per maund of fish, whereas in Calicut they use 11 lbs. This difference in the quantity of salt used makes no difference in the number of lepers as in both localities there are a little over 4 lepers per 10,000 of the population. I won't elaborate this point further, but leave the figures to speak for themselves. I want to allude to one other point contained in the passage from Mr. Hutchinson's letter above quoted. Mr. Hutchinson says "no doubt but that the decrease in the prevalence of leprosy which has recently occurred in most parts of India, &c., &c."

Has there been a decrease in the prevalence of leprosy in most parts of India? I shall let Mr. Hutchinson answer that question himself. In a paper read by Mr. Hutchinson before the standing

committee on leprosy on November 26th, 1902, Mr. Hutchinson said,—

We have, however, in this fact of almost stationary prevalence, one which merits our most careful consideration. There is, possibly, no large district throughout the length and breadth of our great Indian Empire, concerning which it can be proved that leprosy is really unknown. There are many in which it is almost so, and not a few in which its ascertained ratio to the population is not greater than one in twenty thousand. It is to be noted here that this stationary prevalence is not only a fact for India as a whole, but with a few exceptions for every province, district or town. The Exceptions are for the most part, easily explained, and go to confirm the rule rather than otherwise.

Please note the words that this "*stationary prevalence is not only a fact for India as a whole, but, with few exceptions, for every province, district and town.*"

Now, the prevalence of leprosy may either have decreased as Mr. Hutchinson stated in his letter to the *Times*, or it may have remained stationary as he stated in his paper before the standing committee of leprosy. It could not possibly have done both at the same time.

As a practical outcome of the fish hypothesis all that Mr. Hutchinson wants is "*a Government inspection of fish factories with a view to enforcing efficient methods of curing.*" Well, I may tell Mr. Hutchinson that is exactly what we have got here in India. We have not only Government inspection here, but we have also Government monopoly, and yet we have our lepers still with us.

I do not intend to discuss the question of contagion or heredity in connection with the etiology of leprosy in this paper. I only wanted to point out the fallacies of the fish hypothesis. "There is no other theory in the field" says Mr. Hutchinson. I would rather have no hypothesis than have a wrong hypothesis.

T. M. N.

## Cases and Comments.

### Use of Nitrate of Silver in eye affections

BY

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SILVER Nitrate (Argenti Nitras) is a very valuable medicine in many inflammations of the eye. Its action depends on its caustic and astringent action on mucous membranes according to the strength of the solution of the salt employed. While being a very useful remedy in careful and experienced hands, it may lead to untoward and unpleasant symptoms when used carelessly by men who have not much experience in its use as will be seen from the notes of cases appended below. I shall first mention a few facts which should be borne in mind in using this substance. There are some persons whose eyes are so delicate that the weakest solution of this salt will cause a good deal of irritation in the eyes with pain and swelling of lids. Lately I had two cases of conjunctivitis in whom a solution of 1 gr. of silver nitrate to 1 oz. of distilled water produced such irritation. Again the strength should vary considerably according to the nature of the case. Usually in ordinary inflammations a solution of (3 to 5 gr. to 1 oz.) will be found sufficient. In cases where there is a purulent discharge the strength may be increased to 10 grs. to 1 oz. A greater strength than this is rarely required. To apply a solution of this salt, the lid or lids affected should be everted and the solution brushed over the parts. Then the silver salt coagulates the albumen and forms a thin white film. The superficial portion of the silver solution

should be washed away with ordinary water, or better still salt and water (5 grs. to 1 oz.). Great care should be taken to see that the solution does not touch the cornea as it very often gives rise to a good deal of irritation. If the solution is allowed to remain in contact with the ocular conjunctiva, or if the parts are not properly washed out after passing the solution, the conjunctiva gets pigmented and presents an unsightly bluish appearance.

It is always best to use the nitrate of silver solution with a camel-hair brush. When this is not feasible, and only then a very weak solution of the salt ( $\frac{1}{2}$  gr. to 1 oz.) has been recommended to be dropped into the affected eye. The only exception to this is in new-born babies in whom a few drops of a 2 p.c. solution has been recommended to be dropped into the eye soon after to prevent ophthalmia neonatorum. Nitrate of silver solution when properly applied to the eyes generally causes a good deal of smarting and unpleasantness in the eyes, which continues for about 15 to 30 minutes. To prevent or mitigate this suffering a few drops of a 5 p.c. solution of cocain hydrochlorate may first be put into the eyes and the nitrate of silver solution applied after 3 minutes. A good many medical men must have seen a large number of cases of pigmentation of conjunctiva as a result of careless use of nitrate of silver solution in granular ophthalmia.

I shall now give notes of two cases of keratitis caused by nitrate of silver.

Case I:—A healthy Brahmin child aged 11 months, was brought to me with the following history. About the beginning of May last the child got a bad

sore-eye (conjunctivitis). The eyes were red and inflamed. The child could not look at bright light (there was photophobia). A few home remedies as alum, aloes, etc. were first tried for 2 days. Finding no improvement the child's parents grew rather anxious and got a medical man to examine the eyes and treat them. He tried sulphate of zinc, boric acid, alum. Finding no change he tried mild solution of nitrate of silver. This he brushed over the inner surface of both lids, morning and evening, for a day, and seeing that the inflammation persisted he dropped into the eyes a few drops of a strong solution of nitrate (20 grs. to 1 oz.) into both eyes, twice a day for two days. He then found that the inflammation had increased and the eyelids were considerably swollen. The child could not open its eyes; on freely opening the lids the corneas were found opaque. The parents were advised to take the child to Madras for treatment. When the child was examined by me a few days after, the conjunctiva were very red and inflamed. The cornea was found to be rough, opaque and devoid of lustre. There was, in other words, erosion of the superficial layers of the cornea and keratitis.

There was good projection of light, and that was all. There was no vision. After careful and steady treatment for nearly 6 months the child got well and recovered its full sight.

Case II:—A young Hindu, aged 35 years, came to me some time back with the following history: He was for over a year suffering from granular ophthalmia and as a result of that photophobia and lachrymation. He placed himself under treatment for the same. Sulphate of copper solution was first applied to inner surface of the lids for 2 days. This pro-



duced some irritation and inflammation in the right eye. For this a few drops of nitrate of silver solution were put into the eyes once a day for 2 days. This, instead of subsiding the inflammation, increased it considerably. The cornea in that eye (right) became white; the lids were swollen and inflamed. There was considerable photophobia, various soothing remedies were applied, but to no effect. The inflammation spread from the cornea to the deeper parts of the eye. When I examined the eye two weeks after the application of the nitrate of silver, there was granular ophthalmia in both eyes. In the right eye there was intense photophobia. The patient could not stand the weakest light. The eyelids were much swollen and painful. The conjunctiva were very red and inflamed. There was a good deal of ciliary congestion. He could not stand even the slightest pressure over the eye-ball. There was suppurative keratitis. The tension in the eye was less than normal, vision was limited to perception of light. Projection of light was not very good. The patient's health was otherwise very good.

\* I have cited the above two cases to show what an injudicious use of nitrate of silver may lead to.

### Ear Cough.

The following case illustrates one of the manifestations of Aural reflexes, namely, Ear cough.

Last December I was consulted by a young Hindu patient, aged 22 years, for persistent cough of several months' duration. He had been treated both by qualified doctors and native *vydians*,

but the cough did not yield. I made a careful examination of his lungs, larynx, pharynx and nose, but failed to detect anything to account for the cough. When I looked into the ears I found both ears filled with the hard masses of cerumen. I removed them with an ear-scoop and sent the patient away and asked him to come back to me in a couple of days' time for another examination of the respiratory organs. He came back to me 3 days afterwards with the statement that the cough had entirely stopped. Then I came to the conclusion that it was a case of reflex ear cough. I sent the patient away with instructions to use some alkaline ear drops, which I presented, for 3 or 4 days every month, to prevent the accumulation of cerumen again.

The mechanism of ear cough is interesting and will be plain to any one who takes the trouble to study the nervous connections of the external and middle ear.

The external meatus derives its nerve supply from the auriculo-temporal branch of the third division of the fifth nerve and from the auricular branch of the vagus. The latter (Arnold's nerve) arises from the ganglion of the root of the Pneumogastric and receiving a connecting filament from the petrous ganglion of the glossopharyngeal, passes through a narrow canal in the substance of the temporal bone, crossing on its way the Fallopian aqueduct and being connected with the facial nerve by ascending and descending branches of communication. Emerging from the bone in the interval between the mastoid process and the external auditory meatus, Arnold's nerve ends by supplying the integument on the posterior aspect of the ear, sending a twig to join the posterior auricular branch of the facial. It is

important, in considering aural reflexes, to remember that Arnold's nerve supplies the skin of the osseous meatus, and that which covers the lower part of the membrana Tympani.

The auriculo-temporal nerve supplies the skin lining the meatus by two filaments and also gives two to the integuments over the upper and forepart of the pinna; the latter gain the interior of the meatus by passing between the osseous and cartilaginous portions of the canal. The two former twigs supply the upper and greater part of the membrane. Besides these, the auriculo-temporal has the following distribution:—(1) one or two strong branches of communication to the temporo-facial nerve; (2) filaments which enter the posterior aspect of the temporo-maxillary joint; (3) twigs to the parotid gland; (4) terminal filaments to the scalp.

The middle ear is rich in nerves, for, besides those which supply the parts of the tympanum itself, there are several which merely serve to connect nerves of different origin. The lining membrane is supplied from the tympanic plexus, which is formed of (1) Jacobson's branch of the glossopharyngeal, (2) the small deep petrosal (connecting Jacobson's nerve with the carotid plexus), (3) a branch which joins the great superficial petrosal, (4) the small superficial petrosal passing to the otic ganglion. In the plexus are numerous ganglion cells. Jacobson's (tympanic) nerve arises from the petrous ganglion of the glossopharyngeal and goes to join the otic ganglion; besides the connections mentioned it is also joined by a branch from the geniculate ganglion of the facial, whilst in the tympanum it supplies (1) the mucous membrane of the tympanum,

(2) the lining membrane of the mastoid cells, (3) the mucous membrane of the Eustachian tube.

From the above it will be seen that the nerve supply of the ear is connected with the vagus, the glosso-pharyngeal, the facial, the sympathetic and the trigeminal nerves. The mechanism of ear cough is believed to be the result of stimulants applied to the auricular branch of the vagus being conducted to the laryngeal branches of the same nerve. The stimulant is carried to the floor of the fourth ventricle when the roots of the vagus and the glosso-pharyngeal nerves are in close connection. The stimulation being mistaken for laryngeal irritation cough is the result.

It is well to bear in mind that ear cough is not the only manifestation of aural reflexes. Every otologist knows how patients become faint whilst the ear is being syringed. This is the cardiac reflex. There are also reflexes of taste, gastric reflexes, epileptic form convulsions, hiccough, and the reflex effects of ear disease on the oculo-motor apparatus. Cases have been recorded by several otologists illustrative of all the above-named varieties of aural reflexes.

T. M. N.

### A case of cerebral embolism.

M. R., a young Hindu student, about 16 years of age, at Bellary, while playing tennis in March 1903, suddenly got blind and could not see anything at all. He was removed home and was semi-conscious all through that night. The District Sur-



geon, who was called in, pronounced it to be a case of sunstroke. Ice pack to head and a blister at the back of the head was applied. The boy was kept in bed for about a fortnight at the end of which period he was sufficiently recovered to get up and walk, but when he walked he felt "a sensation in the head as if he would fall down." After this attack he used to feel giddy very often and used to get exhausted at the slightest exertion. He continued till September 1903 like this without the development of any other symptoms. On the 8th September 1903, he used a pinch of tobacco snuff. Soon after the use of this pinch of snuff he felt very giddy and was put to bed and the Assistant Surgeon was sent for. Very soon he noticed that he could not move the right side of his body, his right arm and right leg. He also became unable to speak. The District Surgeon saw him in the evening and found him with Hemiplegia and Hemianaesthesia on the right side with aphasia. The patient was also unconscious. Ice pack to head was applied and also a Seton to the nape of the neck which was kept on for a month. About 10 days after the onset of the symptoms he began to recover consciousness. A few days after that his power of speech came back gradually. About 20 days after the attack galvanism to the affected side was applied. This was continued for about 2 months. By that time he regained his powers of speech entirely, but was still weak in his right arm and leg.

He consulted me in February last, when I found that his powers of speech were quite normal. There was no facial paralysis. There was considerable loss of power in the right arm and in walking he dragged the right leg. There

was a small amount of hemianesthesia of the right side. There was no wasting of muscles. He still complained of great general weakness. He was under my treatment for over a month. There has been steady but slow improvement in the condition of his leg and arm. He has now returned to Bellary.

The interesting point in this case is the diagnosis of the nature and locality of the lesion. His first attack of March 1903 was most probably sunstroke. But the attack of September 1903, which brought on the Hemiplegia was something different.

In a young patient who gets an apoplectic attack, an examination of the heart will very often give the clue to its cause. In this case, when I examined the patient's heart, I detected a well marked mitral pre-systolic murmur indicating mitral stenosis. "Mitral Stenosis," says Sir William Broadbent, "is the valvular affection, which, independently of inflammation or ulceration, most frequently gives rise to arterial embolism." The presence of mitral stenosis at once suggested to me that the lesion was embolism. The age of the patient also was in favour of embolism rather than of hæmorrhage. The gradual onset of the symptoms is also in favour of embolism. Then, as to the locality. The association of aphasia with hemiplegia indicates that the lesion affected Broca's convolution as well as the corpus striatum. And the only artery the obstruction which will affect both these structures is the Sylvian artery. The case was, therefore, one of embolism of the Sylvian artery.

T. M. N.

## THE ANTISEPTIC

### June, 1904.

#### The dangers of Vaccination in Madras.

Some days ago one of the local newspapers published the facts connected with the death of a student of the Madras Christian College from tetanus, nearly twenty days after he had been vaccinated. It was stated that subsequent to the vaccination the student felt some pain, to relieve which he used some home remedies in addition to the treatment he underwent at the Smithfield Market Vaccine Depot. When his condition grew worse he was taken to the General Hospital where he died. A *post mortem* was held and tetanus was found to be the cause of death. After the inquest the jury returned "a verdict of death from tetanus, brought about by the effects of vaccination." A couple of days after this, one of the Medical officers of the General Hospital wrote to the paper which published the above facts and stated that the cause of tetanus in the case in question was not vaccination, but the home remedies which were applied. The home remedies applied contained burned cow-dung, probably mixed with earth, and as the tetanus bacillus generally inhabits earth there was a strong presumption that that was the channel by which the tetanus bacillus got into the

Christian College student. And, further, the Medical Officer stated, that the student died 20 days after vaccination, and as that was an exceptionally long incubation period for tetanus in a hot climate like that of Madras, it was highly improbable that vaccination was the cause of tetanus. We quite agree with the conclusions arrived at by the Medical Officer, but at the same time are of opinion that some investigation as to the conditions under which vaccination is performed in Madras ought to be made in the interests of public health and public safety. Deaths from vaccination are very rare, in a country like India where the people are both ignorant and apathetic, public attention is not easily drawn to defective methods of vaccination or sanitation. There must be many medical men in Madras, who have seen unpleasant symptoms developed after vaccination by some of the public vaccinators. We have ourselves seen some such cases, and only a fortnight ago a medical practitioner told us of a case which had come under his observation. We have no desire to publish the details of such cases. And we are as anxious as the medical officer from the General Hospital who wrote and proved the innocence of vaccination and the guilt of the home remedy to encourage vaccination among the masses of the people of India. But we feel that the best way to encourage vaccination is to reduce its dangers to a minimum, by securing efficient

vaccinators and using good and pure vaccine lymph. We believe that the vaccine lymph used in Madras is good; that is more than what we can say for the vaccinators. Ever since we came to know that laymen without any medical training whatever are employed as vaccinators not only out in the districts, but in the Presidency town also, where vaccination is compulsory, our professional conscience has been in revolt. We take this opportunity of recording our most emphatic protest against vaccination by non-medical men. Vaccination is a small surgical operation which is done by means of a cutting or a pointed instrument. To entrust such an operation to the unskilled hands of a layman is an exceedingly dangerous and unwise act. And what sort of men are chosen to perform this delicate operation? Men who have very little education and who are satisfied with a pay of Rs. 7 to begin with. One can easily guess the state of cleanliness of the apparel which this budding operator who earns Rs. 7 a month can afford to wear. His coat sleeves offer a standing invitation to every conceivable kind of pathogenic organism to come and take up its permanent quarters without any fear of interference from its landlord--the seven-rupee vaccinators. With qualified medical men as public vaccinators the conscience of a certain portion of the British public revolts against vaccination. And within recent years the British Parlia-

ment has recognized by its Act "the conscientious objector" as an integral part of the British public. While out here with vaccinators with no medical or surgical training, whose ideas of asepsis are of the most elementary description we have a Compulsory Vaccination Act without any option of raising a conscientious objection. We are not enamoured of the conscientious objector. We rather think that he is a nuisance. But the unqualified vaccinator armed with the scalpel or the needle is positively dangerous. Although the vaccination department is nominally under the Health Officer of the Municipality we understand that it is really managed by an official—we don't know his exact designation—who is not a medical man. We are of opinion that every vaccine depot in Madras ought to be under the management of a medical man of the standing and qualifications of an Assistant Surgeon. The vaccinators under him ought to have at least the Hospital Assistant's qualification. We are sure that the whole Medical profession will join us in our protest against a system which would not be tolerated even for a single hour in any civilized country in the world.

#### Plague Regulations.

The Health Department of the Madras Municipality is taking active measures to prevent the entrance of Plague into Madras. We are sure that it will have the hearty co-operation of

every medical man in this city in its relentless crusade against plague. We received a few days ago a reminder from the Health Department of the Municipal Office, which consisted of a quotation of a para. from section 2 of the Madras Plague Regulations and Rules for the city of Madras. The quotation runs as follows:—

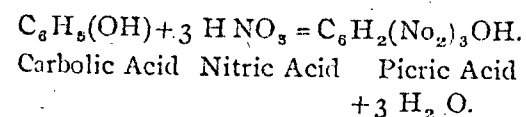
"Every medical practitioner who becomes cognizant of the occurrence in his house or in any other public or private dwelling or place within the limits of the Municipality of any case of plague, or of fever with glandular swellings, and in the case of persons who live within an area that has been notified as infected, or who have been in any way exposed to plague infection, of acute affections of the lung, of convulsions in children, abortion in women and sudden death in the aged, shall be bound to give information of the same with the least practicable delay, to the Health Officer or a Sanitary Inspector of the Municipality." We are thankful for the reminder and faithfully promise to give all the information we can, which will be of use to the Health Officer. But we really do not see the point of our giving information to a Sanitary Inspector about the occurrence of convulsions in children, abortion in women and sudden death in the aged. Are we to understand that the Sanitary Inspector, who is not a medical man, will give us a clinical lecture on the various

causes of convulsions in children and teach us how to diagnose the cause of sudden death in the aged? Pleasant prospect for us.

#### Don't Forget your Chemistry.

Dr. Fairbrother reported at a recent meeting of the St. Louis Medical Society that while mixing nitric acid and carbolic acid in a test tube *to secure their combined effect* (the italics are ours) an explosion had taken place naturally. It would have been a wonder if the explosion had not taken place. But a writer in an American medical journal caps this with an account of one of his own cases. It seems that the writer in the American medical journal wanted to cauterize a large chancroid with strong nitric acid. But before the application of the nitric acid the irregular surface of the sore was soaked with carbolic acid in order to obtain its æsthetic effect. When the nitric acid was applied, there was a sudden puff, the patient jumped back and for a moment the doctor felt frightened. The chancroid was found covered with a brownish fluid, of a tarry odour. This writer informs us that he has since consulted a book on Chemistry and made the discovery that the result of the action of nitric and carbolic acid is picric acid. "And since this discovery," says the American doctor, "we have preferred to use picric acid itself rather than to prepare it synthetically on a patient's penis." We

congratulate our American colleague on his decision not to use his patient's penis as a chemical laboratory. However capable the penis may be for the performance of its own functions in the human organism it is ill-adapted to be the scene of such violent chemical reactions as result by the mixture of strong Nitric Acid and Carbolic Acid. When Carbolic Acid is added gradually to concentrated Nitric Acid the action is very vigorous. You get large quantities of nitrous fumes given off and a resinous mass is left which, when boiled with water, gives a yellow solution from which Picric Acid crystallises out. Picric Acid is tri-nitrophenol and the reaction may be represented thus:—



The above is the equation for the ideal reaction, but as a rule, as happened in the experiment in the American gentleman's penis, a large portion of Carbolic acid gets converted into resinous by products (not properly examined) by Nitric acid which itself breaks down and gives off nitrous fumes.

It is fashionable among medical students to forget their Chemistry after the first professional examination is passed. That it is an unwise and a dangerous thing to do is exemplified by the above two instances.

## Our Contemporaries

(From The Journal of Obstetrics and Gynaecology)

### Chronic Inversion of Uterus in a woman aged 55: Hysterectomy. Recovery.

By A. J. STURMER, Lt.-Colonel, I. M. S.,  
M. R. C. S., L. R. C. P.,

Superintendent, Government Maternity Hospital,  
Madras.

M—, Hindu woman, aged about 55, married when young, one child aged 28, was admitted into the Government Maternity Hospital, Madras, on November 11th, 1902.

Only once pregnant, the labour was easy and natural; no flooding. Complaints of a severe pain in the lower abdomen, and of a mass filling up the vagina, and also of passing blood-stained fluid and occasionally blood from the vagina. Duration of symptoms two years; but the symptoms, the pain especially, have only been severe for the last three months. States she does not remember when she first noticed the mass in the vagina; it has been there for a long time, may be some years. The mass in no way inconvenienced her and she did not take any notice of it. There was no bleeding at first and no pain. For the last three or four months she has passed blood-stained fluid and occasionally blood *per vaginam*, but the amount lost daily is not much. She has now severe pain and the pain has prevented her from doing any work for the past three months; sleep is disturbed and she has grown thinner.

*Menstruation* first established about the 13th year of age. Regular; no pain; no clots or membranes; lasted for three days; last period about 12 years ago.

*Leucorrhoea* present since complaint began.

*Urine.* Normal, no difficulty in micturition.

*Appetite* good.

*Bowels* regular.

*Previous illnesses.* Always enjoyed good health before the commencement of the present complaint.

*Present state.* Expression of pain and complaints of pain all day; sleep broken and disturbed. Is not anæmic. No oedema. Hair of head quite grey; teeth worn down, second lower molars lost; tongue moist and slightly coated. Bowels and temperature regular and normal. Pulse 80, fairly full and strong. Lungs and heart healthy.

*P. V.* A pear-shaped globular tumour filling up the vagina; finger cannot be passed into any opening; behind are some apparently polypoid masses. Tumour seems to be continuous with the vagina all round. Red discharge on examining finger.

*Speculum.* On pulling down the tumour with a pair of volsella forceps the vagina is seen to be continuous with the tumour all round the top; no probe or sound can be passed upwards; the polypoid masses are pieces of vaginal tissue. Handling the tumour causes pain, but the bleeding is slight. The uterus is absent from its proper place.

Nov. 11th. Aveling's repository applied after disinfecting vagina, which is small, senile changes having evidently taken place. Temperature rose to 102° on the 22nd, and was 100° on the 23rd. On the 22nd she was placed on the table, and the repository removed; the uterus showed no signs of reduction. At the fundus, where the chief pressure of the repository had been, was a hole, which admitted the finger, and on exploring the smooth peritoneum could be felt in the inverted mass. The repository was not replaced, the parts were kept clean, there was very little discharge, and she was kept at rest.

On December 2nd, vaginal hysterectomy was performed. The vagina was much contracted and incisions had to be made into the posterior wall down to the perineum, and on either side, to allow of room for manipulation. On opening Douglas's pouch the finger could at once be passed into the inverted uterus. The vessels were first clamped and then tied, but they appeared to be very small and to have undergone atrophic changes, hence only a very little blood was lost, and that came from the incised vagina.

*Parts removed* consisted of the inverted uterus. In the cup were portions of the tubes which had become adherent, and other tissues which looked like the round ligaments. No ovary was seen, but a body like very small ovary was felt on the right side; no attempt was made to demonstrate it.

The subsequent history was uneventful, and she was discharged on the 27th December, 1902.

*Remarks.* Inversion of the uterus is not a common complaint, and this is only the fourth case I have seen. In the other three instances of this condition the patients were under 40 years of age and all were markedly anæmic. The ordinary native coolie has no idea of time and can never give her age, and the history is not to be relied on. There can be no doubt in this case that the patient had passed the menopause: the senile changes shown in the vagina and in vessels point to it, and the general appearance was that of a woman over 50 years of age. When then did the inversion take place? It can hardly be credited that she went about with this inversion for 28 years—the age of her only child. Inversion, as far as my limited experience goes, produces very grave anæmia, but this patient certainly was not anæmic. It might be suggested that the displacement was produced in this instance by a polypus, which became detached by sloughing, and left the uterus inverted. But a complication

of that kind generally causes hæmorrhage, and the history of this case was against the probability of inversion caused by a polypus. There was only blood-stained fluid and occasionally a little blood for the past two years. The senile changes that had taken place may have prevented much metrorrhagia, and this seems to be the most plausible theory of explaining the inversion. It seems most unlikely that the inversion could have been caused after the menopause by an irregular contraction of the uterus, and I cannot believe that she had it before the change of life.

Hart and Barbour in their *Manual of Gynecology* state that "toleration of the condition" is also rare, but cases have been reported in which the uterus has become reconciled to its new position and the patient has recovered perfect health. Supposing the inversion to have occurred after her first and only labour, why should the symptoms have occurred only two years before she sought admission, and ten years after her last period?

In the Journal for November, 1902, Mr. Taylor details a case of inversion, and in his remarks states "this is the only case of absolutely complete inversion that I have ever seen or known of." In the case now reported the vagina was an integral part of the inversion, the cervix had practically disappeared from senile atrophy, and I particularly noted that no collar or rim of cervix could be demonstrated round the tumour. The conditions of the two patients are, however, different. Mr. Taylor's patient was aged 33, whereas mine was over 50 years.

(From "the Lancet.")

## A CLINICAL LECTURE

ON

### The treatment of diabetes mellitus.

Delivered at the Manchester Royal Infirmary on  
July 8th, 1903,

By R. T. WILLIAMSON, M. D.,

F. R. C. P., LOND.,

Physician to the Ancoats Hospital and Assistant  
Lecturer on Medicine, Owen's College, Manchester.

GENTLEMEN,—In the milder forms of diabetes mellitus medical treatment is often followed by great improvement; but in the severe forms, especially in young patients, treatment is usually very unsatisfactory. In the present state of knowledge there is no single method of treatment suitable for all cases of diabetes, each case should be treated according to the form of the disease. In trying to estimate the value of any method of treatment it is important to bear in mind that in some of the mildest cases the sugar excretion occasionally ceases temporarily, apart from the influence of any drug or special diet. The occurrence of complications, such as phthisis or nephritis, may also cause a diminution of the sugar excretion, which is liable to be attributed to the medical treatment. Further, it is important to distinguish between the results due to dietetic treatment and those due to drugs.

For therapeutical purposes three forms of diabetes mellitus may be recognised—(1) the *mildest* form, in which the sugar excretion ceases when a rigid diet of nitrogenous and fatty food is given; (2) cases of *medium severity* in which the sugar excretion does not cease when a rigid diet is given (in these two forms the urine gives no reaction with perchloride of iron); and (3) the *most severe form*, in which the urine gives a brownish-

red coloration with perchloride of iron and in which a rigid diet also fails to arrest the sugar excretion.

In conducting the treatment of a case of diabetes it is of importance to distinguish the form of the disease; also, the lungs should be examined for signs of phthisis, the heart for signs of dilation or other affections (especially in elderly patients), and indications of nephritis or other complications should be carefully noted. The weight should be taken periodically and the amount of urine and the sugar excretion should be ascertained daily in hospital practice and once a week or at longer intervals in private practice. Also, the condition of the bowels should be noted.

In making accurate observations on the dietetic treatment of diabetic hospital patients the total value of the food in calories is often calculated. From this the value in calories of the sugar lost in the urine is subtracted; the remainder should not be less than 2,300 calories. This is the value in calories of the food required daily by a healthy man.

In the forms of diabetes in which the urine gives no reaction with perchloride of iron the action of a rigid diet should be tried. In the most severe forms of diabetes, in which the urine gives a well-marked reaction with perchloride of iron, the effects of a restricted diet may also be tried; but I do not think it is desirable to cut off *all* of the carbohydrates in such cases for a long period for the purpose of trying the action of an absolutely rigid diet.

The *dietetic treatment* of diabetes should vary according to the form of the disease. In the *mildest forms* a rigid diet of nitrogenous and fatty food causes the sugar excretion to cease. In some cases after this rigid diet has been continued for a short time the patient can take a small amount of

carbohydrate food in the form of bread without the sugar returning in the urine. In such cases the amount of bread should be steadily increased until the maximum amount is reached which the patient can tolerate without the glycosuria returning. The diet which is *just sufficient* to arrest the sugar excretion is that which should be prescribed. In other cases the addition of a small amount of bread or other carbohydrate to the rigid diet always causes sugar to reappear in the urine. But after the patient has had a rigid diet for many weeks or months he often refuses to continue it longer; in other cases, it may be found that he is losing weight markedly. It may then be necessary to relax the diet, especially as regards bread, and we must be content if, by a moderate restriction of the carbohydrates, we can keep the daily excretion of sugar down to about 500 grains. In the *second form* the most rigid diet does not arrest the sugar excretion, but the urine gives no reaction with perchloride of iron. A strict diet may be tried for a time, but if the patient rapidly loses weight and the general condition becomes worse, the addition of a small amount of carbohydrate food in the form of bread may be desirable. In the third or *most severe form*, in which the urine gives a dark brownish-red colouration with perchloride of iron, I believe a very rigid diet is sometimes injurious and that it is better to allow a small amount of carbohydrate food in the form of bread. In cases of the second and third forms, when an absolutely rigid diet is not desirable, all articles of diet containing sugar should, of course, be avoided and the starch-containing food always greatly diminished. (It is only right to mention that some English physicians still hold that a very rigid diet is advisable in all forms of diabetes.)

As regards the separate articles of diet, most kinds of nitrogenous animal food and fatty food may be allowed in diabetes. Of

the carbohydrates starch is less injurious than sugar. (The suitable articles of diet were indicated in the diet tables shown at the lecture.) Bread is the article of diet which causes the greatest difficulty in the dietetic treatment of diabetes since it contains so much carbohydrate (49 per cent.). Most diabetic patients require some form of bread and various substitutes for white bread have been employed. Very many of these are almost useless on account of the large amount of starch which they contain or on account of their disagreeable taste or high price. In some cases it is best to allow a very small amount of ordinary white bread. In other cases, where a rigid diet is desirable it is better to replace a portion, or the whole, of the ordinary bread by some suitable bread substitutes. Home-made bread substitutes are to be preferred for many reasons, and it is always best to test the preparations with a few drops of iodine solution in order to form a rough estimate as to whether they are loaded with starch or not. The bread substitutes which I have found most trustworthy are protene bread, casoid and casoid meal bread, and aleuronat and cocoanut biscuits. Protene is an albuminous substance separated from milk; bread can be prepared from it according to the following directions:—

Four ounces of No. 2 Protene,<sup>1</sup> two ounces of butter, two eggs. Beat all together thoroughly. Divide so as to form eight small cobs. Bake in oven.

This bread is practically free from starch and has often a marked action in diminishing the sugar excretion. Thus in a case of mild form of diabetes at the Ancoats Hospital in which the sugar excretion, apart from treatment, had been stationary for a long period, the following were the results of replacing white bread by protene bread:—

<sup>1</sup> No. 2 Protene can be obtained from the Protene Co., 86, Welbeck Street, London, W.

|                                                                              | Average daily excretion of sugar. |
|------------------------------------------------------------------------------|-----------------------------------|
| Rigid diabetic diet + eight ounces of white bread daily for seven days ...   | 1815 grains.                      |
| Rigid diabetic diet + eight ounces of protege bread daily for seven days ... | 694 „                             |
| Rigid diabetic diet + eight ounces of white bread daily for seven days ...   | 1780 „                            |
| No drugs were taken during the period of observation.                        |                                   |

Two other forms of diabetic bread are very useful—casoid bread and casoid meal bread.<sup>2</sup> Both are practically free from starch and sugar and are thoroughly reliable. These preparations are composed chiefly of casein. Chemical analysis (by E. J. Parry, B. Sc.) shows that the casoid meal bread contains 38.9 per cent. of proteids and 13.9 per cent. of fat. Some diabetic patients prefer the protene bread, some the casoid meal bread, and many like the casoid bread best. I think the patient may be safely allowed to take the one he likes best or to combine them in any way as all three specimens are quite satisfactory.

Aleuronat<sup>3</sup> and cocoanut cakes are also of service. They may be prepared in the following manner. Two ounces of desiccated cocoanut powder are mixed with a little water containing a small quantity of German yeast. The mass is then formed into a paste and this is kept for half an hour or longer in a warm place. The small amount of sugar contained in the cocoanut is almost entirely decomposed by the fermentation produced by the yeast and the cocoanut paste becomes spongy. Two ounces of aleuronat, one egg beaten up, and a small

<sup>2</sup> Prepared by Messrs. Callard and Co., Regent street, London.

<sup>3</sup> Aleuronat is a vegetable albumin, first recommended for diabetic patients by Professor W. Ebstein. Recently he has employed other forms of vegetable albumin, ergon, roborat (recommended by Loewy and Pickardt), and casein (recommended by Schreiber). See Handbuch der praktischen Medizin: Ebstein and Schwalbe. Stuttgart, 1911.

quantity of water, in which a little saccharin or saxin has been dissolved, are now added to the cocoanut and the whole is well mixed until a paste is formed. This is spread out on a tin and divided into cakes which are baked for 20 or 30 minutes. In a case of diabetes of medium severity I found that the daily sugar excretion was reduced by 2000 grains and the daily amount of urine by 80 ounces when aleuronat and cocoanut biscuits were given in place of white bread. Almond or cocoanut biscuits can also be prepared according to the directions just given, aleuronat being omitted and only cocoanut powder or almond flour being used.

Milk contains about 4 per cent. of objectionable milk sugar, but it also contains a large percentage of valuable fat and albumin. Cream contains less milk sugar and about seven times the amount of fat; it may be allowed in all forms of diabetes. In some cases of diabetes ordinary milk does not increase the sugar excretion; in such cases it may be allowed freely. In other cases, milk increases the sugar in the urine and in these cases a substitute is desirable. I have prepared an artificial milk, practically free from sugar, which may be taken in unlimited quantities by diabetic patients in all forms of the disease. Four tablespoonfuls of cream are added to a pint of water and well mixed. The mixture is allowed to stand in a cool place. At the end of 12 hours the fat of the cream will have floated to the surface. (It can be skimmed off with a teaspoon and on examination it will be found practically free from milk sugar which will remain dissolved in the pint of water.) The cream fat is skimmed off from the surface of the water in the first vessel and then placed in another vessel, and to it are added water, the white of an egg, and a little salt (and a trace of saccharin, if desired). A palatable artificial milk can thus be prepared which is practically free from milk sugar.

(The egg albumen may be omitted or added according to the patient's preference.) A sugar-free milk<sup>4</sup> (prepared according to the directions given by Dr. R. Hutchinson) can also be obtained, which is of much service to diabetic patients; it may be diluted with water or soda-water.

As regards beverages those which are free or almost free from carbohydrates can be taken (indicated in the diet sheet shown at the lecture). I believe that ordinary beer and many non-alcoholic forms of beer are injurious. Also it is desirable that the amount of alcohol in the form of spirits should be very limited, especially in the milder forms of the disease.

Many patients suffering from the milder forms of diabetes derive much benefit from a visit to Carlsbad or Neuenahr. It is difficult to estimate what share the drinking of the waters of these spas may have had in the causation of improvement. But it appears probable, from the observations of continental physicians, that the drinking of the waters at the spas whilst hot from the spring has some effect in diminishing the sugar excretion. In the severe forms of diabetes a visit to these spas is useless and often the long journey has a most injurious effect on the patient.

#### Treatment by Drugs.

Whilst it must be admitted that we have no specific remedy for diabetes I believe that several drugs have a distinctly beneficial action. I think I have demonstrated clearly that two drugs at least—salicylate of sodium and aspirin, given separately or combined—have a definite action in diminishing the sugar excretion in *certain* cases of diabetes of the milder forms. These conclusions are based on many observations made on cases of diabetes in the wards of the Ancoats

<sup>4</sup> This milk can be obtained from Messrs. Clay Paget, and Co., 28, Ebury-street, Eaton-square London, S. W.



Hospital. The patients have first been kept for ten or 14 days or longer on ordinary hospital diet or on a diet similar to that which they were taking before admission to the hospital. During this period no drug has been given except a few minims of peppermint water and the sugar excretion has been determined daily. It has thus been possible to estimate the constant sugar excretion apart from drug treatment. Then, for a period of two or three weeks or longer salicylate of sodium or aspirin has been given. The sugar excretion has diminished. The drug has been then discontinued and peppermint water given (the diet being kept unaltered). The sugar excretion has increased. Similar observations have been repeated on the same patient, sometimes on many occasions, with the result that whilst the salicylate of sodium or aspirin was being taken the sugar excretion has diminished. I have published records of such cases in 1901 and 1902.<sup>5</sup> Since these dates I have had similar favourable results in other cases of the mild forms of diabetes in hospital and private practice. (Charts showing the good effects of these drugs on the sugar excretion were shown at the lecture. In some of the cases the lecturer was indebted to Dr. G. Hack and previous house physicians at the Ancoats Hospital for assistance in the sugar estimations.) The diminution of the sugar excretion has not been due to the occurrence of any complications and the patient has felt quite well whilst taking the drugs.

Neither sodium salicylate nor aspirin is a specific for diabetes. I have never found any definite diminution of the sugar excretion under the action of these drugs in the most severe forms of the disease; also in some of the milder forms they have not had any marked effect, but in other cases of the milder forms I believe I have obtained conclusive evidence of their beneficial action. As regards the mode of administration, I

<sup>5</sup> Brit. Med. Jour., March 30th, 1901, and Dec. 27th, 1902.

have usually given sodium salicylate in peppermint water, commencing with ten grains three times a day and increasing up to 15 grains three, four, or sometimes five times a day, if necessary. With large doses it is important to watch for toxic symptoms and to discontinue the drug, if these occur. Pure natural sodium salicylate is the better preparation. Aspirin is best given as a powder—ten grains twice a day, rapidly increasing the dose up to 15 grains four or even five times a day. It is best to order the aspirin powder to be taken in a little water to which a drop of lemon juice has been added. Soda-water or alkalies should *not* be taken just after the aspirin powder, otherwise the drug would be liable to decompose in the stomach and cause gastric symptoms. Some patients take the sodium salicylate better than aspirin; others take aspirin better. This latter drug is less liable to cause toxic symptoms in large doses. Sometimes cases are met with in which one of these drugs can be taken, but not the other. Recently, I have often combined the two drugs with good results, giving sodium salicylate up to 15 grains three or four times a day and one powder of aspirin, 15 grains, at night. When ever the two drugs are given it is important to commence with small doses and steadily to increase the quantity, watching for bad effects.

By a restricted diet, by the use of casein or protene bread, sugar-free milk, &c., along with the administration of salicylates or aspirin, often satisfactory results can be obtained in the milder forms of diabetes. The salicylates and aspirin are of service especially, because they often enable satisfactory results to be obtained without the employment of an absolutely rigid diet. Cases are, however, sometimes met with in which salicylate and aspirin cannot be taken owing to the disagreeable symptoms that they produce even in small doses.

Many other drugs have been used in the treatment of diabetes, and it is probable

that opium, morphia, codeia, sumbul, uranin nitrate, arsenic, and antipyrin have in certain cases some beneficial effect. An objection to the first three drugs is their constipating action, and this is especially undesirable in the most severe forms of the disease, since constipation appears to predispose to the onset of coma. It is important, therefore, when these drugs are given that care should be taken to keep the bowels regular. In the most severe forms of diabetes, in which the urine gives a deep brownish-red colouration with perchloride of iron, I believe the alkaline treatment, bicarbonate of sodium in large doses, is of some service in postponing the onset of coma. The dose should be steadily increased up to two, three or four drachms or more daily. The bicarbonate is best taken in frequent doses in soda-water or milk. It is very important not to produce gastric disturbances by the sodium bicarbonate, but it is remarkable how well these large doses are usually taken by diabetic patients.

(The Lancet.)

### On the action of venoms of different species of poisonous snakes on the nervous system..

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AND

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#### Preliminary Account: Cobra Venom.

It is admitted by all workers, both of earlier date and those of more recent times, that snake venoms in general do seriously affect the nervous system. There has been,

however, considerable dispute as to the manner in which the action is brought about and as to the exact part which the action plays in causing the symptoms and the fatal result in cases of snake venom intoxication. Thus, while nearly every writer who has specially studied the physiological action of cobra venom considers that the poison owes its lethal properties principally, if not entirely, to a direct action on the nervous system, Cunningham<sup>1</sup> contends that its primary action is on the blood and that the nervous symptoms which are observed in cobra venom intoxication are wholly dependent on the action of the poison on the blood. Again, this same observer,<sup>2</sup> as a result of his experiments with the venom of *daboia Russellii*, puts forward the opinion that when this poison causes rapid death it does so entirely by a direct action on the central nervous system. He looks upon its primary action as being that of a strong nerve irritant. It is not our intention in this preliminary account to enter into the discussion of this latter problem. One of us<sup>3</sup> has already put forward facts which proved the inaccuracy of Cunningham's hypothesis and which showed beyond a doubt that all rapid deaths, the result of the injection of *daboia* venom were due to a more or less extensive intravascular thrombosis. The observations, in short, recorded in that paper,<sup>4</sup> and in another communication<sup>4</sup> of later date showed that *daboia* venom had a marked action on the blood plasma and on the red blood cells, but they did not show that it had no action on the nervous system. To this point, however, we shall return in another communication. From these few considerations alone, and they might be greatly multiplied, it would appear that renewed

<sup>1</sup> Scientific Memoirs by Medical Officers of the Army in India: 1895, Part IX, and 1898, Part XI.

<sup>2</sup> Loc. cit.

<sup>3</sup> Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India, New Series, 1903, No. 3.

<sup>4</sup> Ibid No. 4.

research is necessary with a view of trying to determine definitely the action of the venoms of different species of snakes on the central and peripheral nervous systems. Up to the present time this problem has been approached by all workers, with few exceptions, from one standpoint only—*viz.*, the standpoint of the observation of the symptoms which result from injections of the various venoms and the observation of gross pathological appearances in fatal cases. Such a method of research as a means of determining the exact physiological action of a poison on the nervous system is surrounded with difficulties. These difficulties have been well stated by Martin<sup>5</sup> of Melbourne as follows: "The determination of the exact physiological action of a poison on the nervous system of the higher animals is always difficult. The difficulties are enormously increased when the poison, as is the case with most snake venoms, profoundly affects the blood and the whole circulatory apparatus also. In such a case it is not easy to distinguish effects which are due to the primary action of the poison on nervous tissue from those which are secondary to changes produced on the circulation and blood." It was, therefore, necessary to approach this question from another direction.

"One of the exceptions to which we have referred above consists in an observation made by Dr. B. Kilvington,<sup>6</sup> working in Professor Martin's laboratory at Melbourne,—*viz.*, that the venom of the Australian tiger snake produces marked chromatolysis of the Nissl granules of the cells in at least one portion of the nervous system if the animal survives the injection of the poison for over three hours. Only one part of the nervous system, however, was selected for examination by this worker—*viz.*, the cervical enlargement of

<sup>5</sup> Clifford Albutt's System of Medicine, Vol. II, p. 689.

<sup>6</sup> Journal of Physiology, Vol. XXVIII, No. 6, Dec. 15th 1902.

the cord. The method which we have adopted was to combine the observation of the symptoms during life with histological examinations of portions of tissue taken from all parts of the central nervous system and from the peripheral nerves of animals, principally monkeys, which had received injections of the venom of a certain species of snake and which had died at varying intervals after these injections. It was thought that by following this method of investigation a definite opinion could be arrived at as to whether there was a direct action of the poison on the nervous system and also as to whether in those cases in which evidence of a direct action was present any relationship could be established between the symptoms observed and the histological appearances seen in the central nervous system and in the peripheral nerves. In this way we are investigating the venoms of several of the most deadly of Indian snakes, among these being *naia tripudians* (cobra), *daboia russellii* (chain viper), *bungarus fasciatus* (banded krait), and *echis carinata* (phoorsa).

In the course of this investigation many interesting and important points have turned up which may throw light on other neuro-pathological conditions and which make it necessary that further research should be made along the lines we have indicated.

In this preliminary account we propose to deal with only one variety of snake venom and to leave over for future communications the observations made with the other poisons. Moreover, after further investigation we shall be in a better position to sift completely the data we have obtained and to show their bearing on the action of neuro-trophic poisons in general. The material which was used in all the experiments was pure, dry, and fresh poison. This was collected under the personal supervision of one of us during a period of several months from a number of healthy living snakes. The poison was obtained either by squeezing the glands, or by

allowing the snakes to bite through a sheet of water-proof cloth tightly stretched over the mouth of a stout wine glass. When the poison had been thoroughly desiccated over lime it was added to the general stock which was preserved in an air-tight tube kept from the light. Before the venom was weighed it was reduced to an impalpable powder and, again dried over lime.

The physiological action of cobra venom and the symptoms of the intoxication produced by it have been studied by many observers, especially in India. Nearly all these workers—Fayrer, Brunton, the members of the Indian commission, Wall, Aron, and Calmette—hold that cobra venom is a primary neurotic poison, acting directly upon the nervous, and especially the central nervous system. This opinion, however, has only been arrived at by the observation of the symptoms which follow an injection of this venom. These symptoms certainly point, as we shall see, to an action of the poison on the nervous system. While this is the general opinion, Cunningham, as we have mentioned above, has put forward the hypothesis that the primary action of cobra venom is an action on the blood and that the nervous symptoms, which have been observed and described by all alike, are dependent on, and can be interpreted by, the effects which the poison has on the blood. He holds that there is no satisfactory evidence that cobra venom has a primary action on the nervous system and he asks for more direct proof of this hypothesis than has hitherto been advanced. We hope in this communication to furnish sufficient direct proof of the effect of the action of this venom on the nervous system. As the symptoms of cobra-venom intoxication both in man and in animals are well known, having been described accurately by various Indian observers, it is unnecessary for us to enter into these symptoms in any detail. The following, therefore, is only a short sum-

mary taken from the data of the observations of one of us who has had the opportunity of studying the symptoms in two actual cases of cobra bite in man and in several hundred experiments in animals, including monkeys, horses, donkeys, dogs, &c.

When a large quantity of cobra-venom is injected directly into the blood stream of an animal death takes place within three or four minutes after the injection. As a rule, muscular twitchings and general convulsions are the only symptoms which are observed to precede death in these cases. On *post mortem* examination the blood is found to be liquid throughout; there is no trace of intravascular clotting to be found anywhere. If the quantity of poison injected intravenously approaches the minimum lethal dose the symptoms observed are the same as when the injection is made subcutaneously, the only difference being that they are of more rapid onset and terminate more quickly in death than in the latter case.

The first constitutional symptom which is observed to follow a subcutaneous injection of cobra-venom is a state of lethargy and drowsiness. The head is seen to fall forward, almost immediately to be recovered with a jerk. The eyes are kept half-shut, but are opened suddenly on any stimulation. It is to be noted that there is no preliminary stage of excitement. Then paresis of the extremities becomes apparent and this is more marked at first in the hind limbs than in the fore-limbs; the animal has difficulty in moving and if a monkey, it is seen to catch the bars of its cage to prevent itself from falling down. In man paralysis of the tongue and muscles of the throat soon makes itself evident; there is loss of the power of speech and the saliva which is profusely secreted trickles down the lip. Nausea, vomiting, and retching are common symptoms in man and in dogs. The paralysis rapidly advances, becoming more general

and more marked. The animal soon lies down unable to move. The breathing still continues, although it may be slow and with much inspiratory effort. Just as the respiration ceases general convulsions may set in and close the scene. This symptom, however, is not observed in all cases. If the chest be opened immediately after the respiration has ceased the heart is seen to be still beating regularly and pulsation may go on for from 20 minutes to half an hour after respiration has stopped. On *post mortem* examination no gross lesions of any kind are to be found. In those cases in which death has been at all delayed or in which a large quantity of venom has been injected directly into the blood stream the coagulability of the blood is found to be diminished. No other pathological condition is apparent. We have mentioned above that Cunningham considers that the symptoms which we have just narrated are dependent for their cause on the action of the poison on the blood.

Now the action of cobra venom on the blood plasma has been fully investigated by one of us.<sup>7</sup>

The conclusions arrived at from this investigation were: (1) that cobra venom has a marked hæmolytic action but that the effects of this action *in vivo* were of little or no importance in the production of the constitutional symptoms; and (2) that cobra venom causes a certain but by no means well-marked diminution of the blood coagulability and that no symptoms, as a rule, result from this deficiency of blood coagulability. It is evident, therefore, that Cunningham's hypothesis is by no means an adequate explanation as a cause of the symptoms and of the fatal result in these cases and that we have still to search for other pathological lesions which might account for them. With this end in view we have examined the

nervous systems of the following animals which died after having received injections of cobra venom:—

| —            | Weight in grammes. | Dose per kilogramme.      | Time before death. |
|--------------|--------------------|---------------------------|--------------------|
| Monkey No. 1 | 1830               | 0.25, subcutaneous.       | 6 0                |
| " " 2        | 3110               | 0.5, " "                  | 2 45               |
| " " 3        | 2770               | 0.5, " "                  | 2 30               |
| " " 4        | 2200               | 3.0, " "                  | 1 10               |
| " " 5        | 2050               | 10.0, intravenously.      | 0 3½               |
| " " 6        | 1900               | 10.0, " "                 | 0 2½               |
| Rat " 1      | —                  | 0.25, subcutaneous.       | 45 0               |
| " " 2        | —                  | ly. (+antivenomous serum) | 20 0               |
| " " 3        | —                  | 0.05, subcutaneous.       | 3 0                |
| " " 4        | —                  | 0.25, " "                 | —                  |

The methods which were adopted for the histological examination of the nervous systems of these animals were as follows: Shortly after death portions of the cerebral cortex and cerebellum, the medulla, the pons, and pieces from different levels of the cord, as well as portions of the median, posterior tibial, and vagus nerves, were removed. Some of these pieces were fixed either in saturated solution of Perchloride of Mercury or in formol (10 per cent.), and then mounted in paraffin<sup>8</sup>. Portions of the same tissues from four normal control monkeys were treated in a similar manner. This portion of the work was done by one of us in India. The paraffin blocks were sent home and sections were then cut, examined, and described by the collaborator. The staining of the tissues was according to Nissl's method either by theonine or toluidin blue. Some sections were also stained with hæmatoxylin and cosine. The following is a description of the changes observed in the nervous system in each case.

*Monkey No. 1*, weight 1830 grammes, died in six hours after subcutaneous injection of 0.25 milligramme per kilogramme of cobra venom. Throughout the cord the

<sup>8</sup>Other pieces of the same tissues were hardened in Muller's fluid and then passed through Marchi's fluid; these were also mounted in paraffin. But owing to some blackening of fibres in the control tissues it was decided that the osmic acid staining should be done over again. A note of this will be given in a later communication.

appearances are somewhat striking. In the cervical enlargement, at the periphery of each anterior horn—i.e., in the antero-and postero-lateral groups—some 10 to 15 cells are to be seen with well-stained and fairly well-defined Nissl granules. These granules, however, are not quite normal, for though not definitely fragmented they look as if little pieces had been clipped off their edges and under a high power it is quite apparent that their outlines are blurred and ill-defined as if some solvent had been acting on them. The rest of the cells in the anterior horn are degenerated and without any granules whatever. They are not typical "ghost cells," their nucleus and reticulum being too deeply stained for that; they look, rather, like a normal cell minus its chromatic granules. No cell is to be seen with the dustlike granulation so characteristic of a more chronic chromatolysis. In the lumbo-sacral region the same appearances are met with as in the cervical enlargement, though the number of these almost normal cells is less and a fair proportion of "ghost cells" is present along with the deeper stained cells with no granules. In almost all the cells the nucleus is central and the nucleolus distinct.

In the pons and the medulla the changes are much the same as in the cord, though not so marked. The twelfth, tenth (motor), and seventh nuclei all contain some of the almost normal cells, but also a considerable proportion of cells with the Nissl bodies much broken up. The cells of the seventh nucleus are less affected than those of the other two nuclei. In the cortex the vast majority of the pyramidal cells show an acute chromatolysis. As in the cord, there are some cells well stained and with their granules but little altered; but these are few and far between, not more than three or four to each section. In the cerebellum not one normal Purkinje cell is to be seen, most being deeply and diffusely stained, with a few dust-like granules in their

plasma. The vessels throughout the cord pons, medulla, and cortex are considerably dilated and in the cord some small hæmorrhages into the grey matter are to be seen. There is possibly a slight increase in the connective-tissue cells. These seem to be attracted by the ganglion cells, for one frequently sees such a cell with three or four connective-tissue cells around it and in close apposition to it. In the peripheral nerves there seems to be a slight increase of the internode nuclei, but this is not by any means well marked.

*Monkey No. 2*, weight 3110 grammes. This animal received subcutaneously 0.4 milligramme per kilogramme of venom which had been kept in solution for some days. After the injection there were marked symptoms of poisoning, but the animal recovered. Three days afterwards a second injection of 0.5 milligramme of poison freshly dissolved was given and death supervened in two and three quarter hours. The appearances in the cord seem somewhat different at different levels, some sections being practically normal, while others show quite a proportion of altered cells. Taken as a whole, there seems little doubt of the presence of degenerative changes, but they are not so well marked as in Monkey 1. As in that animal, there are cells with their granules slightly fragmented and others with almost no granules at all. The changes are most marked in the cells lying towards the central canal. The pons and medulla are almost normal. In the cerebral and cerebellar centres the cells are almost entirely devoid of granulation and the degenerative changes are just about as well marked as in Monkey 1. There is very slight increase, if any, in the nuclei of the peripheral nerves.

*Monkey No. 3*, weight 2770 grammes, died in two and-a-half hours after subcutaneous injection of 0.5 milligramme per

<sup>7</sup>Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series, 1903. No. 4.

kilogramme of cobra venom. In the cord the vast majority of the lateral cells seem practically normal, though they are, perhaps, rather more diffusely stained than they should be and their granules are possibly a little bit fragmented. Passing inwards there are cells found with more definite fragmentation and some have little granulation at all. The pons and medulla are normal. The cells of the cerebral cortex also are but little altered and may be considered as almost normal. The nerves show no abnormality.

*Monkey No. 4*, weight 2200 grammes, died in one hour and ten minutes after subcutaneous injection of 3.0 milligrammes per kilogramme of cobra venom. In the cord the vast majority of the cells seem quite normal, there being but a small proportion with their granules dissolved out. This may, however, be a commencing degeneration but if so, it is not unequivocal. The cells of the pons, medulla, and cortex are almost normal. In the cerebellum the Purkinje cells are too diffusely stained and seem deficient in granules. The nerves seem little altered.

*Monkey No. 5*, weight 2050 grammes, died in three and-a-half minutes after intravenous injection of 10 milligrammes per kilogramme of cobra venom. The appearances throughout the nervous system may be considered normal.

*Monkey No. 6*, weight 1900 grammes, died in two and-a-half minutes after intravenous injection of 10 milligrammes per kilogramme of cobra venom. The appearances are as in Monkey No. 5.

*Rat No. 1*, died in 45 hours after subcutaneous injection of 0.25 milligramme of cobra venom *plus* anti-venomous serum. The degenerative changes in the cortex, pons, medulla, and cord are extreme. The cells are deeply stained, but they are much broken up and vacuolated. Some have pieces

punched out of their edges, giving them an irregular and ragged outline. Almost none of these cells has any granulation whatever. There seems no doubt that in the majority of the cells their achromatic part is involved and that they are beyond recovery.

*Rat No. 2*, died in 20 hours after subcutaneous injection of 0.05 milligramme of cobra venom. In the cord not a normal ganglion cell is to be found. Most of the cells are faintly stained with no granules and with a diffusely stained light blue nucleus and some cells have no nucleus at all. Other cells, again, are rather more deeply stained and contain broken-up granules. There is no vacuolation to be seen. The appearances in the cortex and medulla are much the same as in the cord.

*Rat No. 3*, died in three hours after subcutaneous injection of 0.25 milligramme of cobra venom. In this case there is quite a proportion of normal cells, but, on the other hand the majority of the cells show definite degenerative changes. In place of the pale cells of Rat 2 we have deeper staining, some cells having fragmented granules and some no granules whatever. A few cells are very much disintegrated and vacuolated. In most cells the nucleus is central, but it is rather ill-defined and diffusely stained. The degenerative changes are even more marked than in Monkey 1 (which died after six hours) and much more marked than in Monkeys 2 and 3, each of which died in rather less than three hours after injection, about the same time as this rat.

We see, then, that in cobra poisoning we have a toxic substance which when injected subcutaneously produces symptoms of muscle paralysis and that when we examine the nervous mechanism which controls these paralysed muscles there is found to be evidence of such degenerative changes as are known to be so frequently associated with paralysis. It seems fairly certain, therefore, that cobra venom has a direct action on the

motor neurones. Doubtless this toxin, like most other toxic substances, has also a poisonous action on all the tissues of the body, but with such evidence as we have before us we cannot but conclude that it has a specially selective action on the nervous system and that it is from this that death results. There can be no reason, therefore, to ascribe, as Cunningham did, the cobra poisoning symptoms to blood changes which, even apart from the proof now furnished to the contrary, could not, as one of us has shown, account for them. Certainly not all the animals killed with the venom showed histological changes in the nervous system, for it would seem that time is required for these to develop. And here we would note that in such animals as Monkeys 3, 4, 5, and 6 we have had some difficulty in knowing how to interpret the slight changes found in some of their ganglion cells—whether to call them variations within the limits of what may be normal or to count them as evidence of an early degeneration. There can be no absolute standard to go by, for even in our four control monkeys a certain proportion of the ganglion cells were not without changes in their Nissl granules, and when we are dealing with the very earliest appearances of degeneration it must be difficult to know where to draw the line between what is normal and what is degeneration. We have had this in mind in recording our cases and have described equivocal cases as being normal rather than make the error of finding evidence of degeneration where it does not exist. The degenerative changes in Monkey 1 (dead after six hours) were undoubted. In Monkey 2 (dead after two and three-quarter hours) and Monkey 3 (dead after two and a half hours) the appearances, though not so certain, may quite fairly be taken as showing an early degeneration. Monkey 4 (dead in one and one-sixth hours) is doubtful. Monkeys 5 and 6 (dead in a few minutes) may be considered normal. So that it would seem that

two, and possibly three, hours required to elapse after the injection of the venom before degenerative changes appear in these monkeys' cells. With the rat the time might be less, for in Rat 3 (dead after three hours) the degenerative changes were more marked than even in Monkey 1 (dead after six hours). Possibly the cells of the Rat are not so stable as those of the monkey, but in any case one is never so sure of the results obtained in the smaller animals and we mean to deal with monkeys only in the future. One other point we wish to draw attention to, is that in the six monkeys dying with cobra poisoning the staining of their ganglion cells was much more intense than that in the four control animals. This may be an accident, but we had to recognise the fact that in decolourising the section the length of time which was required was longer in the monkeys subjected to cobra poisoning than in the normal ones. This may, as we say, be an accident of fixing or staining, but we are disposed to regard it as due to the cobra venom producing some chemical change in the cells themselves.

In concluding, we wish to express our indebtedness to Dr. J. Lindsay Steven, for the use of his laboratory and apparatus, in carrying out a part of this investigation.

## PRESCRIPTIONS.

### For Scabies.

- (1) R Sulphur Precipitatum 3 i  
Picis Liquidum 3 i  
Saponis Viridis 3 ii ss  
Adeps 3 ii ss  
Cretae 3 i

'Sign.' Apply after washing the part.  
When there is Eczema complicating scabies use the following:

- (2) R Styracis Liquidum 3 i  
Spts. Vini Rectificatis 3 ii  
Ol. Oliva 3 i  
Ft. Liniment.

'Sign.' To be applied the affected parts on four successive nights.

- (3) R Styracis 3 ii  
Balsum Peruvianum 3 ss  
Ungt. Simplicis 3 i

'Sign.' To be rubbed on to the affected parts on 4 successive nights after bath of warm water and soft soap.

- (4) R Naphthol 3 i  
Ungt. Simplicis 3 i

'Sign.' Apply to the affected parts.

# BISHOP'S EFFERVESCENT CALCUSOL

(Registered name).  
Piperidine Para Sulphamine Benzoate, 5 grains } in  
Potash Bicarbonate, 10 grains } 60 grains.

HOWEVER Physicians may differ as to the exact part played by Uric Acid in the causation of the group of disorders commonly known as Rheumatic or Gouty, there is a general agreement that when it tends to be deposited in excessive quantities either in the urine, in the joints, or in the form of Uric Acid Calculi, it is desirable to administer some drug which will not only counteract this tendency to excessive formation, but will also assist in eliminating accumulations. Such a drug ought to be easy to administer, readily assimilable without giving rise to any constitutional disturbance, and sufficiently stable to allow of its preparation and exhibition in agreeable form. It should also be capable of detection in the urine for some hours after administration, as evidence that it had not been at once excreted, and also that it was not destroyed in the process of assimilation. All these requirements are combined in Bishop's "CALCUSOL," which we do not hesitate to pronounce the most powerful solvent of Uric Acid at present known. We base our claims upon the following facts and experiments:—

The investigations of Tunncliffe and Rosenheim showed that Piperidine possessed a marked superiority over all other Uric Acid solvents, and that while it could not be well employed in the form of the base on account of its very unpleasant odour and taste, it could be administered in the form of a salt without the slightest untoward effects.

The highly encouraging results of their investigations led us to search for a salt of Piperidine which should fulfil all Pharmaceutical and Therapeutic requirements. After a long course of experiments, we came to the conclusion that the only salt thoroughly reliable from both points of view is that formed by combining the base Piperidine with Para Sulphamine Benzoic Acid. This salt is Piperidine Sulphamine Benzoate ( $\text{SO}_2 \text{ NH}_2 \text{ C}_6 \text{ H}_4 \text{ COOH C}_5 \text{ H}_{11} \text{ N}$ ). It is stable at all temperatures up to  $100^\circ \text{C}$ ; does not absorb water or  $\text{CO}_2$  from the air, as the base itself does; contains a very high percentage of Piperidine; is neutral; is freely soluble in water; and can be administered in large quantities without the least inconvenience.

The observers already quoted found that certain organic salts of Piperidine when administered had a twofold action, not only did they diminish the total amount of Uric Acid produced, but by increasing the quantity of Xanthine—a substance the excretion of which gives rise to no difficulties—did not in any way interfere with the normal nitrogenous output. In fact when Piperidine Para Sulphamine Benzoate is administered, matter which would otherwise be converted into insoluble Uric Acid is in great measure excreted as soluble Xanthine. Experiments prove that when 5 grains of Piperidine Para Sulphamine Benzoate is taken in water internally it can be detected in the urine one hour afterwards and at all periods up to ten hours. After twenty hours no trace could be found, showing complete elimination of the drug had taken place in that period. As Para Sulphamine Benzoic Acid itself is a Urinary Antiseptic, its presence in this salt should give the latter similar properties; but our experiments in this direction have not gone far enough to enable us to state definitely the exact value of Piperidine Para Sulphamine Benzoate as a Urinary Antiseptic.

Bishop's "CALCUSOL" is a Granular Effervescent preparation of the above salt combined with Potash. It has already been used with signal success in different conditions of the Uric Acid diathesis. Among these may be specially mentioned cases of Uric Acid deposits in the small articulations—a condition commonly known as Rheumatic Gout. After a course of "CALCUSOL," the joints have become markedly smaller, the pain disappeared, and the flexibility of the joints was restored.

"CALCUSOL" is also indicated in cases of excessive deposit of Uric Acid in the urine, especially where this condition has given rise to the actual formation of renal or bladder calculi. Its use has materially aided the treatment of renal colic, and where frequent micturition and bladder irritation arise from Uric Acid Sediments, a course of "CALCUSOL" has been followed by the happiest results, while in no single instance has its administration been attended by the slightest inconvenience. We therefore offer it as an important addition to the Physician's armamentarium for the treatment of all Uric Acid disorders which have not yielded to the ordinary solvents, and especially for Rheumatism either chronic or recent, Rheumatic Gout, and renal or bladder calculi.

We have given the registered name "CALCUSOL" to our Granular Effervescent Piperidine Para Sulphamine Benzoate c Potash Bicarb, for the Physician's convenience in prescribing and we wish to call attention to the fact that we are the sole manufacturers of this Piperidine Salt and of any preparation containing it.

"CALCUSOL" is sold only in one sized bottle containing 4oz. (28 doses). Price to the profession 3/8.

A wooden measure (holding 1 drachm) accompanies each bottle which, when filled level gives the proper dose.

We do not sell "CALCUSOL" to the public; it is supplied exclusively to Medical Men and Chemists.

**CALCUSOL** INTRODUCED AND PREPARED ONLY BY  
**ALFRED BISHOP, Limited, Manufacturing Chemists,**  
Speck's Fields, Spelman Street, Mile END NEW TOWN, London E. C. Sold by:—W. E. Smith & Co., Madras.

## The Antiseptic.

Vol. I.]

JULY, 1904.

No. 3.  
Annual Subscription Rs. 5.

### Original Articles.

#### \*Carbuncle and its Treatment

BY

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**Definition:—**"A specific spreading inflammation of the subcutaneous areolar tissue, implicating the skin and terminating in death of the affected tissues, with the formation of a pulpy greyish or ash-coloured slough." (Erichsen).

**Etiology.**—Carbuncle is very rarely seen in persons under 40 years of age; it is probably most commonly met with between the ages of 40 and 50. It is hardly ever seen in children, and is much less common in women than in men. In this country it appears to affect all races alike, —Hindus, Musulmans, Europeans, &c. are all equally liable to it.

Carbuncle is, as a rule, only met with in persons whose constitutions have been broken down by disease, bad feeding (more particularly sudden changes from luxurious to starvation diet and *vice versa*) and general debility. The two diseases most commonly associated with it are

diabetes and Bright's disease, more especially the former. In both of these, as you are aware, the tissues are supplied with a very inferior quality of blood which may contain toxic products to a greater or less extent and thus prepare the field for the growth of any germs which may be sown on it. In this particular instance the germs are usually either the staphylococcus pyogenes aureus, or the streptococcus pyogenes albus.

In Madras, in my experience, carbuncles are most frequently met with at the beginning of the hot season, April and May being favorite months. The next period in order of frequency is before the beginning of the rains.

**Site.**—As regards the *site* of the carbuncles they are most commonly seen on the back, generally between or below the scapulae, to one or other side of the middle line. The next situation in point of frequency is the nape of the neck, and from this situation the disease may spread up to the occiput. The third favorite situation is the lumbar region or the buttock. Then the face—more rarely. You will note that carbuncles have a special predilection for regions on the posterior aspect of the body. The reason for this is supposed to be due to the peculiarity in the anatomy of the skin in

\* Being a paper read at a meeting of the Madras Medical Association.



those regions. As you are aware, the skin of the back is double the thickness of that met with on the innerside of the arms and on the abdomen. It is bound down to the fascia underneath by strong fibrous bands. A considerable amount of subcutaneous tissue is present between the skin and the subjacent fascia. Now the fibrous bands referred to take their origin close to other structures which are known as the columnae adiposae, *i. e.*, columns of fatty tissue, which run almost at right-angles to the skin and in which the hair-follicles of the long hairs have their origin. Sebaceous and sudoriferous glands are also met within this tissue.

We are now in a position to follow the course of a carbuncle. What first occurs is the inoculation of one of the organisms mentioned, or similar ones, into the seat of a hair-follicle, sebaceous or sweat duct, or even into a minute abrasion in the skin. The soil is favorable—the patient being debilitated—and the result is that the organisms grow and multiply. The inflammation and suppuration extends down one of the columnae adiposae to the deeper tissues, here it spreads first horizontally in the planes of the tissues and after a time again makes its way up to the surface by the columnae adiposae, thus giving rise to the peculiar little perforations seen clinically dotted all over a carbuncle. The staphylococci generally can be recognized under the microscope without much difficulty.

Clinically the appearances agree with the above. In its earliest stages a carbuncle is seen to consist of a small, painful, brawny, slightly-raised patch or cone, having in its centre a hair follicle, sebaceous or sweat gland, or abrasion. After three or four days the skin breaks down,

or is perforated, at several points, giving rise to small holes through which pus, or a peculiar greyish slimy material, exudes. If the inflammation be very acute the whole mass may now become gangrenous; more often the holes coalesce and the greyish material already referred to is extruded in the form of a slough. The disease spreads circumferentially, the subcutaneous tissues being usually destroyed before the skin.

As regards *depth*, in cases which are seen fairly soon only the superficial layers of the subcutaneous fat may be affected, but later the affection extends down to the muscles. I have, however, never seen any case in which the muscles have been destroyed, although the pus may burrow between the different muscular layers. During all this time, the patient's constitutional symptoms—fever &c.—may be very severe, and are in the worst cases those of sapraemia, septicaemia, or pyaemia. If the affection be not promptly treated the chances are that the patient will die either of septicaemia or exhaustion. In cases complicating diabetes or Bright's disease, the patient may, and often does, sink into a condition of coma (diabetic or uraemic) which frequently proves fatal.

I have already mentioned the common situations of carbuncle. It may however be met with on other parts of the body; thus I have seen it on the scalp, arm, leg, abdomen, and even on the scrotum in one case, necessitating the complete removal of that structure by an operation resembling that commonly done for elephantiasis scroti.

Carbuncles are generally single, but may be multiple. I have seen several such cases, which occur usually in diabetic

subjects. Thus, in one of my patients—who came from Cuddappa—there were no less than *fifteen* carbuncles varying from the size of a cheese-plate to an inch in diameter, and scattered all over the body; one very large one extended from ear to ear and from occiput to scapulae, and another enormous one had its seat in the axilla. The patient's urine contained a large amount of sugar, it became almost solid in fact on addition of Fehling's solution. The patient recovered, and left hospital quite convalescent from the carbuncles and with his urine free from sugar, and this in spite of the fact that no hopes of recovery were held out to him. It behooves us therefore not to give up hope even in the worst cases.

**Prognosis:**—In cases of large carbuncles where no operation is performed the mortality rate is very high, especially in diabetic and uraemic cases. I have seen several cases in private where operation had not been done and which were dying when seen by me. These were usually cases where operation had been refused or native remedies had been applied. No doubt many cases of even large carbuncle, do get well without operation, but the patient's chances of recovery are very much less.

I have operated on 79 cases in the General Hospital, 44 diabetic, and 35 non-diabetic, in almost all of which excision was performed. Amongst the diabetic cases there were 4 deaths, *i. e.*, 9%; only one of the non-diabetic cases died, *i. e.*, 2.8%. This death occurred in the case of a patient suffering from advanced Bright's disease. The patient died from the original disease the wound being quite clean at the time of his death. The total mortality in the 79 cases was 5, *i. e.* 6.3%.

The Prognosis given in Cheyne and Burghard's "Surgical Treatment" for large carbuncles (which are the only sort admitted to the General Hospital) is that from 8% to 30% generally die.

The most fatal cases are those in which a large carbuncle is situated on the neck or face. My neck cases were particularly severe. The great danger in neck and face cases is said to be that the pus may get into the veins of the *diplœ*, etc. thus giving rise to meningitis. I have not seen this occur.

Death, as already said, is most commonly due to septicaemia or pyaemia, or to the original disease, or may be due to exhaustion. The danger from operation *per se* is, in suitable cases, practically nil.

**Treatment.**—The treatment may be subdivided into *palliative* and *operative*.

(a) *Palliative.* This should be done only in cases where the carbuncle is quite small (less than 1 inch in diameter), or where the patient refuses operation, or is too ill to stand any serious operation. It consists in swabbing the carbuncle with pure carbolic acid followed by the application of carbolic fomentations (1 in. 20, or 1 in 40). Ordinary poultices such as linseed poultices &c., should never be used as they simply encourage the growth of the micro-organisms.

(b) *Operative.* The best operative treatment, when it can be carried out, is undoubtedly complete excision of the carbuncle. This is done by a clean sweep of a sharp knife all round the carbuncle just outside the edge. The knife is then introduced horizontally underneath the carbuncle, and the whole mass removed in one piece.

Should any portions of suspicious looking tissue remain they are carefully removed by scissors and spoon. The whole raw surface is then thoroughly swabbed with pure carbolic acid and the cavity packed with gauze strips (soaked in carbolic lotion, 1 in 20). Over all a large pad of oakum is placed and bandaged on firmly. Bleeding is usually rather free during the operation but gives no trouble afterwards provided the cavity be carefully packed, and a firm bandage applied.

At first I used chloride of zinc (40 grs. to oz. 1.) for swabbing but find that the carbolic acid is infinitely better, and has the further advantage of being less painful after the patient recovers from the anaesthetic. In the vast majority of cases the resulting ulcer heals up without further trouble. Skin-grafting is not necessary and is very seldom done by me in these cases, as the resulting scar, even where a very large carbuncle has been excised, is surprisingly small and I have never yet seen any case where cicatricial deformity resulted. In certain situations, *e. g.*, on the face and side of the neck, complete excision is not practicable. Under these circumstances I make incisions so planned as to avoid important structures, scrape out all the diseased and sloughing tissues and then with scissors remove the dead skin. The after-treatment is the same as in cases of excision, but subsequent scrapings are frequently necessary owing to spread of the disease.

Another treatment which has been recommended is injection of 80% or 90% Carbolic Acid by means of a hypodermic needle and syringe. As much as 30 drops may be injected. This treatment I have given a fair trial to, but in no case did it do any appreciable good, and excision

had to be performed later. It may however be conceivably useful in cases of very small carbuncles, particularly when the patient objects to the use of the knife. I cannot however recommend it from my own experience of it.

One interesting point in connection with the use of carbolic acid, and its solutions, for carbuncles is that I have never seen, or heard, of a case in which symptoms of poisoning were produced by the drug. Furthermore, in cases of diabetic carbuncle, the carbolic acid appears to have a specific effect. The wound heals up better when it is used than under any other form of treatment that I have tried, and in a large number of cases the sugar disappears entirely from the urine. Whether the disappearance of the sugar signifies that the patient was only suffering from severe glycosuria, or whether this result is only temporary, I am unable to say.

As to the legions of other methods of treatment which have been recommended they appear to me to be unsatisfactory, unreliable, and unnecessary.

A case has been reported in which anti-streptococcic serum was used successfully in a serious case "where the disease continued to spread, in spite of incision and other treatment." When our dream of a Pasteur Institute for Southern India has been realized we shall probably be in a situation to treat most of our cases by this method, till then excision seems to me to be the method.

No matter how the carbuncle is treated locally, of course suitable constitutional treatment should be carried out,

with careful dietary, more especially in the case of diabetic patients.

### The use of Hypnotism in Medicine & Surgery.

#### I. HISTORY.

HYPNOTISM, Mesmerism, Animal Magnetism, call it by whatever name you will, has been known and practised in some form or other from the earliest times in Egypt, Persia and India as well as in several European countries. But the authentic records about its practice date from the time of Mesmer. Fredrich Anton Mesmer was born at Weiles near Stein in 1743. He graduated M. D. in 1766, defending a thesis "on the influence of the Planets on the Human body." After his graduation at Vienna he went and settled down in Paris and soon created a great sensation in that city on account of the wonderful cures he was alleged to have effected by means of Magnetism. Dr. George Kingsbury in his book on the practice of hypnotic suggestion gives the following description of Mesmer's practice:

"Mesmer surrounded his treatment with a great deal of impressive mystery. His patients assembled in a large room dimly and religiously lighted, and from an adjoining room came the enchanting strains of harp or harpnicorn. In the centre of the patients' room stood the "baquet" a large tub containing bottles; iron rods were also stretched outwards from the tub, and these were held by the patients, while they gazed upon the bottles. Cords connected the patients to each other. Mesmer himself walked about the apartment carrying an iron rod, with which he touched the patients. Sometimes they discarded the rod in order to magnetize special patients either by means of stroking or by what we call fascination. Many of his clients were convulsed, some became violent and for the latter padded rooms were provided. The clamour to be treated by Mesmer became so great that the hotel which he rented could not hold the applicants, and he had to undertake to

impart the magnetic virtue to a tree in one of the streets round which hundreds of people gathered daily."

The faculty of medicine in Paris, however, condemned Mesmer and his practice, and he left Paris in disgust. He returned again in 1784 and a government commission appointed by Louis XVI again pronounced against his practice and after that Mesmer left Paris for good and settled down in Germany. In Germany he seems to have met with greater success, for Wolfart who was deputed by the Prussian Government to examine and report on Mesmer's practice declared in favour of Mesmer and adopted his practice in his own hospital treatment.

Mesmer died in 1815. The year before Mesmer's death (in 1814) the Abbi Faria suggested that the phenomena of Mesmerism were subjective in origin, but his views were not generally accepted and soon forgotten. Even after Mesmer's death the influence of his teaching and practice was widely felt, and Mesmerism was practised by many people in different countries. But by far the most important and influential of those who followed Mesmer's teaching was John Elliotson. Elliotson was born in 1791. He received his medical education at the University of Edinburgh where he graduated M. D., after which he studied at some of the most important medical schools on the continent. In 1817 he was appointed assistant Physician to St. Thomas's Hospital, London, and six years later was appointed Physician to the same Hospital. In 1837 Elliotson was appointed Professor of the practice of Medicine at University College, London. He met Du. Potet of Paris in 1837 and it was after that meeting that Elliotson began the practice of Hypnotism in the University college.

Hospital. His hypnotic practice at the hospital attracted a good deal of attention, and it also roused the opposition of the Hospital authorities. In 1838 the council of University college Hospital passed the following resolution: "That the Hospital committee be instructed 'to take such steps as they shall deem most advisable to prevent the practice of Mesmerism or animal Magnetism in future within the Hospital'". Elliotson resigned his appointments in the college and hospital. In 1846 he was invited to deliver the Harvian Oration by the Royal college of Physicians of London. And in spite of the virulent attack of the *Lancet* on him, he accepted the invitation and delivered his address the subject of which was Mesmerism.

In 1843 Elliotson and his sympathisers started the "*Zoist*," a journal for the collection and diffusion of information connected with cerebral Physiology and Mesmerism. This journal existed from 1843 to 1855. As the result of the influence of the *Zoist*, a Mesmeric infirmary was opened in London, and Mesmeric Institutions were formed in Edinburgh, Dublin and elsewhere. Thousands of patients were mesmerised at these institutions and hundreds of surgical operations were performed under Mesmeric influence. At one of these institutions in Exeter Mr. Paraker, surgeon, claimed to have mesmerised 1200 persons and to have performed 200 painless surgical operations. In the meantime the *Lancet* continued its most virulent attack on Elliotson and his followers. Elliotson died on July 29th, 1868.

The next most important personage in the history of Mesmerism after Elliotson is James Esdaile. He was born in

February 1808. He graduated at Edinburgh in 1830 and then obtained an appointment under the East India Company. Esdaile began his Mesmeric practice in April 1845, when he was in charge of the Native Hospital, Hooghly.

At the end of the year Esdaile had recorded over 100 cases in which he had successfully used Mesmerism. He reported his results to the Government. On receipt of Esdaile's report, Government appointed a committee of investigation mainly composed of Medical men. The report of the committee was favourable to Esdaile, and he was placed for a year in charge of a small experimental Hospital in Calcutta in order "that he may extend his investigations to the applicability of this alleged agency to all descriptions of cases, medical as well as surgical, and of all classes of patients European as well as native."

At the end of the year the Medical officers reported: "that complete insensibility to pain was obtained by Mesmerism in the most severe operations, and that its influence in reducing shock was decidedly favourable." Before the end of the year of trial, a petition was sent to the Governor-General signed by over 300 native gentlemen of Calcutta praying for the continuance of the Mesmeric Hospital. But in spite of the favourable report of the Medical Officers and the petition of the native gentlemen, the Mesmeric Hospital was closed. But another Mesmeric Hospital supported by voluntary contributions, mainly drawn from native sources, was opened in September 1848 and Esdaile was put in charge of this new Hospital. This had also to be closed at the end of 6 months as Esdaile was transferred elsewhere. Esdaile left India

in 1851 and settled in his native city of Perth. Esdaile died in January 1859 at the age of fifty.

The credit of having rescued Mesmerism from ignorance and superstition belongs undoubtedly to James Braid even more than to Elliotson or Esdaile.

James Braid was born in Fifeshire about 1795. He was educated at Edinburgh and qualified there as a Surgeon. After a few years' practice in Scotland he removed to Manchester where he remained till his death enjoying a good professional practice. On November 13th 1841 he was present for the first time at a Mesmeric seance when Lafontaine was the operator. After he had witnessed a couple of these operations he began to make experiments himself as the result of which he came to the conclusion that the mesmeric phenomena were purely subjective, a view which had been put forward by the Abbi Faria as early as 1814. In 1843 Braid published *Neurypnology, or the rationale of nervous sleep*. After having established the subjective origin of the phenomena he suggested that they should be called 'Hypnotic' instead of 'Mesmeric' and suggested the following terms:—

Hypnotic, the state or condition of nervous sleep.

"Hypnotise, to induce nervous sleep.

Hypnotised, put into the condition of nervous sleep.

Hypnotism, nervous sleep.

Dehypnotise, to restore from nervous sleep.

Hypnotist, one who practises neurohypnotism.

These terms now familiar to everyone we owe to James Braid. Braid said that

"hypnotism was capable of curing many diseases for which formerly there had been no remedy; but none but a medical man was competent to employ it. Hypnotism was not a universal remedy, and whoever talked of such a thing was either a fool or a knave." Braid was the author of several works on Hypnotism many of which have been translated into French and German. Braid died suddenly in March 1860.

In 1859, Dr. Azam of Bourdeaux became acquainted with Braid's work and commenced to investigate the subject. He published his results in the *Archives de Médecine* in 1860. About the same time Broca read a paper on Hypnotism before the *Académie des Sciences* which attracted much attention. In 1860, Dr. A. A. Leibeault took up the study of Hypnotism. In 1864, he settled down in Nancy and practised Hypnotism gratuitously among the poor and became the founder of the Nancy school of Hypnotism. His name became known throughout the world and medical men flocked from all countries to study the new therapeutic method. To Leibeault we owe the development of modern Hypnotism. In 1878, Charcot drew public attention to the subject of Hypnotism, and he and his followers formed what has been called the *Salpêtrière School*. Since then several workers in great Britain, France, and Germany have taken up the study of Hypnotism. Professional opinion which has been for a long time against Hypnotism has come round to look upon it with favour and encouragement. In 1891 the British Medical Association appointed a committee consisting of Sir William Broadbent, Sir William Gairdner, Drs. Clouston, Drummond, Kingsbury, Need-

ham, Conolly Norman, Suckling, Hack Tuke, Outterson Wood, and Yellowlees, to investigate the nature of the phenomena of Hypnotism, its value as a therapeutic agent and the propriety of using it. At the annual meeting of the British Medical Association 1892, this committee presented a unanimous report from which we extract the following paras:—

"The committee are of opinion that as a therapeutic agent Hypnotism is frequently effective in relieving pain, procuring sleep, and alleviating many functional ailments. As to its permanent efficacy in the treatment of drunkenness, the evidence before the committee is encouraging, but not conclusive.

Dangers in the use of Hypnotism may arise from want of knowledge, carelessness, or intentional abuse, or from the too continuous repetition of suggestion in unsuitable cases.

The committee are of opinion that when used for therapeutic purposes its employment should be confined to qualified medical men, and that under no circumstances should female patients be hypnotised, except in the presence of a relative or a person of their own sex.

In conclusion the committee desire to express their strong disapprobation of public exhibitions of hypnotic phenomena and hope that some legal restriction will be placed upon them."

After this very brief resume of the history of Hypnotism, I will pass on to the consideration of the different methods of inducing Hypnosis.

#### METHODS OF INDUCING HYPNOSIS.

(1) *Mesmer's Method.* Mesmer put his hands upon the shoulders of the subject, then brought them down the arms to the extremities of the fingers, and after holding the thumbs a moment repeated this process two or three times. He also touched the seat of pain with his fingers, or with the palm of his hand, following the directions of the nerves as much as possible.

(2) *Esdaile's Method.* Esdaile put the patient to bed in a darkened room, directed him to close his eyes and to try to go to sleep. The operator then made passes without contact over the entire body, and from time to time breathed gently upon the head and the eyes. The process was continued for an hour, and at the end of it many of his patients were sufficiently influenced to undergo painless operations.

3. *Braid's Method.* He took a bright object, generally his lancet case, and held it in his left hand about a foot from the patient's eyes, and at such a distance above the forehead that it could not be seen without straining. The patient was told to look steadily at the object and to think of nothing else. The operator then extended and separated the fore and middle fingers of the right hand, and carried them from the object towards the patient's eyes. The lids generally closed involuntarily; if this did not happen, the process was repeated. The patient was told that he was to allow his eye-lids to close when the fingers were again carried towards them, but that the eye balls were to be kept fixed in the same position and the attention concentrated on the idea of the object. At a later date Braid emphatically asserted that *direct verbal suggestion* afforded the best method, both for inducing Hypnosis and for evoking its phenomena. Physical methods, he regarded, simply as indirect suggestions, their influence depending upon the mental states they excited.

4. *Liebeault's Method.* The patient was first placed in an arm chair, then told to think of nothing, and to look steadily at the operator. If the eyes did not close spontaneously Liebeault requested the patient to shut them, then proceed-

to make suggestions like the following:—"Your eye-lids are getting heavy, your limbs feel numb, you are becoming drowsy, etc. etc. etc." This was continued for a minute or two; then Liebeault placed his hand upon the patient's body and suggested local warmth.

5. *Bernheim's Method.* Bernheim first makes explanatory suggestions to remove the patient's fears and then says:—"Look at me and think of nothing but sleep; your eye-lids begin to feel heavy, your eyes are tired; they begin to blink, they are getting moist; you cannot see distinctly. "They are closed." Some patients close their eyes and fall asleep immediately, while in others the process has to be repeated.

6. *Beaunis' Method.* He uses the method of 'fixed gazing.' He says to the patient: "Look at me very steadily," and at the end of a little time his eye-lids close and he sleeps.

7. *Wetterstrand's Method.* In addition to making verbal suggestions he employs passes more largely than is usually done by members of the Nancy School; these were made over the eyes, face, and arms, and always with contact. Sometimes he would touch the forehead with one hand while with the other he pressed heavily over the region of the heart. Before commencing the passes he generally requested the patient to look at his eyes for a short time. The patients rested quietly for an hour while Wetterstrand passed from one to the other whispering suggestions audible only to the person addressed.

8. *Charles Richet's Method.* "I place my patient in an arm chair," says Richet of Paris, "in front of me, in each of my

hands I take one of his thumbs, and squeeze them somewhat strongly and with fairly uniform pressure. After three or four minutes of this process I make passes without stretched hands; these consist of uniform movements from above downwards in front of the eyes, as if I desired to close them.

9. *Luys' Method.* The late Dr. Luys of Paris frequently succeeded in inducing Hypnosis by making his patient look at a revolving mirror.

10. *Voisin's Method.* In certain cases of insanity, the late Dr. Auguste Voisin of Paris attempted to induce hypnosis by force. The patient either held by assistants or placed in a straight jacket, had his eyes kept open and was compelled to look at the light of a Magnesium lamp or at Voisin's fingers.

11. *The Amsterdam Method.* This is the method employed by Drs. Van Renterghem and Van Eeden of Amsterdam. These doctors place their patients lying down, close their eyes, and verbally suggest sleep. They also gently stroke the forehead and temples.

12. *Darling's Method.* This was to give the patient a small metal disc, which was held in the hand and steadily looked at.

13. *Laségue's Method.* LaSégue, a Paris doctor, strongly advocated closing the eye-lids and making gentle pressure on the eyeballs which was sustained for several minutes.

14. *Berger's Method.* Professor Berger of Breslau held that warmth was alone sufficient in many cases to induce hypnosis. He found in some cases his hot hands held near the head of the sub-

ject was sufficient. He also claimed similar results by putting warm metal plates near his patients' heads.

15. *Fascination or Donatism.* By this method the subject is induced to gaze steadily into the operator's eyes. In a short time it is found that the subject will imitate every gesture of the operator, all the while keeping his eyes fixed on those of the operator.

16. *Fright.* Charcot found that in many of his subjects the unexpected noise of a Chinese gong, or the sudden flash of a magnesium or electric light produced Hypnosis. But all Charcot's subjects were hysterical.

17. *Magnets.* Lan Douzy states that a magnet may, even without a person's knowledge, bring about Hypnosis. This observation is supported by Binet and Fèrè.

18. *Electric Battery.* Weinhold declares that he succeeded in hypnotizing by means of an electric current.

19. *Monotonous songs, sounds, &c.* Charcot produced Hypnosis in some of his subjects by placing a large tuning fork near his subjects, and kept vibrating by means of an electro-magnet. The ticking of a watch held to the ear is sometimes capable of producing Hypnosis. So also does slow music sometimes produce Hypnosis. Binet and Fèrè succeeded in producing Hypnosis by fatiguing the sense of smell with the odour of musk.

20. *Pressures on zones hypnogenes.* Professor Pitres of Bordeaux states that Hypnosis can be induced by pressure on certain parts of the body which he terms the zones hypnogenes. Stimulation of the muscular sense is also said to induce Hyp-

nosis or allied states, and of this numerous examples are claimed to be formed in the various dances practised by certain Eastern tribes.

Some hypnotists claim to have used Cannabis Indica, Chloroform, Alcohol, Chloral and Morphia as aids to producing Hypnosis. But these are not generally used.

Such are the chief methods of inducing Hypnosis. As to the methods of terminating Hypnosis they range themselves under two classes: (1) Physical, (2) Psychical. Among the Physical methods are blowing sharply on the patients' eyes, rubbing the eyelids and eyebrows or sprinkling cold water on the face. According to Pitres pressure upon certain parts of the body which he calls zones hypnogenes will terminate Hypnosis. The psychical method of terminating Hypnosis is used by the followers of the Nancy School. They suggest during Hypnosis that the subject shall awake at a given signal as, for example, when the operator says "Awake."

Next we will discuss the practical application of Hypnotism in Medicine, Surgery and Midwifery. Here at the very outset let me say, that no Medical man who uses Hypnotism in his practice as a therapeutic agent, believes in its efficacy in all classes of cases. Such assertions about the universal utility of Hypnotism in all classes of medical and surgical cases, emanate from the Quack and Charlatan. Dr. Milne Bramwell says that "it ought to be clearly understood that those who employ Hypnotism regard it only as an additional weapon by which disease may be combated. They use it just as they worked any other new remedy or fresh form of treatment that advancing science

has brought within their reach." Dr. Kingsbury says: "I do not for one moment believe that all ailments, whether of a nervous or functional character, are amenable to hypnotic suggestion. But I do believe that it is justifiable to try this method, either alone or in conjunction with medicinal treatments in these cases."

#### HYPNOTISM IN SURGERY.

THE use of hypnotism in surgery has been mainly confined to producing general anaesthesia for the performance of painless operations. The most remarkable series of painless mesmeric operations ever recorded were done by Esdaile in India. Esdaile is reported to have removed a large scrotal tumour (Elephantiasis) from a patient under mesmeric influence. The tumour after removal weighed 103 lbs. "During the whole operation," says Esdaile, "I was not sensible of a quiver of his (the patient's) flesh. The next case that Esdaile reports is even more remarkable than the removal of the scrotal tumour. It was a case of tumour of the maxillary antrum, and Esdaile is reported to have removed the superior maxillary bone under mesmeric influence. This is one of the most severe and protracted operations in surgery, and the patient afterwards informed Esdaile that he was quite unconscious up to the termination of the operation. Esdaile also reports several cases of amputations done under mesmeric influence. Dr. Milne Bramwell reports operations for strabismus done under hypnotic influence and several cases of extractions of teeth also. Dr. Schmeltz of Nice reports a case of removal of a sarcomatous tumour of the breast and an operation for Ectropion of the lower eye-lid both done under hypnotic influence. Dr. Edward Wood of America operated on a case of Necrosis of

the upper third of the humerus, Dr. Grossman on 8 cases of fractures and dislocations, and Dr. Forel of Switzerland on a case of cataract,—all under hypnotic influence. Among other operations reported as having been performed under hypnotic influence are: (1) Colporrhaphy for cystocele in a young woman by Dr. Tillaux of Paris and (2) removal of a uterine fibroid in a woman aged 34 by Dr. Bourdon of Menn.

These and many other cases have been reported by Medical men in different countries, but these reports do not convince us of the superiority of the anaesthesia of hypnosis over the ordinary anaesthesia of Chloroform or Ether.

Hypnotic anaesthesia is difficult, and uncertain of induction to the necessary degree. But the supporters of hypnotic anaesthesia claim for it a number of advantages over the other forms of anaesthesia, namely:—

- (1) No abstinence from food is necessary.
- (2) Nervous apprehension can be removed by suggestion.
- (3) Hypnosis is pleasant and devoid of danger.
- (4) It can be maintained indefinitely and terminated at will.
- (5) The patient can be placed in any position without risk and gags and other retentive apparatus are unnecessary.
- (6) Analgesia alone can be suggested and the patient left sensitive to other impressions.
- (7) In labour cases the influence of the voluntary muscles can be increased or diminished by suggestion.



- (8) There is no tendency to sickness during the operation.
- (9) Pain after operation or during subsequent dressing can be suspended.
- (10) The healing process is very rapid.

#### HYPNOTISM IN MIDWIFERY.

It has been claimed that hypnotic suggestion completely obliterates the feeling of pain without in the least diminishing the force of the uterine contractions. But we are told that if this is to be successfully done in any particular confinement, the patient should be familiarized with the process by a few preliminary sittings. Cases of confinements during hypnosis have been reported by Dr. Kingsbury of Blackpool, Dr. Von Schrenck-Notzing, Dr. Wetterstrand, Dr. Pritzel of Vienna, Dr. Mesnet of Paris, Dr. Fraipont of Belgium, Dr. Fanton of Marseilles and Dr. Dobrovolsky of Switzerland. All these medical men claim that their patients felt no pain whatever, although some of the cases were tedious and instrumental cases. In fact, Dr. Fanton claims: "that suggestion acts directly on the uterus itself; the operator can thus cause its contractions to appear or disappear at will; and in complicated cases this may save the life of mother and child. Further, uterine inertia may be successfully combated without the use of Ergot, and the forceps frequently rendered unnecessary. The after-contraction of the uterus can be excited by suggestion and post-partum hemorrhage prevented. In case of adherent placenta, turning, etc. the uterus can be relaxed by suggestion and the necessary operations greatly facilitated." All these are most wonderful, but Dr. Fanton claims to have done something more than all these. He claims to have successfully excited premature labour by suggestion.

All that we can say is that we want little more evidence before we can accept these startling results.

#### HYPNOTISM IN MEDICINE.

HYPNOTISM has been employed in the treatment of a number of diseases such as Rheumatism, Sciatica, Tic, Pleurisy, Insomnia, Headache, Indigestion, spasmodic affections, Eczema, Writers' cramp, Constipation, Diarrhoea, Anaemia, Hysteria, Hystero-epilepsy, Gastralgia, stammering, Enuresis and Neurasthenia. That is a sufficiently comprehensive list. But of all these Hypnotism has given its best results in the treatment of functional nervous disorders. Many cases have been reported by many medical men of cases of Hysteria in its various manifestations, having been successfully treated by hypnotic suggestion. As the history of the treatment of those cases is pretty much the same in every case, I shall not unnecessarily prolong this article by going into details of those cases.

T. M. N.

N. B. I shall discuss the phenomena of Hypnosis, both physiological and psychological, the different stages and the theories of Hypnosis, in a separate article.



## Cases and Comments.

### A Case of Severe Neuralgia.

#### Neurectomy of Both Divisions of the Frontal Nerve.

##### RECOVERY.

G. P., a gentleman from Malabar, consulted me on the 25th January 1903, for severe headache on the left side of his head. The headache usually came on at sunrise and left him in the evening. He used to have the attacks for a number of days followed by a few days during which he was free from headache. The headache was very severe when it lasted. He was for some time under Dr. Koman's treatment, who tried almost all the drugs which are said to be of benefit in this class of cases but failed to derive any permanent cure. It was noticed that the patient used to get a thin watery discharge from the nose two or three days before the headache came on. Suspecting that there may possibly be a cause of nasal origin for the headache, Dr. Koman advised the patient to see me. When I examined him on the 25th January 1903, I found an enormously hypertrophied inferior turbinate body in the left nostril with deflection of the nasal septum to the right. I recommended the removal of the hypertrophied inferior turbinate body. But as the patient was then free from headache he wanted to go home to Malabar to transact some urgent business and promised to return in a month's time to undergo the operation. He came back to Madras and saw me again on 8th March. By that time the headache had returned and he was using some powders prescribed by Dr. Koman which gave him temporary relief. On March 10th, I removed the left inferior turbinate after a free application of solu-

tion of adrenalin chloride. There was very little bleeding at the time of the operation and the patient made a good recovery. In a week's time the wound was healed and the watery discharge from the nose entirely stopped. The headache also became less severe but it never entirely stopped. About the 22nd March the headache returned with its usual severity although this time there was no nasal discharge accompanying it. Tenderness over the region of the frontal sinus made me suspect affection of that cavity. But on trans-illumination both the frontal sinuses were remarkably clear. After that there was no appreciable cause so far as the nose was concerned, and so I came to the conclusion that it was a pure neuralgia of the supra orbital nerve. As the patient was suffering intense agony and as medicines failed to give any relief, I decided on performing neurectomy of the supra orbital nerve. On the 2nd April 1903, I performed neurectomy of the supra orbital (left) under chloroform making the usual horizontal incision along the superior orbital margin. Dr. K. Madhava Menon assisted me at the operation. After the operation the headache absolutely stopped. A week after the operation the patient left for Malabar. For about 5 months the patient was entirely free from headache. On the morning of September 10th 1903, the patient walked into my consulting room and complained of severe headache. He has been suffering from headache for the last 4 or 5 days, he said, and that the headache was, if anything at all, more severe than before. A careful examination of the nose satisfied me that nothing was wrong in that quarter. The re-appearance of the headache after a free neurectomy of the supra orbital was possibly due to involvement of both divisions of the frontal nerve. At the

urgent request of the patient to do something to relieve him of his headache, I put him under chloroform assisted by Dr. Madhava Menon, on the 14th September. I made a long incision a little below the orbital margin and exposed the frontal nerve before its division into the supra orbital and supra trochlear. I divided the supra trochlear nerve removing a small piece of it. Immediately after that I noticed another large nerve placed internally to the supra orbital foramen. Evidently here was a case in which the supra orbital nerve divided into its two primary branches before it passed through the supra orbital foramen. But what was more remarkable still was that the branch that passed through the supra orbital foramen was the smaller of the two divisions—a very rare occurrence. I divided this branch of the supra orbital nerve also and then closed the wound. The wound healed in about 4 or 5 days and at the end of the week I permitted the patient to return home. He has had no recurrence of the headache till now—over 9 months since the second operation.

T. M. N.

### PILOCARPINE

#### In the treatment of Hiccough.

BY U. RAMA RAU,  
Medical Practitioner.

I was called in to see a patient aged about 35, at Triplicane, last month suffering from chronic rheumatism and hiccough. The symptoms present, when I took charge of the case, were as follows: As my observations are confined to hiccough, I shall confine my description to it. The hiccough was of a very severe type, having 40 hiccoughs in the course of a minute. He was quite unable

to take even an ounce of milk. Unable to sleep, very restless, tongue was perfectly dry and coated, temperature normal, bowels constipated, abdomen bloated with gas.

**Treatment:**—I commenced the treatment with an ounce of sulphate of magnesium and 10 grs. of carbonate of magnesium in 2 oz. of peppermint water. After 2 hours he had 6 very good watery motions and he felt considerably relieved, and the hiccough got better, being reduced to 10 a minute. I prescribed an ordinary carminative mixture, one ounce to be taken every 3 hours with Liq. Morph. Hyd. 10 minims per each dose. That brought on sleep and during the interval he was perfectly free from hiccough. The whole of that day he was perfectly free from hiccough. Next day it appeared with double vigour, the hiccough was doubled and went up to 80 per minute. Thinking it to be due to gastric irritation, I prescribed liqr. bismuth, acid hydrocydil, soda bicarb., in effervescing mixture to be given every 3 hours. After finishing 6 doses, the patient was as bad as ever. Next day I gave him cocaine hydrochlor, gr.  $\frac{1}{4}$  every 4 hours, cocaine mitigated a little, but it could not stop it entirely. The following were tried with no improvement. Emetic, mustard poultice to the pit of the stomach, cervical spine, and over the course of the phrenic nerve, to influence the nerve supply of the diaphragm. Injection of morphia hypodermically gave only a temporary relief till the action of morphia passed off, 40 grs of potassium bromide and 20 grs. chloral had absolutely no effect whatever. Chloroform inhalation had some effect during its influence. Dr. W. Whittle, M.D., recommends pilocarpine injection as one of the remedies in such cases. He does not say how it acts, but recommends its use empirically. So I tried the effect of pilocarpine in this case. To my surprise one tabloid of pilocarpine (B. & W. & Co.) injected hypodermically brought out profuse perspiration and the hiccough stopped entirely and never re-appeared.

I had no occasion for a second injection. Though hiccough is an ordinary complaint sometimes it is very tedious to treat. As the presence of hiccough as a complication of any disease is looked upon by the native population of Madras as an unfavourable and ominous symptom of approaching death, it is important to have an effective remedy for this sometimes troublesome symptom, as its speedy relief will help the medical man to relieve the patient and gain the confidence of the patient's relatives. I publish this case to elicit the opinion and experience of my fellow practitioners as to the management of this common symptom.

## THE ANTISEPTIC.

July, 1904.

### "The Attitude of the Medical Profession Towards the Treatment of Diseases by Unqualified Persons."

Under the above heading the *British Medical Journal* of May 7th, 1904, publishes an excellent leading article in which the question of the relation of medical men to unqualified men who treat disease is discussed. The occasion for the article is a letter from a medical man, Dr. Leeson Jones, in which that gentleman complains that in certain special spheres of practice the treatment of disease is with increasing frequency carried out by persons who possess no medical qualifications. "Dr. Jones complains," says the *British Medical Journal*, "that medical men who take up electro-therapeutics are

not supported, as they should be, by their colleagues, but that the practical application of electricity, radiography, and X-ray therapeutics is entrusted to lay persons. This is the case at several of the London hospitals." The article deals only with electrical treatment and comes to the conclusion that "no establishment in which every detail of the treatment is not under direct and continuous medical supervision should receive the support of the medical profession." With that conclusion every medical man will agree. The question so far as England is concerned is very limited. The medical profession in that enlightened country has successfully fought unqualified quackery, and we have no doubt that even in the department of electro-therapeutics they will easily put down unqualified practice. But so far as we are concerned, the discussion of such questions inevitably makes us think of affairs nearer home with a sigh of despair. In a land where unqualified medical practice is at a premium, and where even the faintest protest against the encroachment of the unqualified persons into the domain of the legitimate duties of the qualified medical man is met with the cry of professional jealousy, the discussion of the relation of the medical profession to unqualified men who profess to be experts in medical treatment is a thankless task. But even in this benighted land, to hastening ills a prey, where doctors decay and quacks accumulate,

we are certain that there are some medical men at least who are not dead to all sense of professional honour and respectability, to whom we may confidently appeal to make a strong effort to rescue rational medicine in this country from the clutches of empiricism and quackery wherein it is fast getting entangled. We have not advanced far enough in this country to produce quacks in electro-therapeutics or X-ray therapeutics. Those are products of a higher civilization. It is in the department of therapeutics that shallow pretensions are boldly advanced in this country. And that is the one department which is most favourable for the development of quacks. For as Professor Sir Thomas Fraser said: "suffering humanity is naturally anxious for relief, and only too prone to believe assertions dogmatically expressed, and accompanied with a bold misuse of scientific phraseology." The ranks of the unqualified quacks in India have of late years been reinforced by some—though few—qualified men who, under the pretext of resuscitating the ancient medical system of India, find dealings in secret remedies profitable. We would certainly welcome any addition to the medical and scientific knowledge of the present day, whether that knowledge is derived by dipping into the obscure works on Ayurvedic medicine or by unravelling the mysteries of the Chinese system of medicine. But we object to the practice of secret medicines by quali-

fied practitioners. When these try to hide their unprofessional conduct of dealings in secret medicines by invoking the sacred sentiment of patriotism, one is forcibly reminded of Samuel Johnson's definition of patriotism that "it was the last refuge of a scoundrel."

As long as the Government of India declines to pass any effective legislative measures to limit the mischief that a quack can work, if not altogether to prevent it, the quack will flourish and nothing can be done by the members of the medical profession except to give him a wide berth. But what is to be the relationship between the members of the medical profession and those few qualified men whose study of Ayurvedic or other systems of medicine have led them into paths which, in our opinion, amounts to quackery. If those men can prove to the scientific world at large that their pretensions have a solid foundation, they must deserve all the credit that attaches to the expounders of great scientific truths. But if the man with a medical degree professes to be able to cure an internal malignant neoplasm by the external application of a specially prepared ointment, or who advertises his cures of Retinitis Pigmentosa by the application of a medicated oil to the head, and so on, what are we to do with men of that description? So far as the medical profession is concerned we should say that the best thing to

be done would be to treat him as if he was an ordinary quack, and leave it to the Universities to take such action as those bodies may deem fit to prevent their degrees from being dragged in the mud.

### More about Adrenalin.

IN our May number we published an analysis of 69 cases in which adrenalin had been tried as a Haemostatic. Elsewhere we re-publish from the *British Medical Journal* of March 19th, 1904, a clinical lecture delivered by Dr. James Barr of Liverpool on the treatment of serous effusions by the injection of solutions of adrenalin chloride. Dr. Barr describes cases of pleurisy, pericarditis and ascites having been successfully treated by the injection of drachm doses of solution of adrenalin chloride (1 in 1000) after the fluid had been carefully aspirated away. Cases in which mere tapping was useless, as the cavity refilled after a very short interval, were benefited by the injection of adrenalin. After a single injection of the solution the serous effusions never recurred. This is an important step in unravelling the wonderful action of this powerful drug. In Madras, where hydroceles abound, it is worth while trying the effect of injections of adrenalin into the tunica vaginalis after it had been previously emptied of the hydrocele fluid by tapping. We shall feel obliged if some of our readers

will try this and publish their results in the columns of the *Antiseptic*.

In the *British Medical Journal* of April 30th, 1904, Dr. A. S. Mystle reports two cases showing the action of suprarenal extract in neurotic heart. As a vaso constrictor by raising the blood pressure it ought to be serviceable in such cases.

As one of the cases of obstinate pleuritic effusion successfully treated by Dr. Barr was of cancerous origin, there is an opportunity for sensation-mongers to hail adrenalin as the new cancer cure. We should not at all be surprised if some enterprising chemist's traveller, turns up one of these days with a preparation of suprarenal extract under a new-fangled name with a set speech extolling the virtues of the new cancer cure.

### Our Contemporaries.

(B. M. Journal.)

#### A CLINICAL LECTURE

ON THE

#### Treatment of Serous Effusions.

Delivered at the Liverpool Royal Infirmary.

By JAMES BARR, M.D., F.R.C.P.,

President of the Liverpool Medical Institution; Senior Physician, Liverpool Royal Infirmary; and Lecturer on Clinical Medicine, Liverpool University.

GENTLEMEN,—I wish to introduce to you, and through you to the medical profession, a new method or methods of treating serous effusions. On previous occasions, I have lectured to you on pleurisy, pericarditis, ascites, and hydrocephalus, but to-day I

wish to confine our attention to the marked evolution which has taken place in my views on the treatment of serous effusions since August 5th, 1902. On that day I was asked to see, with Mr. Paul and Dr. Chisholm, a lady on whom Mr. Paul had performed a short time previously an exploratory operation for abdominal cancer. He found a very large disseminated and highly vascular mass which bled freely on the slightest touch. He drained off a considerable quantity of ascitic fluid and then closed up the abdominal wound, which rapidly healed. I found her right pleura full of fluid and Mr. Paul drew off 70 ounces of serum tinged with blood. Apparently the cancer had extended to the pleura. Five days after that, she had to be tapped again, and 64 ounces were drawn off. Four days later, she was aspirated again and about 56 ounces removed. Again, after four days she was tapped, and over 60 ounces removed. The fluid accumulated so quickly that she had scarcely a day free from distress in breathing between the aspirations, and I saw that this state of matters could not continue long. I then began to think what we could do to lessen this secretion. All the fluid was blood-stained, and it was evident to me there were secondary cancerous deposits in the pleura, so therefore I could not expect to do much, but it seemed to me that if we could only make her life more comfortable a great point would be gained. After thinking the matter out as to what would be most likely to lessen the secretion I came to the conclusion to try an injection into the pleura of suprarenal extract, and I fixed upon Parke, Davis and Co.'s adrenalin chloride, 1 in 1000, as being a sterile preparation. I empirically fixed one drachm as the amount to be injected. I mentioned the matter to Mr. Bickersteth, who had succeeded to the surgical charge of the case in the absence of Mr. Paul, who had gone away on his holidays. Accordingly, after the fifth aspiration, which took place four days after the preceding one, Mr. Bickersteth injected one drachm of

adrenalin chloride solution, 1 in 1000; there was no further secretion, consequently no further tapping, and the old lady spent the remainder of her life in perfect comfort, so far as her chest was concerned. The relatives asked me why she did not receive the injection after the first aspiration, and I had to explain to them that this was an experiment, which, so far as I was aware, had never previously been performed. Since then I have used this injection after removal of the fluid in a fair number of cases of pleurisy with effusion, and invariably with success. The quantity injected in each case has been one drachm, and there has been no second tapping.

I soon extended the treatment to ascites. My first cases were those due to hepatic cirrhosis where the effusion is caused by a mechanical obstruction, and, of course, I did not expect any marked result, and I was not disappointed. However, the rapidity of secretion was diminished, and personally I never saw any ill-effects from the injections of the adrenalin. The quantity employed varied from two to three drachms. I may mention here a case which I saw in consultation with a medical friend to whom I recommended this treatment. My friend told me that after the second injection there was slight collapse, and he did not continue its use. I have no doubt about the collapse, but I am very sceptical about it being due to the adrenalin; in fact, I should expect it by raising the blood pressure to prevent collapse in such cases. Collapse after tapping ascites is not at all an uncommon occurrence in some men's practice, and if you will read their writings you will find that they expect the patient to die a few weeks after the first tapping. This, in my opinion, arises from delaying the operation too long. I have always advocated early and frequent tapping. If you delay doing so until there is an intra-abdominal pressure of  $\frac{1}{4}$  lb. or more to the square inch, and this extends over a superficial area of at least 400 square inches, can

any one be surprised that after the removal of such pressure there should be a sudden accumulation of blood in the splanchnic area which might not only cause collapse but fatal syncope? Fortunately the regulative mechanism of Nature is better than that of the physician, and these catastrophies are not so common as might be expected. On several occasions I have injected three drachms of the adrenalin solution into the peritoneal sac with good effect on the circulation. This patient is at present under the direction of a London physician, so I cannot say how he is getting on, but I expect he is progressing downwards.

My next attack was on the pericardial sac, and this case is one of the three which I am going to show you to-day. This little fellow was admitted on June 8th, 1903, suffering from pericarditis with effusion, and on June 18th, my then house physician, Dr. Lionel Picton, drew off 19 ounces of serous fluid from the pericardium. The fluid quickly re-accumulated, but I postponed, as long as possible, further tapping in hopes that the fluid might be absorbed. Our nurses are very enthusiastic over the adrenalin injections, and Dr. Hay told me that one of them was anxious to know why I had not injected the adrenalin into the boy; the fact of the matter was I had a certain amount of delicacy in tampering with the circulation of the heart itself. However, I determined that if further tapping was necessary I should inject the adrenalin. On the night of June 24th his condition became very critical and about 11 p. m. I went to the infirmary, accompanied by Dr. D. A. O'Sullivan, of London, who was staying with me, Dr. Hay and others. On siphoning off 20 ounces of fluid, his pulse, which had been very weak, small, irregular and barely perceptible, became regular, full and strong. Then forty minims of the adrenalin solution were injected into the pericardium. I was feeling his pulse and noticed it disappear at the wrist,

and the boy became of an ashy leaden hue and had a very anxious expression. The case was now very critical; it was evident that the quantity injected had been too great and the coronary arteries had been almost obliterated.

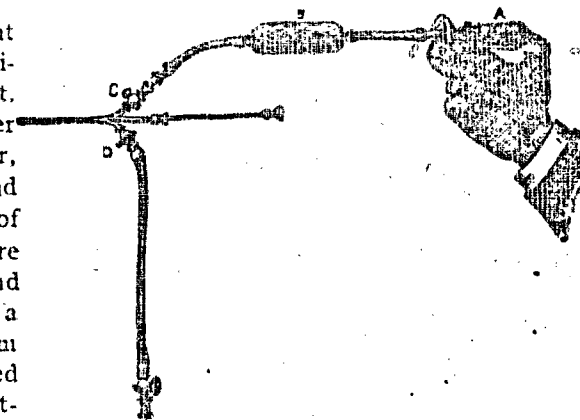
However, I never lose my head in cases of difficulty, so I immediately injected three minims of a 1 per cent. solution of nitroglycerine and two minims of liq. atropinae sulphatis. The boy quickly rallied. If there were any further accumulation of fluid it was only very slight, and, at any rate, there was no further tapping. He next got an attack of left pleurisy, and on August 21st 10 ounces of serous fluid were drawn off and one drachm of adrenalin solution injected. There was no re-accumulation. The case was supposed to be tuberculous, there was an excessive number of lymphocytes in the pleural fluid but its injection into a guinea-pig gave a negative result. Sir W. Broadbent and Dr. Finlayson on going round my wards with me last July were much interested in this boy. He was discharged in fair condition on September 27th, 1903. On October 26th he was re-admitted with his right pleura full of fluid; on October 29th 51 ozs. of fluid were siphoned off, and one drachm of adrenalin solution injected. By this time, I had advanced my treatment a step further. It had occurred to me that if in addition to stopping the secretion by adrenalin I substituted another fluid, say air, for that which was withdrawn I might lessen or prevent subsequent adhesions taking place. With this object in view I injected half a pint of sterilized air, and it was not all absorbed for at least ten days. I think the adhesions on this side are less than on the left. The case still appears to me to be tuberculous, and I am of opinion there is some tuberculous deposit in both lungs. However, I think you will agree that, so far as the treatment of the particular lesion is concerned, it has been wonderfully successful.

On November 14th, 1903, D. O., a joiner, aged 32, was sent to me by Dr. Jones Roberts, of Penygroes, with a diagnosis of tuberculous peritonitis and ascites. On November 17th, I siphoned off 280 ounces of ascitic fluid, and I then introduced into the peritoneal cavity 3ij of adrenalin chloride solution and four pints of aseptic air. Thirteen days later 237 ounces were withdrawn, 3iij of adrenalin chloride and 2 pints of air injected. On December 11th, 196 ounces of fluid were withdrawn, 3iij of adrenalin chloride and 4 pints of sterile air injected. Since then there has been no re-accumulation, and it required between three and four weeks for the complete absorption of the air. His abdomen has gradually shrunk, and the circumference now only measures 31 in. at the level of the umbilicus. At present you can feel friction fremitus in the abdomen, so there is no doubt some lymph glueing some coils of bowel together. On two occasions there has been haematuria, probably due to uric acid.

The third patient, M. C., aged 7, was admitted on January 11th. One pint of fluid was withdrawn from her pleura, 3j of adrenalin chloride and half a pint of sterile air injected, 95 per cent. of the cells in the fluid were lymphocytes, so it is highly probable the pleurisy was tuberculous. However, there has been no re-accumulation, and she is now quite well.

Having devised new methods of treatment it became necessary to invent new appliances for conveniently carrying them out. I entrusted my design to Messrs. R. Sumner and Co., and Mr. Overton, the senior partner, entered enthusiastically into the matter and gave me every assistance. I first got rid of the aspirator as the siphon is much more convenient, does not get out of order, and can be readily sterilized. I then designed a special trocar and cannula with a side arm and a three-way stopcock; this can be used as a siphon, a syringe or aspirator can be at-

tached and injections of adrenalin and air can be given. Mr. Overton thought that men would forget how to turn the tap and it might be a little awkward if their memory failed when the cannula was in the chest, so he designed a trocar and cannula with two arms, one to be used for the siphon and the other for the injection of the adrenalin and the air. Each arm is provided with a stopcock which can be shut when not in use, and at the end of the siphon tube you will notice another stopcock so that the tubing can be kept full of water and the siphon at once started without any risk of introducing non-sterile air into the chest. In order to sterilize the air, I first designed a very elaborate apparatus, which I now show you. It consists essentially of a large Woulfe's bottle with three openings at the top and an outlet at the bottom. Each of the four openings is guarded by a glass stopcock. One opening is in connexion with a water reservoir, the second is fitted with a large thistle head filled with cotton wool for filtering the air, and the third is an outlet for the aseptic air to be driven into the pleural or peritoneal cavity. The bottle and reservoir are filled with an aseptic fluid, then the liquid in the bottle is replaced by filtered air introduced through the thistle head, next the filtered air is driven out of the bottle into the pleura or peritoneal cavity by allowing the fluid to run in from the reservoir.



For the purpose for which it was designed this is a perfect apparatus, every joint is absolutely air-tight, and there is not the slightest risk of any contamination of the air, but I soon found that it was too cumbersome for carrying about, and therefore not likely to come into general use. Mr. Overton now drew my attention to a little instrument which German veterinary surgeons use for introducing aseptic air into the udders of cows. This consisted of a small metal receptacle filled with sterilized cotton wool. I was at first doubtful whether the air driven through this cotton wool under pressure could be properly filtered, but after some experiments I found that it answered my purpose very well. Accordingly, I had a small metallic pump fitted to this receptacle, and the plug at the end of the discharge tube made to fit the cannula. The whole apparatus which I now show you, and of which I append an illustration, consists of a trocar and cannula with two arms and a siphon tube, a syringe for injecting adrenalin, and an apparatus for introducing filtered air. The whole can be boiled with the exception of the cotton wool filter, and it can be sterilized by heat as often as is thought necessary.<sup>1</sup>

(I. N. J. of Surgery.)

### NEPHROLITHIASIS.

By C. H. CHURCHILL, A.M., M. D.

Fort Dodge, Iowa.

**N**ephrolithiasis is meant a pathological condition characterized by the formation of concretions of various size in the kidney substance, renal pelvis or calices. The concretions are formed by the precipitation and deposit of certain solid urinary constituents normally held in solution.

<sup>1</sup> The whole apparatus is supplied by Messrs. R. Sumner and Co. 60A, Lord Street, Liverpool.

They vary in size, from fine sand to the size of a kernel of wheat, pea or walnut, and even, as recorded in one case, to the enormous proportion of a stone weighing five pounds. When large they are usually single, but small concretions are often multiple. They may be round, smooth bodies, but their surfaces are usually rough or mammilated, and when filling the pelvis or calices of the kidney, they are usually rough, branched or coral-shaped. As regards chemical composition they consist of uric acid, oxalate of lime, carbonate of lime, phosphate of lime, a mixture of the last and ammonio-magnesium phosphate (the fusible calculus), cystin, xanthin, urate of ammonium or the mixed urates, and in frequency are found about in the order named.

Alternating calculi are not uncommon, consisting of distinct layers of uric acid, oxalate of lime, or phosphate of lime.

The color differs with the chemical composition, uric acid being reddish yellow, oxalate of lime purplish brown, and phosphates grayish white. The color varies in the different layers in alternating calculi. Exceptional specimens may be yellow, pink, green or blue.

**Etiology.** Nephrolithiasis occurs at all ages, including intra-uterine life, but it is most common before fifteen and after fifty years of age. Uric acid calculi are more common in children, while the phosphate of lime variety predominates after the fortieth year.

It is generally conceded by authorities that men are more subject to this disease than women, though this has not been the experience with some.

Defect in general metabolism is an important element in the etiology and is especially evidenced in the uric acid state and gout. Excessive meat diet and a sedentary life tend to the production of this state and are



therefore causal factors. It is probable that some substance must act as a nucleus around which a calculus forms. Mucus, blood clots, albumin, epithelial cells, and masses of bacteria may be the starting point of concretions, the normal salts of the urine being deposited around these bodies. An abnormal condition of the urine, however, probably renders it possible for deposits to take place. A low percentage of salines favours the precipitation of uric acid and the formation of uric acid stone, while an alkaline urine and an excess of phosphates are favorable to the formation of phosphatic stone. Then an excess of the sparingly soluble elements, such as cystin or xanthin, may be precipitated, though the urine be otherwise normal.

Locality, for some unknown cause, seems to be a prolific source of renal calculi. There are certain localities in England called the "Stone Countries," and some parts of Scotland and the Delta of the Nile are noted for the peculiar frequency with which the inhabitants are affected with these conditions.

Heredity seems to be an important etiological factor. It is as marked as the hereditary taint of rheumatism and gout, and probably its transmission is due to the same peculiar diathesis.

*Pathology.* The disease is usually unilateral, occurring in both kidneys in about fifteen per cent. A calculus may exist in a kidney for some time without producing any recognizable symptoms, but sooner or later pathological conditions will result. The primary lesions are simple inflammation of the pelvis of the kidney, turbid urine, irritation and inflammation of the ureter, bladder, and sometimes the urethra, due to the passage of renal sand or gravel.

The secondary lesions are chronic pyelitis, pyelonephritis and perinephritic abscess, atrophy of the kidney, or a thinning of its substance and dilatation. Hydronephrosis may be a sequel, due to the plugging up of

the ureter by a calculus or closure of the tube by intra-uterine inflammation, or pressure necrosis may cause rupture of the ureter. Splenic and hepatic enlargement may be found with prolonged suppurative pyelonephritis. Then a renal calculus may take up its abode in the bladder, increase in size by accretion, producing a vesical stone.

*Symptoms.* The symptoms may be divided into those of the acute and chronic stages. The acute symptoms are usually ushered in by the passage of a small calculus through the ureter producing renal colic. The paroxysms of pain are exceedingly severe, commencing in the region of the kidney affected and following the course of the ureter down to the bladder. The pain often extends into the thigh and sometimes down to the foot. During these severe paroxysms, convulsions and syncope may occur. Micturition is frequent and painful. Retraction of the testicle on the side affected nearly always occurs. Dr. Montaigae, centuries ago, graphically described the symptoms of a severe attack of renal colic in his own case. It has never been described in a better way, and I quote what he said: "Thou art seen to sweat with pain, to look pale and red, to tremble, to vomit well nigh to blood, to suffer strange contortions and convulsions, by starts, to let tears drop from thine eyes, to urine thick, black and frightful water, or to have it suppressed by some sharp and craggy stone, that cruelly pricks and tears thee." These symptoms persist until the calculus has passed into the bladder, and vary in time from an hour to days. There may be chills and a temperature of 103 degrees, but usually the fever is slight or none. After the passage of the calculus into the bladder, pain in the back and abdominal tenderness on the affected side may persist for several days.

*Chronic Symptoms.* There is usually pain and soreness in the back. Sometimes the pain comes on in paroxysms and is severe, but usually it is of a dull character. Passing

of renal sand is another symptom of the chronic stage, and this may produce irritation of the ureters, and sometimes cystitis. Hematuria occurs frequently, but is not as a rule profuse. It may persist for a long time and is aggravated by exertion. It may disappear for days or even weeks and return after sudden exertion or jolting.

Later in its course pyogenic germs enter into the pathology of the disease and determine the development of suppurative changes in and around the kidney. Severe pain in the back, amounting to colic, with chills and high temperature, followed by profuse sweating, together with smoky or bloody urine containing abundant epithelium, are the prominent symptoms of chronic pyelitis. These symptoms will recur at intervals of weeks or months, for years, and the subject be in otherwise fair or robust health. Therefore the mistake in diagnosing these cases as malaria is frequently made. Pyuria is not always present, but when pus is found in the urine it materially aids in the diagnosis. When perinephric abscesses form the general health begins to show the ravages of the disease in the way of general sepsis, together with the symptoms of pyelitis. Atrophy of the affected kidney is the rule, but it is not infrequent to find the kidney distended to a mere sac and its function destroyed.

As the destruction of the diseased kidney progresses the opposite kidney becomes hypertrophied.

*Diagnosis.* Usually the first symptoms to which the physician's attention is called is an attack of renal colic though the patient may consult his physician for a smarting and burning of the urethra after urinating, and irritation of the bladder and frequent desire to urinate, which are due to renal sand or even microscopical uric acid crystals. Such an array of symptoms ought to put the physician on his guard, for this is the most fortunate time to recognize the condition of the patient. The urine should be examined,

both chemically and microscopically, at frequent intervals, in order to determine the renal condition. If the urine is highly acid, and a large number of uric acid crystals are found in it, the probability is that he has to deal with a uric acid nephrolithiasis. On the other hand, if the urine is alkaline and this is not due to ammoniacal fermentation, caused by retention or cystic stone, and there are abundant phosphates, the phosphatic nephrolithiasis may be expected. Thus the reaction of the urine and the kind of crystals found may determine the kind of calculi present. The oxalate of lime stones usually cause the sharpest pain and the most hemorrhage. Tenderness is usually found on pressure over the loin and over the region of the kidney in front. The X-ray has been successfully employed to diagnose the larger calculi found in the kidney, but cannot be relied upon for the diagnosis of renal sand or smaller concretions. The finding of a calculus passed in the urine after a renal colic renders the diagnosis positive. Attacks of dyspepsia and severe headaches are not uncommon with those affected with nephrolithiasis.

*Differential Diagnosis.* Nephrolithiasis must be differentiated from tuberculosis of the kidney, malignant disease, biliary colic and malaria. The greatest difficulty is encountered in making a differential diagnosis between early tuberculosis of the kidney and nephrolithiasis. Frequent micturition and slightly purulent urine, without history of hematuria, in an individual of strumous habit point to tuberculosis of the kidney, but if there are hematuria, lumbar pains, tender and retracted testicle, there is probably stone in the kidney. In malignant disease the hemorrhage is more profuse, and not made worse by exertion or jolting or accompanied by paroxysms of pain. Pain and hemorrhage are relieved by rest in nephrolithiasis, while in malignant disease hemorrhage may be profuse during absolute rest. When anuria exists, if it appears suddenly it favors the

diagnosis of renal calculus obstructing the ureter. Even though only one kidney is affected, suppression of the urine not infrequently occurs.

Swelling in the loin may be present both in malignant disease and renal calculus, but if there is an antecedent history pointing to a calculus diathesis, before swelling begins, kidney stone is probable.

The diagnosis between biliary colic and renal colic is sometimes difficult when the right kidney is affected. In biliary colic the pain is in the upper half of the abdomen and jaundice appears in about 50 per cent. of the cases. Retraction, pain and tenderness in the testicle, the character of the urine, frequent and painful micturition, and especially hematuria, assist in making the diagnosis of the kidney stone. In severe malarial poisoning hematuria occurs, and the recurrent attacks of backache, chills and fever of chronic nephrolithiasis simulate malaria, but the backache of malaria is not confined to one side, as is usually the case in kidney stone. The other characteristics of the urine are also different.

**Prognosis.** The prognosis of nephrolithiasis should be guarded. Patients, it is true, have recurrent attacks of renal colic for years and, with the exception of the colic, remain in robust health. A large calculus may remain in the pelvis of the kidney for a long time without discomfort, but the sword of Damocles is hanging over them, for pyelitis and its sequelæ are a constant danger.

**Treatment.** The treatment is divided into medical and surgical, the latter of which does not come within the scope of this paper. The medical treatment may be mentioned under two divisions, that for the acute attacks of renal colic and that for the general condition and chronic stage. Paroxysms of renal colic call for prompt relief by hypodermic injections of morphine and atropine, together with hot applications made to the loin. In severe cases it is sometimes necessary to resort to inhalations of chloroform. The

sufferer should be required to drink large quantities of hot lemonade, plain or carbonated water or glycerine and water, to promote the passage of the stone.

In the treatment employed between the attacks diet constitutes an important part and should be regulated in a similar manner as in cases of chronic gout or rheumatism. Red meats and alcohol should be prohibited. Moderate exercise in the open air, sufficient to use up all the nitrogenous food, and reduction of obesity, if the patient is of that habit, are necessary. Large and definite quantities of distilled alkaline or mineral water should be drunk daily. A prolonged sojourn at some of the mineral springs will no doubt do good. The Buffalo Lithia springs of Virginia are probably the best in this country. Londonderry, Otterburn, Saratoga, Bedford, Carlsbad, and Vichy are to be recommended. It is extremely doubtful whether stones formed in the kidney and too large to be passed through the ureter ever become dissolved, notwithstanding some of the claims made for certain drugs and mineral springs. Lithium citrate or carbonate in five grain doses, taken several times daily, seem to have an eroding effect on the uric acid stones and may prevent the formation of new deposits.

Sodium phosphate and potassium acetate, citrate and tartrate are useful. These drugs should be taken with large quantities of water. Recently piperazin, lycetol and urotropine have been used by some as solvents of uric acid stone, and undoubted benefit has been attributed to their use.

Van Noorden advocates the continuous use of calcium salts in the treatment of uric acid calculi, and Crofton, of Chicago, has carried out the treatment in this country with apparent benefit. They favor the calcium carbonate or the natural mineral waters containing the salts of calcium. Crofton advocates the use of large quantities of pure water to which has been added ordinary lime water.

The *modus operandi* of this drug, as explained by these men, seems somewhat far-fetched, but the result shows the possible correctness of their view.

If the calculi are thought to be, the phosphatic or oxalate of lime varieties and the urine is alkaline and phosphates abundant, an attempt should be made to keep the urine in an acid condition. This is more difficult than to render the urine alkaline when its reaction is acid. Saccharin in three grain doses, benzoic and boric acid in fifteen grain doses several times daily are the most satisfactory methods of accomplishing this result. When there is pyelitis or pyuria, utropine or cystogen in five grain doses three or four times daily will, no doubt, retard the suppurative changes. However, when there is a large stone lodged in the pelvis or calices of the kidney, and it is producing disturbances, or when suppurative changes have taken place, the case should be turned over to the surgeon.

posing as an exponent of charity, however, is evidently meant by you to be of very limited application, seeing that you have exhibited precisely the want of sympathy you ascribe to Government medical officers, when you elect to deal with the position of Certificated Sanitary Inspectors in relation to medical subordinates. You state that in the "(a) short period of ten days, (b) during which they undergo a course of instruction at the office of the Sanitary Commissioner, (c) they blossom out into Certificated Sanitary Inspectors \* \* \*, and (d) they start on Rs. 40 pay together with Rs. 30 allowance." The whole of these assertions are absolutely false. Your further remark as to the educational status of these useful public servants and their relative position to Hospital Assistants betrays the most petty jealousy, coupled with ignorance of the whole subject dealt with.

Yours faithfully,

25-5-04. W. G. KING, Lt.-COL., I.M.S.

## Correspondence.

### Certificated Sanitary Inspectors.

TO THE EDITOR OF THE "ANTISEPTIC."

SIR,

IN your issue for May, in referring to private medical practitioners, you state that "the sympathy of his professional colleagues in the Government service is not with him. How dare you exist? is the unasked question of the Government medical man to the private practitioner." Without stopping to enquire whether there is any foundation for your statement, I presume the moral you intended to enforce was that one section of the medical profession is guilty of exhibiting uncharitable feeling towards another. This

[We never posed as the exponents of charity. We only stated facts. We leave posing to Lt.-Col. King, I. M. S. We are sorry if we have called the officials with the 10-day incubation period by the wrong name. We understand now that they are not called Certificated Sanitary Inspectors. They are called, it seems, Temporary Sanitary Inspectors or Plague Inspectors. But our description of them is accurate. The men who are called Certificated Sanitary Inspectors receive, we are told, a 3 months' training at the Medical College. But neither the men with the 10-days' training at the Sanitary Commissioner's Office nor the men with the 3-months' training at the Medical College could in any sense of

the term be called medical men. What we objected to was to these men issuing orders to Hospital Assistants who are medical men. Lt.-Col. King's statement, that our remarks about the educational qualifications of these inspectors 'display petty jealousy,' is absolute nonsense, and, as such, we can only treat it with the contempt which it deserves.—ED. A.]

TO THE EDITOR OF THE "ANTISEPTIC."

SIR,

WILL you or any of your readers inform me, through the columns of your valuable journal, whether the recommendation of the Medical Department, supported by the Government of India, regarding the change of designation of Civil Apothecaries with University qualifications into Civil Asst. Surgeon, has been approved and sanctioned by the Secretary of State; if so, when it is to be brought into force?

One Interested.

[We understand that the scheme has received the sanction of the Secretary of State for India, and will come into force very soon.—ED. A.]

## MIDWIFERY.

### General rules for the use of axis traction forceps.

"Who shall decide when doctors disagree?" We were under the impression that obstetricians were generally agreed as to the superiority of the axis traction forceps over the other kinds of forceps. But now we hear that a certain local professor has condemned it. We don't object to the profes-

sor's condemnation of the axis traction forceps. But may we plead that they ought only to be condemned after a fair trial? The following rules framed by Professor A. R. Simpson, of Edinburgh, for the use of the axis traction forceps, may be of help to the professor's students. Of course, the professor himself, we are convinced, is above all these elementary rules. These are only intended for the use of *junior* students.

- (1) Place the patient on her left side having her body across the bed and her nates at the edge of it.
- (2) Warm and grease the instrument and, if necessary, lubricate the maternal passages.
- (3) Anaesthetise the patient.
- (4) Assure yourself of the exact positions and relations of the head introducing the hand as far as necessary.
- (5) Introduce first the *left* blade, which has traction rod and handle attached to it and is stamped "left lower first."
- (6) Hold it in the left hand and use fingers of the right as a guide.
- (7) Insinuate, do not use force on the instrument and withdraw it partially when any great resistance offers.
- (8) Keep its point always in contact with foetal head.
- (9) Introduce each blade so that its concavity adapts itself to the convexity of the foetal head.
- (10) Enter and apply each in the axis of the pelvis.
- (11) Introduce the instrument during the intervals between the pains and always suspend the attempt during the continuance of the pains.
- (12) When it is fully introduced keep it *in situ* with the thumb and two last fingers of the left hand and use again the first two fingers as guides.
- (13) Introduce the right blade *with traction rod swung forwards* and pointing it at first towards the hollow of the sacrum.

(14) Carry it round the head, until it comes into complete antagonism with the left.

(15) Swing back the right rod and adapt it to the locking plate.

(16) Adapt but do not tighten the fixation screw.

(17) Grasp application handles and fix screw at point where safe and sufficient compression is secured.

(18) Make traction *with traction handles* during pains, or if no pains are present, at intervals.

(19) Keep the traction rods parallel with the shanks.

(20) After each traction slacken but do not unslip the screw and examine the progress of the head.

(21) When rotation has to be effected aid rectification with the application handles.

(22) Support the perinaeum very carefully with the left hand.

(23) Make the head distend and pass over it very slowly and allow the uterus itself as often as possible to complete the expulsion of the head, and always of the body.

(24) Immediately after birth of the head slacken the screw, free the right rod and remove the right and left blades successively.

The above rules, if carefully followed; will be of considerable help in working the axis traction forceps. We do not think that either Professor Tarnier or Professor Simpson ever meant the operator to hold the application handles with one hand and the traction handle with the other and to pull for all he is worth. Such performances belong to gymnastics rather than to obstetrics.



# BISHOP'S EFFERVESCENT CALCUSOL

Piperidine Para Sulphamine Benzoate, 5 grains } in  
Potash Bicarbonate, 10 grains } 60 grains.

HOWEVER Physicians may differ as to the exact part played by Uric Acid in the causation of the group of disorders commonly known as Rheumatic or Gouty, there is a general agreement that when it tends to be deposited in excessive quantities either in the urine, in the joints, or in the form of Uric Acid Calculi, it is desirable to administer some drug which will not only counteract this tendency to excessive formation, but will also assist in eliminating accumulations. Such a drug ought to be easy to administer, readily assimilable without giving rise to any constitutional disturbance, and sufficiently stable to allow of its preparation and exhibition in agreeable form. It should also be capable of detection in the urine for some hours after administration, as evidence that it had not been at once excreted, and also that it was not destroyed in the process of assimilation. All these requirements are combined in Bishop's "CALCUSOL," which we do not hesitate to pronounce the most powerful solvent of Uric Acid at present known. We base our claims upon the following facts and experiments:—

The investigations of Tummeliffe and Rosenheim showed that Piperidine possessed a marked superiority over all other Uric Acid solvents, and that while it could not be well employed in the form of the base on account of its very unpleasant odour and taste, it could be administered in the form of a salt without the slightest untoward effects.

The highly encouraging results of their investigations led us to search for a salt of Piperidine which should fulfil all Pharmaceutical and Therapeutic requirements. After a long course of experiments, we came to the conclusion that the only salt thoroughly reliable from both points of view is that formed by combining the base Piperidine with Para Sulphamine Benzoic Acid. This salt is Piperidine Sulphamine Benzoate ( $\text{SO}_2, \text{NH}_2, \text{C}_6\text{H}_4, \text{COOH}, \text{C}_6\text{H}_4, \text{N}$ ). It is stable at all temperatures up to  $100^\circ \text{C}$ ; does not absorb water or  $\text{CO}_2$  from the air, as the base itself does; contains a very high percentage of Piperidine; is neutral; is freely soluble in water; and can be administered in large quantities without the least inconvenience.

The observers already quoted found that certain organic salts of Piperidine when administered had a twofold action, not only did they diminish the total amount of Uric Acid produced, but by increasing the quantity of Xanthine—a substance the excretion of which gives rise to no difficulties—did not in any way interfere with the normal nitrogenous output. In fact when Piperidine Para Sulphamine Benzoate is administered, matter which would otherwise be converted into insoluble Uric Acid is in great measure excreted as soluble Xanthine. Experiments prove that when 5 grains of Piperidine Para Sulphamine Benzoate is taken in water internally it can be detected in the urine one hour afterwards and at all periods up to ten hours. After twenty hours no trace could be found, showing complete elimination of the drug had taken place in that period. As Para Sulphamine Benzoic Acid itself is a Urinary Antiseptic, its presence in this salt should give the latter similar properties; but our experiments in this direction have not gone far enough to enable us to state definitely the exact value of Piperidine Para Sulphamine Benzoate as a Urinary Antiseptic.

Bishop's "CALCUSOL" is a Granular Effervescent preparation of the above salt combined with Potash. It has already been used with signal success in different conditions of the Uric Acid diathesis. Among these may be specially mentioned cases of Uric Acid deposits in the small articulations—a condition commonly known as Rheumatic Gout. After a course of "CALCUSOL," the joints have become markedly smaller, the pain disappeared, and the flexibility of the joints was restored.

"CALCUSOL" is also indicated in cases of excessive deposit of Uric Acid in the urine, especially where this condition has given rise to the actual formation of renal or bladder calculi. Its use has materially aided the treatment of renal colic, and where frequent micturition and bladder irritation arise from Uric Acid Sediments, a course of "CALCUSOL" has been followed by the happiest results, while in no single instance has its administration been attended by the slightest inconvenience. We therefore offer it as an important addition to the Physician's armamentarium for the treatment of all Uric Acid disorders which have not yielded to the ordinary solvents, and especially for Rheumatism either chronic or recent, Rheumatic Gout, and renal or bladder calculi.

We have given the registered name "CALCUSOL" to our Granular Effervescent Piperidine Para Sulphamine Benzoate Potash Carb, for the Physician's convenience in prescribing and we wish to call attention to the fact that we are the sole manufacturers of this Piperidine Salt and of any preparation containing it.

"CALCUSOL" is sold only in one sized bottle containing 4oz. (28 doses). Price to the profession 3/8.

A wooden measure (holding 1 drachm) accompanies each bottle which, when filled level gives the proper dose.

We do not sell "CALCUSOL" to the public; it is supplied exclusively to Medical Men and Chemists.

CALCUSOL INTRODUCED AND PREPARED ONLY BY  
ALFRED BISHOP, Limited, Manufacturing Chemists,  
Speck's Fields, Spelman Street, Mile END NEW TOWN, London E. C. Sold by:—W. E. Smith & Co., Madras.

## The Antiseptic.

Vol. I.]

AUGUST, 1904.

No. 4.  
Annual Subscription Rs. 5.

### Original Article.

#### DIABETIC COMA.

IN the last issue of *The Antiseptic* there was published an article on "Carbuncle and its Treatment" by Captain Niblock, I. M. S. I think it will not be inappropriate if to follow that I place before the readers of this journal a short account of the other common termination of Diabetes, namely Diabetic Coma. Diabetes is the scourge of educated India, and there is no disease with whose pathology, complications and treatment, the general medical practitioner in this country need be more thoroughly conversant than Diabetes mellitus. The exceedingly important medico-legal questions which arose in a recent will case in our neighbouring island of Ceylon, full details of which are published elsewhere, also make the subject of Diabetic Coma interesting at the present moment. In my opinion, and in the opinion of some of my professional colleagues in Madras, whom I have consulted, diabetic coma is not quite so common a termination of diabetes in this country as it seems to be in Ceylon. Two of the leading Ceylon doctors have testified that nearly 50 per cent. of the deaths in cases of diabetes are from Diabetic Coma. Osler

in his work on "The Principles and Practice of Medicine" gives the proportion in Naunyn's cases as 12 deaths from diabetic coma out of 44 fatal cases of diabetes; in Williamson's cases 28 out of 40 and in Osler's own cases 15 out of 27. In Fagge and Pye-Smith's book the statistics quoted from Guy's Hospital records give the proportion as 6 in 46 cases. In Dr. Frederick Taylor's reports there are 28 in 36 cases, and Dr. Stephen Mackenzie's 19 in 37 cases. Thus it will be seen that the proportion of deaths from diabetic coma in fatal cases of diabetes varies in the experience of different authorities.

My own personal opinion is that in this presidency in not more than 1 out of every 3 fatal cases of diabetes is coma the immediate cause of death.

In 1874 Kusmaul described a group of symptoms occurring in diabetic subjects which terminated in coma and death. I do not think that the terms "Kusmaul's Coma" and "Diabetic Coma" are interchangeable. All cases of coma that occur in diabetics do not correspond to Kusmaul's Coma; nor are all the patients who die of Kusmaul's Coma diabetic. Professor Saundby of Birmingham in his work on renal and urinary diseases, publishes a case in which the cause of coma was pyonephrosis with renal calculus, and in which there was no glycosuria,

although the type of coma corresponded to Kusmaull's description. That clearly proves that Kusmaull's Coma need not necessarily always develop in patients who are subject to diabetes.

There are 3 classes of Diabetic Comas described. In the first group the symptoms are those of sudden collapse and cardiac failure, coma occurring only at the end, and the duration of the whole attack being very short. In the second group we have the typical symptoms of Kusmaull's coma. And in the third group we have symptoms very much like that of alcoholic intoxication. Here is a description of the symptoms as given by Professor Saundby.

"In the *first group* Frerichs placed those which suddenly, and usually after previous exertion, become prostrated, with cold extremities, small failing pulse, drowsiness, and loss of consciousness, and terminate fatally in a few hours; these Frerichs called death from heart failure.

In the *second group* the duration is longer, and there is a prodromal stage which may be either general prostration, gastric disturbance, vertigo, vomiting, constipation, or a local disease such as a dental abscess, pharyngitis, an abscess with a tendency to gangrene, bronchitis or catarrhal pneumonia. The attack itself commences with head-ache, restlessness, delirium, anxiety, sometimes with maniacal outbursts, dyspnoea, characterized by frequent deep respirations with free entrance of air into the lungs; sometimes with cyanosis, sometimes without it, feeble rapid pulse, low temperature, drowsiness and coma. The breath has a peculiar smell like fruit or chloroform, or acetone. Such cases may recover tempo-

rarily and in some rare instances the attack may pass away. The duration of the symptoms may be from twenty-four hours to three or four days or even longer. Frerichs attributed this type to a peculiar unknown poison acting on the respiratory centre.

In the *third group* he placed cases which present no dyspnoea or anxiety, have moderately firm pulse, and are fairly well nourished. The attack is characterized by headache, a feeling of intoxication, disordered gait, sleepiness, and gradual coma from which they do not awaken. The breath has the characteristic smell. This was believed by Frerichs to be the consequence of a poison which affected the nervous system like alcohol."

Of the above described three groups, the symptoms of group two are those which correspond to Kusmaull's coma.

It is not easy to say, with any amount of certainty, as to what brings on coma in a diabetic patient. Youth has been said to be a predisposing cause because of the frequency of the occurrence of diabetic coma in young persons who are the subjects of diabetes. Dr. Pavy has observed "that those cases of diabetes in which the disease has been kept under control by treatment are particularly liable to end at last in convulsions, collapse or coma; whereas when the disease is allowed to run on unchecked, the chances are in favour of the supervention of pulmonary diseases." Constipation is an important element in the causation of diabetic coma. Constipation may act as a cause by diminishing the elimination of effete matter or by the production of toxic substances by fermentative processes. Professor Dreschfeld, writing in Quain's "Diction-

ary of Medicine," gives muscular fatigue, shock, anxiety, obstinate constipation, sudden change of diet and some inter-current diseases as the exciting causes of diabetic coma. "Above all," says Professor Saundby, "we should not allow cases of advanced diabetes to travel; too many of those who go to foreign health resorts in the hope of finding a cure, die of coma, very soon after their arrival."

Coming next to the pathology of diabetic coma, it is now generally agreed that the condition is one of toxæmia, produced by toxins generated in normal or pathological cavities of the body. But on the question of the identity of the particular toxic substance that produces diabetic coma, there is some difference of opinion.

\* Kusmaull himself believed that the phenomena of diabetic coma depended upon the poisoning of nerve centres by acetone. Even before the recognition of this fact by Kusmaull other observers had found acetone in the blood, expired air and urine of diabetic patients. The presence of acetone in the urine of diabetic patients has been confirmed by a number of competent observers. But it has also been found in the urine of patients suffering from other diseases and who have no diabetes. Acetone has been found in the urine of patients suffering from variola, typhus fever, pneumonia, acute chorea, intestinal colic, tonsillitis, fractures, burns and contusions. It is even contended that acetone is not capable of giving rise to physiological effects similar to those noticed in diabetic coma. In the face of these evidences the theory of diabetic coma being caused by acetonæmia has been abandoned. Trimethylamine has been suggested as the

offending toxic agent, but there is very little evidence to support this hypothesis. The hypothesis that now holds the field is that B-oxybutyric acid is the toxic substance that is responsible for the production of diabetic coma. This substance has been discovered in the blood of diabetics in large quantities by Minkowski. The presence of acetone in the urine of diabetic patients is explained by the fact that the B-oxybutyric acid in the blood of these patients breaks up to form di-acetic acid which yields on decomposition acetone and carbonic acid. The theory of Lipæmia being present in diabetes, and fat embolism of the pulmonary and cerebral capillaries being the cause of diabetic coma also finds few supporters at the present day. "The almost universal opinion," says Osler, "is that diabetic coma is due to an acid intoxication, or, as Naunyn terms it, an acidosis. The offending agent is believed to be B-oxybutyric acid." Osler is careful enough to say "almost universal," for there are some observers who even now have not accepted B-oxybutyric acid as the toxic agent concerned in the production of diabetic coma. But even these few observers come very near that view, for, note what Professor Saundby says on the subject: "My own opinion is," says Professor Saundby, "that while we are unable to determine positively the nature of the toxic substance, or the determining cause of the sudden explosion of the fatal terminal symptoms, these phenomena are toxæmia, and in diabetes depend upon the presence in the blood of some acid nearly allied to acetone."

Diagnosis of diabetic coma is not very difficult. The peculiar dyspnoea is quite characteristic. But it is of greater practical importance to diagnose the near ap-



proach of coma by its prodromal symptoms than to recognize the condition when coma has actually set in. The chief prodromal symptoms are: (1) Ferric chloride added to urine gives a Burgundy red colour; (2) epigastric pains; (3) rapidity and feebleness of pulse; (4) altered respiration.

Prognosis in these cases is most grave, death being almost certain.

*Treatment.*—To check the fermentative process Thymol has been recommended, but no one has reported any good results from the use of this drug. Salicylate of soda is largely used in diabetes when constipation is present. It does some good but cannot be depended upon to prevent coma.

The treatment by alkalies is the one that is now generally accepted and followed. Vichy water or alkaline salts like bicarbonate of soda or potash may be given in large doses. Bowels must be kept free and a stimulant in the form of hypodermic injection of strychnia every 3 or 4 hours must be administered. Kussmaul tried transfusion of blood but it only produced temporary results. Inhalation of oxygen has also been equally disappointing. Intravenous injection of saline solution is the generally accepted treatment now for diabetic coma, but even that fails to save the patient. The following summary of facts connected with diabetic coma given by Professor Saundby is both instructive and interesting:—

(1) Diabetic coma is specially apt to supervene in acute cases in young persons.

(2) Diabetic patients and their friends should be warned of the danger of constipation, muscular fatigue, nervous exhaus-

tion, and cold, as probably predisposing causes of death from coma.

(3) The discovery of the ferric chloride reaction in the urine should be taken as a warning of the probable supervention of coma.

(4) Deep respiration, rapid pulse, and abdominal pains are the earliest premonitory signs of this condition.

(5) Cyanosis is absent in spite of the dyspnoea, but may appear just before death.

(6) Convulsive seizures are not an uncommon occurrence just before death.

(7) The temperature is usually normal or sub-normal, but may be considerably raised.

(8) Diabetic coma, with all its classical symptoms, occurs independently of any excess of fat in the blood, and the pathological value of lipæmia, when present, is yet undetermined.

(9) The toxæmic theory, *e. g.*, poisoning by B-oxybutyric acid, or some nearly allied substance or substances, affords the best explanation of this remarkable group of symptoms.

(10) Recovery is possible from prodromal symptoms and even from some degree of drowsiness, but from actual coma it is at least very rare.

(11) Great benefit may ensue in the early stages from speedy evacuation of the bowels by a brisk purgative, from alkaline enemata, and alkalies by the mouth. Treatment in the later stages seems always unavailing.

T. M. N.

## Cases and Comments.

### A case of acquired deaf-mutism with adenoids in the naso-pharynx—Operation.

#### RECOVERY.

THE presence of adenoid vegetations in a large proportion of deaf-mutes has been pointed out by many leading otologists. In all such cases the removal of the post-nasal growths is indicated, but unfortunately in a large number of cases such removal does not materially improve the hearing of the child. But cases have been recorded by Krebs, Love, Cassioni, and Urban Pritchard of marked improvement in the hearing in deaf-mutes by the relief of a chronic naso-pharyngeal catarrh and by the removal of adenoid vegetations from the naso-pharynx. One such case I have had under my care. Out of many failures it is a consolation to have had at least one success.

A, a boy aged about 10 years, was shown to me by his father in June 1902. On examination I noticed that the boy was able to speak a few words though his articulation was very indistinct. Evidently he had just begun to acquire the art of speaking, when deafness came on and prevented his further development of the power of speech. His deafness, too, was not complete. He could hear loud noises but there was marked inability to hear ordinary speech. There was no affection of the internal ear. There was some catarrhal changes in the middle ear and the naso-pharynx was full of adenoids. I recommended the removal of the adenoids. The patient's father consented to

the operation being performed, but as I was then going out of town for a holiday, I was not able to operate on the boy till the 9th July, 1902. On that day Dr. K. Madhava Menon anæsthetised the boy with chloroform and I removed all the adenoids from the naso-pharynx. From the third day after the operation I began to catheterize his eustachian tubes. I continued the daily catheterization of both eustachian tubes for over a month, during which time there was perceptible improvement in his power of hearing. The boy was taken home to Pondicherry and I asked the boy's father to engage a tutor for the boy who would give daily lessons in a tone audible to the boy. I saw the boy again six months afterwards, when I found both his hearing and conversational powers considerably improved. I asked the father to send the boy to a school as his hearing was good enough to enable him to hear his teacher at the school. The boy has been attending a school ever since. Last month, when I stopped for a day at Pondicherry on my way back from Colombo, I saw the boy, who was able to carry on a conversation with me. He heard fairly well what I said to him in an ordinary conversational tone and was able to reply to me both in French and Tamil. The case is interesting as it is one of those rare cases of deaf-mutism which recover under treatment, and also as illustrating the great benefits that follow from the removal of post-nasal adenoid growths.

T. M. N.

## THE ANTISEPTIC.

AUGUST, 1904.

### The Medico-legal Aspects of the Pieris Will Case.

MRS. Jeronis Pieris, a rich Sinhalese lady, died at Colombo early in March 1903. The executors of her last will applied to the District Court at Colombo for probate. The application was opposed by four of the children of Mrs. Jeronis Pieris on several grounds. We are only concerned with the grounds of opposition which raised medico-legal questions, and these were that "the testatrix was, for some weeks before her death, suffering from diabetes; that on Saturday, the 28th February, she was so ill that her doctor had given up all hopes of her recovery; that on Sunday morning, the 1st March, she was unable to recognise or respond to one of her sons; that on that evening her condition was worse, so that she could not then have been in a sound state of mind to have given directions for the making of her will" and so on. The will was signed on Sunday, the 1st March, and Mrs. Pieris died of diabetic coma on the following Wednesday. The case for the plaintiffs is that Mrs. Pieris was of sound mind on Sunday, the 1st March, when she signed her will, and that symptoms of coma came on only on Tuesday evening. Whereas the respondents contend,

that, on the day the will was signed although coma had not actually set in, "the prodromal symptoms of Kussmaul's variety of diabetic coma must have been in existence and it must have had the effect of clouding the higher centres of the testatrix's brain, thereby rendering it impossible for her to exercise any independent volition, or to comprehend the nature of a document like the present will." Medical evidence in support of these opposing views was adduced, which will be found republished in our supplement to this issue. The Hon. Dr. Rockwood, M.R.C.P. (Lond.), who was the medical attendant of Mrs. Pieris, in his evidence, states that Mrs. Pieris was of sound mind and her testamentary capacity unimpaired on the Sunday she signed her will. Dr. Thomasz, F.R.C.S. (Edin.), who saw Mrs. Pieris in consultation with Dr. Rockwood on Tuesday evening, the day before her death, says that when he saw her she was not in a comatose condition. But when asked to give his opinion as to whether Mrs. Pieris was "competent to understand this long document and to deal effectively with her numerous properties on the 1st March," replied "I cannot hazard any opinion on that point." Dr. Samuel Paul, F.R.C.S. (Eng.), who was called as a defence witness, had not seen Mrs. Pieris professionally, but from the description of the symptoms of her illness given to him and from the study of Dr. Rockwood's prescriptions given to

Mrs. Pieris he testified that, in his opinion Mrs. Pieris was on Sunday, 1st March, suffering from the prodromal symptoms of Kussmaul's diabetic coma, and that she could not on that day have been in a sound state of mind capable of understanding the nature of the will she was signing. Both in the District Court and in the High Court the executors of the will have won and probate has been granted. We have nothing to do with the result of the action. We are only concerned with the medical questions raised in this case. To begin with, a preliminary question of some interest to doctors, patients and chemists was raised, namely, after a doctor has written a prescription for a patient, whose property does that prescription become? Does it belong to the doctor who wrote it, to the chemist who made it up, or to the patient who paid for it? And the question came to be raised this way. The Proctor who was acting for the defendants in this case applied to Messrs. Neil S. Campbell & Co., the chemists who dispensed Dr. Rockwood's prescriptions for Mrs. Pieris, for copies of the same. They declined to give them as Dr. Rockwood had asked them not to give copies of the prescriptions to anyone. The Proctor next wrote to Dr. Rockwood, and the correspondence that passed between them will be found published on pages 37 and 38 of our supplement to this issue. In cross-examination Dr. Rockwood said: "It is not the rule in this island

for a chemist to return the original prescriptions to the patient, keeping a copy in his books, unless it is said on the prescription that it was to be so returned."

Again, Dr. Rockwood said: "It would be wrong for a chemist to return a prescription to the patient when not so requested." Messrs. Neil S. Campbell & Co. applied to Dr. Rockwood for copies of his prescriptions given to Mrs. Pieris on behalf of Mr. J. A. Perera, the opponent's Proctor. And "I replied," says Dr. Rockwood, "that prescriptions or copies were not to be given." On this point the evidence of Dr. Thomasz is as follows:—"Chemists in this country return the prescriptions with the medicine if they are asked for it. If not they are filed by them. In about 50 p. c. of cases they are usually returned unasked." Evidently this is a point on which there is considerable difference of opinion. We ourselves hold the view that when a patient has paid the doctor's fees and obtained a prescription, that prescription becomes the absolute property of that patient. Neither the doctor who wrote it nor the chemist who dispensed it has any right to withhold it from its proper owner—the patient. Of course the patient may not exercise his rights and may leave it at the chemists. But the chemist is bound to deliver it to the patient whenever he chooses to exercise his rights and claims his property. In

the case under review we are of opinion that the prescriptions were the property of Mrs. Jeronis Pieris, and neither Dr. Rockwood nor Messrs. Neil S. Campbell & Co. had any claims to them. But after the death of Mrs. Jeronis Pieris, to whom the property rights in those prescriptions passed is an intricate question of law (Roman Dutch Law we believe they call it in Ceylon) which we are not competent to discuss.

Next we come to the main points in the case. The plaintiffs state that on the 1st March, the day on which Mrs. Pieris signed her will, she was of sound mind, and that symptoms of coma came on only on the evening of Tuesday, the 3rd March, and that she died on the following day, Wednesday, 4th March. The defendants claim that on Sunday, the 1st March, although coma may not have actually set in the prodromal symptoms of Kusmaull's coma were present and, consequently, Mrs. Pieris could not have been in a fit state of mind to understand the exact nature of the will she was signing. Among the prodromal symptoms of Kusmaull's coma we have constipation and vomiting. The Hon. Dr. Rockwood, the medical man who attended on Mrs. Pieris in her last illness, states that Mrs. Pieris had neither constipation nor vomiting and that he did not treat her for either of those symptoms. The defence tried to prove from the line of treatment adopted by Dr. Rockwood, that both constipation and vomit-

ing were present. Our readers will find on pages 38 and 39 of our supplement to this issue the prescriptions given by Dr. Rockwood to Mrs. Pieris, and among them are several prescriptions containing such drugs as Pil Hydrargyri, Pil Colocynth Co, Mist Sennae Co., Magnesium Sulphate and Soda Sulphate. According to the defence (who have totalled up the quantities of the different purgatives given to Mrs. Pieris we have not verified them) the patient is alleged to have been given during a period of 12 days "6 grains of blue pills, 32 grains of compound colocynth pills, 6½ ounces of Epsom salts, 2 ounces of sulphate of soda, and 7½ ounces of infusion of senna." The defence maintains that this treatment must have been intended to overcome constipation which was present. Dr. Rockwood, on the other hand, emphatically declares that there was no constipation present and that his treatment was only intended to prevent constipation coming on. We all know how important it is in a case of impending diabetic coma to keep the bowels free. We must confess that a careful study of the prescriptions leaves the impression that they are intended to correct constipation. We may even say obstinate constipation. But Dr. Rockwood swears that there was no constipation and we are bound to accept his word. He was seeing the patient every day and he ought to know what was the state of her bowels. Entirely accepting Dr. Rockwood's statement, we frankly admit that we

fail to understand the object of the treatment. Dr. Thomasz, who saw Mrs. Pieris once in consultation with Dr. Rockwood and was one of the witnesses cited by the plaintiffs, replied to Mr. Norton and said "I do not understand the reason for the purgatives if constipation was absent.....It would be necessary to purge a diabetic patient, but I would not have purged a patient for such a long period." We quite agree with that view of Dr. Thomasz. Dr. Rockwood may have been of opinion that such an amount of purging was necessary. We must take the liberty of differing from him on that point. There may also be an honest difference of opinion between Dr. Rockwood and any other medical man as to what constitutes constipation, in the same way as there was a difference of opinion between the late Sir Robert Christison and a medical student who appeared before him to be orally examined in *Materia Medica* as to what constituted severe purging. "What is the dose of croton oil?" asked Sir Robert. "5 minims" was the prompt reply of the medical student. "Isn't it rather too big a dose liable to produce severe purging," suggested Sir Robert. "No," said the medical student, "I once took 5 minims of croton oil and I only had one motion". "Only one motion after taking 5 minims of croton oil!" exclaimed the astonished examiner. "Yes, Sir Robert, I only had one motion but I sat there all day" was

the student's answer which deserved full marks.

The next point is about vomiting. In one of Dr. Rockwood's prescriptions there is included dilute hydrocyanic acid in 5 minim doses to be given every two hours. This mixture was given for two days. From this the defence wanted to establish the presence of vomiting in the patient. But Dr. Rockwood states that there was no vomiting, and again we say we are bound to accept his word. But why was so much hydrocyanic acid given? Here is Dr. Rockwood's explanation: "I admit I gave this prescription on the 27th February. It is a mixture containing hydrocyanic acid. This is a medicine given for vomiting. I did not prescribe it for Mrs. Pieris for vomiting, but for the nausea she complained of after trying chicken broth. I was not told that she had been vomiting, nor had I any reason to believe so. I gave it simply for the nausea. I cannot remember whether she had the chicken broth on the 26th or the 27th, but I am certain I gave her this mixture after she had taken the chicken broth. The nausea would stop by the stopping of the broth." Here Dr. Rockwood says that nausea was caused by the chicken broth. We accept that statement. Dr. Rockwood also says that the nausea would stop by the stopping of chicken broth. We agree with that statement. Then the question naturally arises, why give 5 minims of dilute hydro-

cyanic acid every 2 hours. It is rather extraordinary treatment and we confess our inability to explain its *rational*.

Another point which the defence has laid great stress on is Dr. Rockwood's prescribing trional instead of morphia to produce sleep for Mrs. Pieris. It was argued for the defence that Dr. Rockwood did not prescribe morphia because he knew that his patient was gradually developing diabetic coma. Otherwise he would have prescribed morphia or opium, drugs which have a beneficial effect in diabetic cases. The selection of a hypnotic drug in any particular case is more a question of individual opinion. Morphia and opium are no longer so universally used as hypnotics as they were some years ago. Drugs like paraldehyde, sulphonal and trional are very extensively used and we don't think the selection of trional by Dr. Rockwood in this case is capable of the interpretation put on it by the defence.

There are several other points in the case worth discussing, but considerations of space prevent us from dealing with them. We have published in our supplement the whole of the medical evidence in the case and our readers can study the evidence and discuss these points themselves. But there is one point which we must touch upon before we close this article, and that is the position of Dr. Paul in this case. Dr. Samuel

Paul, F.R.C.S. (Eng.), did not see Mrs. Pieris professionally but he was engaged by the defendants to coach up their Counsel on the medical points on which he had to cross-examine medical witnesses who were cited by the plaintiffs; and he was himself called as a witness for the defence. As a witness for the defence he did not pretend to possess any personal knowledge of the details of the last illness of Mrs. Pieris, but simply gave his inferences from certain facts supplied to him and drew certain conclusions from the study of the line of treatment adopted by Dr. Rockwood in the case of Mrs. Pieris. His evidence has been called 'theoretical' and 'opinionative.' All expert medical evidence is that. But that is no reason to question the bonafides of an expert medical witness. He has been called a 'hireling' by the petitioner's Counsel, because he received a fee from the defendants for his having coached up Mr. Norton. And the District Judge in his judgment says that "this description has not at all been undeserved." In that respect all expert medical witnesses are 'hirelings,' for no medical man will care to waste his time hanging about a court of law without receiving some remuneration for the time he spends over the case. Until members of the learned professions develop into philanthropists, we are afraid that they must be contented to remain as 'hirelings.' One of the enormities committed by Dr. Paul, according to the District

Judge, is that "he (Dr. Paul) has thought fit to sit in court by the side of the opponents' advocate and to assist him in cross-examining two distinguished members of his profession whose subordinate he had once been, with apparently no other object but to prove them to be liars, or persons who did not know their business." We do not believe that Dr. Paul did, or ever would attempt to, prove Drs. Rockwood and Thomasz to be liars. He might have attempted to prove that some of their theories relating to diabetic coma and its treatment were wrong. "We are sure that Dr. Paul's professional brethren will acquit him of all blame for having done so. It is the proverbial prerogative of doctors to differ. And if Dr. Paul differed from Dr. Rockwood on the correctness of the treatment of unpleasant effects of chicken broth by heroic doses of hydrocyanic acid, there is no occasion to use strong language about him. We have the highest respect for both Drs. Rockwood and Thomasz, and yet we must confess that we differ from them in some of their theories about Kusmaull's diabetic coma. We are extremely sorry to read in the published evidence in the Pieris will case that Dr. Chalmers has detected both sugar and acetone in Dr. Thomasz's urine. We sincerely hope that the re-agents that Dr. Chalmers used in this case were impure. And so far as Dr. Thomasz's present condition is concerned, all that we can say

is that if the acetone and sugar in his urine at all contribute towards his happy good humour and his great professional success, then there will be a good many medical men who will wish for a little acetone and sugar in their urine. As for Dr. Rockwood, with all our respect for his high professional standing, we are sorry to have to differ from him on good many points with regard to his theories about diabetic coma. He says that he has seen 1000 cases of diabetic coma. That must be a record. We do not believe that there is any other medical man living in any part of the world who has seen one thousand cases of diabetic coma. It is a pity that Dr. Rockwood has such a distaste for writing. Otherwise what a splendid store-house of information will a monograph from his pen be on diabetic coma. But unfortunately he says that he has not kept a record of his cases. And yet he is not at all a careless man. He is an extremely careful physician, for note what he says about what he did in this case. When he got a message from his patient's relatives that she was getting comatose, he made up his mind to give an injection of saline solution and says Dr. Rockwood: "I referred to a book before I went to the house, and wrote down the prescription and got my son to have it made up at the chemists' and I went straight to the house." How many medical men are there in the world who, after having had experience of 999 cases of diabetic coma,

would, when they are called in to see their roo0th case of that disease, have the patience to refer to a book to find out the exact proportion of ingredients in a saline solution? The love of exactness displayed in this small incident by Dr. Rockwood makes one regret all the more that he did not keep any record of his rooo cases of diabetic coma. But, however, now that Dr. Rockwood's son has joined his father in his practice, we may expect something from him. Dr. Rockwood (jun.) has already done something in the study of "absorption of fat." We hope that he will give us a good account of his absorption of clinical facts from his father's very extensive practice.

### Our Contemporaries.

**Sterility from Obstruction at the Epididymis Cured by Operation.**—E. Martin, M.D. (*New York Medical Journal*, Oct. 10, p. 697).—The writer has shown that after cutting the vas deferens of dogs a short distance from its origin in the epididymis and forming an anastomosis of the divided end with the head of the epididymis, the ejaculations contain apparently normal spermatozoa. Even after months there was no tendency to closure of the artificial communication. In December 1901, he operated on a man who was childless, apparently in consequence of double obliterative epididymitis. He had gonorrhoea in 1885 and 1893, and gleet in 1897. The first attack of gonorrhoea was complicated by arthritis, the second by bilateral epididymitis. There was a large stricture in the bulbous urethra with ulceration behind it. The gleet was cured by dilatation, irrigation, and massage. A suspensory bandage and testicular massage were ordered. Repeated examin-

ation of the semen failed to show the presence of spermatozoa until March, 1901, when, on careful search, two or three ill-formed ones were found in each cover-glass preparation. In the fall of 1901 a thorough search failed to show a single one. In December centrifugalisation after dilution with 13 times the volume of normal saline solution also failed to show any.

On December 24, 1901, under ether, the left vas deferens was freed at about the level of the top of the testis. With sharp-pointed scissors, a slender bistoury, and a grooved director, such as are used by ophthalmologists, it was opened by longitudinal incision  $\frac{1}{4}$  inch long. The epididymis was approached from the outer side, and its entire length was exposed. An incision into the tail failed to show any milky fluid, though cover-glass preparations subsequently examined demonstrated a few spermatozoa in the expressed fluid. A portion of the head was then picked up with a toothed forceps and excised. A few minute whitish drops at once appeared on the cut surface, made up in the main of spermatozoa, some of which, when examined 15 minutes later, were mobile. Into the wound of the epididymis the vas was implanted by means of fine silver wire sutures carried on small needles from the outer surface of the vas into its lumen, thence from the cut surface of the opening made into the epididymis through its fibrous tunic. A suture was placed at either end of the vas incision, and the latter was held open by two other sutures, one to either side. The skin was closed with catgut. The dressing slipped the next day, exposing the wound, which became infected and suppurated superficially.

Semen 12 hours old sent for examination on Jan. 11 showed spermatozoa, not so numerous as usual, but actively mobile. A differential count showed that 50 per cent had either a much enlarged middle piece or a protuberance. In nearly all the middle pieces were more marked than usual. These cells corresponded to those observed in the epidid-

dymis of the human testis removed after death and subjected to an examination. On Jan. 9 the patient resumed marital relations, and on Oct. 17, 281 days later, his wife was delivered of a normal female child with an almost ludicrous resemblance to the patient.

This case shows the value of an anastomosis between the vas and the epididymis in case of sterility due to obliterating lesions in the tail of the epididymis. Though changes occur in the passage of the spermatozoa through the epididymis, the short circuiting of their course apparently does not impair their fertility.

See also "Anastomosis of a Severed Vas Deferens" (*Review*, p. 244).

**The Treatment of Small-pox with Red Light.**—J. Baer (*Munch. Med. Woch.*, Oct. 20, p. 1810).—A small epidemic of 18 cases of variola recently occurred in Strasburg. With the exception of the earliest 4 cases all were treated by Finsen's red light method. The windows were covered with red sheeting, which excludes the chemically active and irritant rays. The results were as favourable as those obtained by Finsen. Though some of the cases were moderately severe the suppurative stage was absent or abortive. In one case in which the red light treatment was not begun until some of the vesicles had become pustules, the remaining vesicles became pustules, but there was no secondary pyrexia. These results are remarkable, as with the primitive method employed, chemically pure red light is certainly not obtained. The treatment has no effect on the severity of the disease, and probably does not reduce the mortality. But it greatly reduces the danger of scarring.

**Cellulitis and Gangrene of the Skin after Hypodermic Injection of a Solution of Cocaine and Adrenalin.**—Aronheim (*Munch. Med. Woch.*, April 5, p. 615).—Neugebauer recently published 3 cases in which cutaneous gangrene occurred after plastic operations performed under local

anæsthesia with cocaine and adrenalin. Glycosuria was not present. Enderlen has published a case in which death from respiratory paralysis after injection of 8 cgm. (0.1543 gr.) of cocaine with 8 drops of the commercial solution of adrenalin. According to Braun the doses of adrenalin originally recommended for subcutaneous injection (maximum 1 mg.) were too large. For Schleich's infiltration method mere traces in adrenalin should be used. A safe solution is formed by the addition of 2 to at most 5 drops of a 1 in 1,000 adrenalin solution to 100 c.c. of a 0.1 per cent. solution of cocaine or B-eucaine; it contains from 0.00007 to 0.00017 per cent. of adrenalin hydrochloride.

A man, aged 70, had a hygroma of the size of a walnut in connection with the tendon of the right tibialis anticus over the anterior end of the first metatarsal bone. It had appeared a year previously and was giving trouble in walking from pressure of the boot. The overlying skin was normal.

He was small and ill-developed, with *kypho-scoliosis* of the dorsal vertebræ. There were rheumatoid arthritis of the hands, well-compensated mitral regurgitation, and signs of bronchitis at the bases posteriorly. There was neither albuminuria nor glycosuria. The feet and tumour were thoroughly washed with soap and water, a solution of iodoform in ether, and spirit. With all the usual precautions the anæsthetic solution was injected subcutaneously in a circular line, at the outer side of the swelling with a Pravaz-syringe, previously boiled in lysol lotion. The solution, which had been prepared the previous day and kept in a bottle which had been boiled, consisted of 1 in 1,000 solution of adrenalin chloride 2.0, cocaine hydrochlor. 0.2, normal saline solution 9.0. The syringe thus contained 0.0002 gm. of adrenalin. The removal of the hygroma, which did not communicate with a joint, was easy, painless, and bloodless. Three sutures were inserted with a boiled needle, the wound was dressed with airoil gauze, and the leg was elevated.



Five hours after the operation the right foot became painful. The morning temperature, after a sleepless night, was 100.4. The wound was dressed. It appeared normal, but the whole of the dorsum of the foot was pale, tense and tender. On the third day it was swollen, red, and tender. The wound was healthy, and the chief pain was at the outer side of the great toe at the site of the injection. The cellulitis extended upwards to the ankle. The next day there was fluctuation over the second metatarsal bone. The abscess was incised and pus escaped. Fomentations of perchloride of mercury lotion were applied. The general and local condition improved and the sutures were removed. The wound had healed by first intention. But on the eighth day there were renewed pain, redness, swelling, and fluctuation below the first abscess. Foetid pus was evacuated. There was extreme weakness. From Feb. 28 to March 1 there was great pain and the cellulitis spread to the middle of the leg. The edges of the wound caused by the incisions, which was now of the size of a crown, were gangrenous. On March 5 the cellulitis began to subside and the ulcer to clean. On March 12 the general condition improved and recovery followed.

The writer had repeatedly used a similar solution in younger subjects with good results, and even in old patients had never seen any ill effect from injections of cocaine without adrenalin. The result was probably due to adrenalin ischæmia in badly nourished tissues. Braun's advice not to use infiltration in old persons is undoubtedly sound.

**Occipital Neuralgia in Sore Throat.**—H. Vincent (*Presse Médicale*, April 30, p. 273).—Sore throat may give rise to certain neurites and very painful neuralgias. Catarrhal or phlegmonous sore throats frequently cause occipital neuralgia.

A man, aged 21, had diffuse erythema of the pillars of the fauces, tonsils and posterior wall of the pharynx. The tonsils were swollen

and covered with a pultaceous slightly adherent exudation which contained streptococci, but no diphtheria bacilli. The tongue was coated and the submaxillary glands were swollen, hard and painful. The temperature was about 103° on the first 2 days, then it fell slowly, reaching normal in about a week. During the whole illness there was severe pain in the right occipital region, which began about 2 days after the first symptoms. Though spontaneous it was exaggerated by rotation or lateral movements of the head. It extended along the whole course of the occipital nerve and its branches. Slight pressure behind the upper end of the sternomastoid, or in the sub-occipital fossa was very painful. Brushing the hair over whole of the right half of the head as high as the vertex caused discomfort. The neck, temporal region, face and left side of the head were painful. The occipital neuralgia diminished as the throat improved, but even a month after the throat was better the neuralgia persisted.

Other varieties of the condition may occur. The intensity of the pain and its radiation vary, also its duration, which may be short or long. The amount of pain is not always proportionate to the severity of the sore throat. The pain may be very intense in cases of slight tonsillitis, and *vice versa*. It may cause insomnia, and be so intolerable as to require injections of morphia.

The writer has reported another case in which there was great occipital pain whenever the head was moved. The pain was confined to the two occipital nerves, and was unabated for a week. The patient had a congested sore throat which (with the neuralgia) proved to be a prodromal symptom of typhoid fever.

The neuralgia is most marked at night and is increased by coughing, blowing the nose or sneezing. In one patient swallowing provoked severe shooting pains in the neck,

showing the relation between the neuralgia and the inflammation of the pharynx. The patient instinctively holds his head stiff as in torticollis. The pain may radiate into the ear or the temporal region. In mild forms the pain may be almost unnoticed, but it may easily be elicited by pressure over the point of emergence of the great occipital nerve.

In 136 cases of congested and phlegmonous sore throat the writer has found this complication 17 times, or in 12½ per cent. of cases. In 6 cases the neuralgia was acute, in 11 it was slight. Usually the neuralgia is unilateral, the right side being most often affected. Of his 17 cases the right side was affected in 9, the left in 4, and both sides in 4. Sometimes pain appears on the side on which the angina is least. The complication is easily distinguished from mastoiditis, periostitis, muscular rheumatism, or occipital adenitis which may occur in sore throat.

\*The writer thinks that the condition arises from an abnormal communication between the pharyngeal nerve and the second posterior spinal root, from which Arnold's occipital nerve arises.

**A New Complication of Influenza.—Acute Yellow Atrophy of the Liver.**—Prof. A. Bonome (*Lo Sperimentale*, Oct.)—Two children had intestinal symptoms and icterus, and after a few days died comatose with acute atrophy of the liver. The writer obtained in pure culture from the liver, blood, and splenic pulp very small bacilli presenting all the morphological and biological characteristics of the influenza bacillus. But he also cultivated from the liver colon bacilli, which he thinks played some part in the disease.

**Meningitis in Typhoid Fever.**—Ch. Achard and G. Paiseau (*Bulletins de la Soc. Med. des Hôpitaux*, April 15, p. 329).—The views as to meningitis in infectious diseases have passed through several phases. For a time cases presenting meningeal symptoms

were scarcely considered instances of meningitis if they were not fatal and were termed "*ménigisme*." Then it was shown, by lumbar puncture, that recovery was possible in meningitis, and even in suppurative meningitis. Later, cytoscropy showed the existence of slight meningitis with purely histological lesions in cases which had been termed "*ménigisme*." At the same time it was found that "histological meningitis" might exist without any meningeal symptoms.

A lad, aged 18, was admitted to hospital on Oct. 23, complaining of a severe headache and backache. He was in good health until the beginning of October, when he began to suffer from malaise, lassitude, and loss of appetite. For some days before admission he had had headache and repeated rigors, but worked until the day before admission.

During the night he was delirious and on the 24th there was rigidity of the neck with limitation of flexion and rotation of the head, which were painful. Kernig's sign was well marked. He was constipated, and several times vomited glairy matter. There was a little albumen in the urine and the diazo reaction was distinct. The temperature was 103.1° in the morning and 104.3° in the evening. Lumbar puncture yielded clear fluid which was found on centrifugalisation to contain numerous lymphocytes. Culture media were inoculated with negative result. The puncture was followed by marked relief of the meningeal symptoms. On the 26th rose spots appeared on the abdomen and Vidal's reaction was obtained. On the 27th puncture of the spleen yielded cultures of the typhoid bacillus. On the following days the temperature was lower and Kernig's sign and the rigidity of the neck disappeared. Convalescence followed.

In this case the meningeal symptoms were sufficiently marked to establish a strong presumption of meningitis. When the symptoms are ill-marked a similar "meningeal lymphocytic reaction" may be obtained.

The fact that the fluid was sterile shows that the meningitis was due to the action of toxins. Cases occur in which there are meningeal symptoms without the cerebrospinal fluid showing any signs of meningeal reaction. The explanation is that the symptoms of meningitis are "borrowed," i.e., are not due to the meningeal lesion but to vascular or inflammatory troubles of the sub-jacent nervous tissue. Thus it is conceivable that the nervous elements may be altered without the serous membrane being inflamed. Another explanation is possible: the meningitis may be limited to the cerebral membranes and cause no change in the fluid extracted by lumbar puncture. Several such cases have been published.

M. Nettar (*ibid.*, p. 332) has since 1898 systematically looked for Kernig's sign and found it one of the easiest and most certain means of recognising meningeal irritation. He has frequently found it in typhoid fever and pneumonia. Out of 313 cases of typhoid fever he found it in 44. Some of these cases showed other signs of meningitis—rigidity of the neck and trunk, pains in the head and limbs, contractures, convulsions, and paralysis of limbs. Cases of typhoid fever in which Kernig's sign occurs are unusually serious. The mortality and the liability to relapses are about thrice as great as in cases in which the sign is absent. When Kernig's sign is present the nature of the fluid obtained by lumbar puncture varies. The absence of meningitis must not be inferred because the fluid is limpid. Sometimes, albumen is found in variable proportions, which establishes the inflammatory character of the fluid. The presence of cells is most easily demonstrated by centrifugalisation. On several occasions M. Nettar has isolated microbes from the fluid obtained by lumbar puncture in typhoid fever not always the typhoid bacillus, sometimes the pneumococcus, the staphylococcus, and the streptococcus. Even if the fluid is apparently normal meningitis is not excluded.

**The Action of Rontgen Rays on the Reproduction of Animals.**—In the *Münchener Medizinische Wochenschrift*, of Oct. 27, 1903, Dr. Albers-Schonberg records the results of some interesting experiments on the action of the X-rays on the reproduction of animals. Male rabbits or guinea-pigs which had been subjected to prolonged exposure completely lost the power of reproduction, although sexual desire, and ability to copulate were unimpaired, and they did not otherwise differ from normal control animals. This sterility is due to necro-spermia, in which condition the spermatozoa are non-motile. If the rays are further applied necro-spermia is replaced by complete azoospermia. Eleven male animals, after subjection to the rays, were paired with normal females on 14 occasions. But though some of the pairs lived together for months not a single pregnancy resulted. The rays were applied to the male animals daily for 22 to 40 minutes for 12 days, and after an interval of 7 or 14 days on several subsequent days, until the total time of application amounted to between 195 and 1,218 minutes. Necropsies showed that an application for 195 minutes was insufficient to produce complete azoospermia, but that one of 377 minutes or more did so with certainty. Whether this sterility is permanent or temporary it is too early to say. It would be of interest to determine whether this property of the X-rays applies to man and other animals.

**The Prophylactic Production of Sterility.**—H. Cramer (*Munch. Med. Woch.*, Apl. 5, p. 605).—The indications for the artificial production of sterility in a woman are the same as for the induction of premature labour or abortion; for instance, uncompensated cardiac disease, nephritis, diabetes, acute phthisis, and laryngeal tuberculosis. But the production of sterility is more rational than the induction of abortion. Methods of preventing conception are uncertain and may be injurious to health.

Moreover, it is as important to arrest menstruation when profuse or frequent as to hinder conception. Losses of 2 or 3 lb. in weight are common during profuse menstruation and occasionally as much as 6 or 8 lbs. may be lost within 5 to 8 days.

(1) In the production of sterility oophorectomy should be avoided whenever possible. It is not always followed by cessation of menstruation, and occasionally there may be even increased menorrhagia. The results of removal of the ovaries on the psychical functions may also be disastrous. Oophorectomy should therefore be confined to diseases which are either inevitably fatal or render life a burden without it.

(2) A second method of artificial sterilisation is ligature and excision of the Fallopian tubes; this produces sterility but not amenorrhoea. In the 4 cases in which Kehrer, who introduced the method, operated, there were afterwards considerable menstrual disturbances and occasionally menorrhagia. It is not possible to determine whether these were due to the operation.

(3) Vaginal hysterectomy may be performed without removal of the ovaries. This method has been recommended chiefly by French surgeons. But in weakly patients, in which alone the production of sterility is justifiable, a major operation under general anaesthesia is usually contraindicated. Moreover, it is unnecessary.

(4) Both sterility and amenorrhoea result if the uterine mucosa is destroyed. For this purpose vaporisation of the uterus or "atmocausis" (*Review*, Vol. II., p. 125) is a good method, which requires no anaesthetic. The cavity of the uterus is more or less obliterated, and the uterus shrinks. The results are scanty menstruation or complete amenorrhoea, and sterility. If properly performed the operation is harmless in the absence of disease of the adnexa or of inflammatory adhesions. If the tubes are diseased

vaporisation may prevent the escape of the discharge and retention with severe pain ("tubal colic"). The same may occur if the lower segment of the uterus is obliterated and the upper remains patent—an accident which once occurred in the writer's practice. To prevent this the apparatus should be made with a cervical guard, which prevents destruction of the cervical mucosa. The action of steam is intensified if the mucous membrane of the uterine body be previously painted with adrenalin. Thus in the absence of contraindications, vaporisation of the uterus is the best method of producing amenorrhoea and sterility. The writer reports 5 cases—3 of phthisis and 2 of heart disease—in which the results were excellent.

**Twisted Pedicle of an Ovarian Tumour thrice reduced without Operation.**—C. A. PORTER, M. D. (*Boston Med. and Surg. Jour.*, April 7).—A woman, aged 35, had a normal confinement in May, 1900. On Dec. 22, 1903, she ate some unsound meat. She became sick in the night and vomited violently all the next day. After a severe attack of vomiting she was seized with sharp pain in the right iliac region. She saw and felt a lump there of the size of a small orange which disappeared after manipulation. The pain then ceased.

On Jan. 5, 1904, after carrying her child upstairs she had a similar attack of pain which lasted an hour. There was occasional vomiting. Menstruation had begun on the previous day more profusely than usual.

On Jan. 11 she had a third attack. Menstruation still continued, although it usually lasted only 3 days. She vomited every 15 minutes. At 4 p.m. after an attempt at palpation the pain suddenly ceased. She was seen an hour later by her medical attendant who found a movable globular tumour in the hypogastrium. On the inner side of the pelvic brim on the right side there was slight tenderness. Ovarian cyst, the pedicle

of which had become twisted, causing the 3 attacks of pain, was diagnosed. The point of tenderness seemed to indicate the position of thrombosed vessels due to the twisting of the pedicle. Immediate operation was advised lest the pedicle might become further twisted with the production of gangrene. Laparotomy showed a purplish ovarian cyst surrounded by fluid. It was rotated one-and-three-quarter times on its axis. The ovarian vein and the veins of the broad ligament were thrombosed at the site of the twist. A similar tumour was found on the left side. Double ovariectomy was performed but a little ovarian tissue was left.

**Ovariectomy during Pregnancy.**—Karl Heil (*Munch. Med. Woch.*, Jan. 19, p. 109) has performed 5 ovariectomies in pregnant women, since Jan., 1901, without the occurrence of abortion. He has collected 241 published cases of ovariectomy during pregnancy. The

total mortality was 2.1 per cent., which is not greater than that in uncomplicated ovariectomies. The prognosis depends on the nature and character of the tumour and is independent of the pregnancy which complicates it. Abortion or miscarriage occurred in 19.5 per cent. of the 241 cases. But in the last 41 cases published the percentage has not exceeded 9.4. These figures show that if ovariectomy is urgently required, pregnancy is no contraindication. For instance, laparotomy would be indicated if it were doubtful whether the condition was extra-uterine pregnancy complicated by an ovarian tumour. Ovariectomy would then be a lesser evil than failure to recognise an extra-uterine pregnancy. Whenever possible the Fallopian tube should be left behind on the side of the tumour, in order, as much as possible, to avoid disturbing the uterus. For the same reason abdominal is preferable to vaginal laparotomy.



# The Antiseptic.

Vol. I.]

SEPTEMBER, 1904.

No. 5.  
Annual Subscription Rs. 5.

## Original Article.

### FEVERS \*

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I CHOSE the subject of fevers, because it is so common and so comprehensive a subject, comprehensive enough (as I shall try to show) to include within its sphere nearly all the systemic diseases. Every member of the profession is, or ought to be, interested in it—the specialist as well as the general practitioner, the physician as well as the surgeon. It is important for every one of us to clear the ground for the study of all other diseases by fixing in our minds some of the main points in the etiology and pathology of fevers, and settling once for all the general principles of diagnosis and treatment.

The choice of the subject, therefore, hardly needs an apology, though the choice of the lecturer requires I fear a longer one. It is so extensive in area, and so unlimited in scope, while my own capacity to

deal with it is so limited, that I do not wonder that one or two members have already remarked on my temerity at my undertaking such a task. In reply I can but ask you to bear with me for an hour or so, while I prove to you how little I know of the subject I have undertaken to speak about.

Apart from the indefinite character of the subject, the facilities for its studies have been at a discount. The literature available on fevers is scanty, and though I availed myself, Sir, to the fullest extent of the privilege you so generously extended to the members of this association of using the books of the school library, I have not succeeded in obtaining much information on the latest phase of thought in regard to some points connected with the subject under discussion.

I tried to infuse a little local colour into this paper by introducing a few facts and figures connected with fevers as found in Hyderabad and the districts, but my essay in this direction has also proved sadly futile. We live in a land where 'Vital Statistics' is an unknown term, where we are never troubled with such things as health returns or special reports on specific diseases that so often disturb and devastate our part of the country. No accurate register of births and deaths is kept in

\* A paper read before the Hyderabad Medical Association.

the city. True, once in ten years, we take stock of our population, but that is for the benefit of the Census Department, and the information of the public outside Hyderabad. It is true, also, that we get information more or less correct of the plague attacks and deaths in the areas affected, and we do so, at the instance, originally at least of the Central Government. I for one found it unsafe, if not impossible, to trust myself to speak of fevers on the strength of local information. I have, therefore, been obliged to content myself with putting together a few stray observations and statements which, if crude, have at least the merit of being honest and well-intentioned; and, in the spirit in which they are offered, I hope you will accept them. Incidentally, I shall submit for your discussion a few theoretical considerations which I hope will prove worthy of your attention and in your hands fruitful of results.

You will permit me to divide my subject in the old stereotyped way. The habit of study engendered by my vocation as a lecturer in medicine is so strong, that at present I can think of no better way of dealing with it than the one I have adopted for years, and that my teachers adopted before me. I shall, therefore, review the subject under the following headings:—

1. Definition and Classification,
2. Etiology,
3. Pathology,
4. Diagnosis, and
5. Treatment.

Of course it is impossible to keep these headings always distinct, and you will not mind one merging into another or overlapping it occasionally.

### Definition and Classification.

Since the time of Socrates and his pupils, the love of definition has been strong in the mind of Science, and Medical Science has been no exception. In no other allied science, however, is there such a confusion of words, such a jumble of ideas as are indicated in medical definitions. Even *Disease* has not received its full connotation, and our ideas of health are as shifty and visionary as a quicksand or mirage. Galen had a definition for *Health* and its opposite—*disease*—which we have not. It was based upon the humeral theory, which to this day is adopted by our brethren of the Eastern schools. Galen defined health as a state of equilibrium determined by the just conformation of organs, and by the just mixture of the elements—namely, blood, mucus, yellow bile and black bile. In disease, owing to a misproportion of the elements, the juices are found to be too hot or too cold, too moist or too dry. In fevers which are the result of putrefaction, the motion of these juices is arrested, and they undergo corruption. Such a simple pathology inspired an equally simple therapeutics. Remedies are either hot or cold, moist or dry and according to the excess or diminution of these qualities in the system a suitable remedy has to be chosen. This is the Galenic System which with various modifications is still in vogue in this country and which within its narrow limits has at least the merit of consistency.

Since Galen's time, you will admit, Medical Science has advanced with enormous strides, but with progress of our knowledge there has come less of assertion and still less of definition. Paradoxical as it may sound, the more we know, the less we seem to know; or, is it, as our Unani friends would put it, the more we seem to know, the less we really know. Ignor-

ance, indeed, seems to have been the bliss of ancient times, while it seems equally true that for us moderns little learning is as dangerous as it is irksome. The misery of half-knowledge falls with full force on any one that attempts to define fevers. Literature offers twenty definitions, all equally tempting, but not one of them entirely sound in all its parts.

To go no further back than the past half century, the doctrine of fevers has been so often amended and altered within this short period, that the mind fairly despairs of grasping a definite conception of the Fever condition. The Father of Modern Pathology was the first to teach that fever was a *neurosis*—not an over activity but a paralytic state—a weakness and not strength. Thence through Frauher, Lebermiester, Senator, Leyden, Conheim, Koch, Macalister and a host of other workers, the doctrine has percolated to us with additions and alterations quite bewildering in their quality and quantity.

Perhaps the best definition of fever is Burdon Sanderson's. It seems at any rate the least objectionable. 'Fever' he says, 'is the reaction of the organism to a fever-producing substance introduced into the circulating blood, and acting on the nerve centres concerned. Even this definition is not logically complete, for, it takes no account of the pyrexia of cerebral puncture produced experimentally, nor does it entirely cover fevers produced by simple fractures, head injuries &c.

From the stand point of modern pathology, the routine division of fevers into Symptomatic and Idiopathic, sounds inconclusive and unscientific. With our extended knowledge of their etiology, our fevers are all tending to become symptomatic. Thus typhoid fever, which was a

filth disease, is now simply a *group of symptoms* due to Eberth's bacillus. Malarial fever which was a miasmatic *disease* is a *symptom* of infection by a parasite. There is hardly a fever now which cannot be attributed to some form of poison which can be isolated or not is another matter. It is true we have not been able to put into a test tube the poison of each individual fever; but, even as the chemist arguing in the abstract presumes the existence of certain elements and compounds, which he has not yet been able to handle, so from analogy it is open to us to assume that in every fever there is a poison, particulate or otherwise and that pyrexia is but a symptom of it, action on the organism. Nay, I would go further and maintain that all disease is a form of poisoning either external or internal, the former variety being generally infectious, and the latter communicable by heredity. To this point I shall return later.

For the present I would submit for your consideration an allied proposition that *all infections are fevers*. This may sound a hasty conclusion, but no one who has watched the endless shifting of the nomenclature of fevers will be surprised at this generalisation. You will at least admit that there is no hard-and-fast line to be drawn between the different fevers, nor around them. Laterally we have ceased to be over-zealous in restricting the term "fevers" to pyrexial conditions. The merest tyro in medicine knows that the height of temperature varies in the various specific diseases, so far acknowledged as fevers; and it is possible for us to arrange all infectious diseases in a series which with certain exceptions show a gradation of the temperature symptom. The top of this series will probably be occupied by acute rheumatism and cerebro spinal fever, and

the bottom by such diseases as syphilis, hydrophobia &c. Is syphilis a fever? The febrile reaction in it is so often absent, and when present is so little marked, Jonathan Hutchinson has fought for, and obtained, a definite place for syphilis amongst specific fevers. Once an admission of this kind is made, it is difficult to shut out the claims of other diseases, whose life-history is more or less similar to that of syphilis. The main point is that the temperature test is not essential to dub a disease a specific fever. There may be a fever without there being any fever at all about it. The existence of such terms as ambulatory typhoid, latent plague, and malarial cachexia, is sufficient to prove this point, while there are other diseases due evidently to poisoning, and with distinct temperature variations which are still being included by books under local diseases. Pneumonia, dysentery acute eczema, leucocythemia, are all instances of this class. Now comes the question, where is the line to be drawn? Or is it worth while drawing a line at all? Is the temperature test to be retained as the one sole criterion between a fever and a non-fever?

My own humble opinion is that it is high time we abolished this test altogether and regarded rise of temperature (or fall) as but one amongst the many symptoms of specific infection, and not by any means or always the most important symptom either. It would appear that a high temperature is no more a *sine qua non* of a specific fever than light is indispensable for combustion or heat for illumination. It would be more logical, it certainly would be more pathological, to enlarge our limits of specific fevers and apply the term to almost all diseases due directly or indirectly to specific poisons. It matters little what the poison is, what its source or how

it acts. All disease may be put down as infective, in which, if the prognostications of the bacteriologist count for anything, there is an organism or poison discovered or undiscovered. The poison may be animal, vegetable or mineral—a protozoan, a bacillus, a ptomaine or toxin, the latter two may be generated outside the body or inside in the blood or intestines, in the brain or liver. The theory of auto-intoxication or auto-poisoning was brought prominently to the fore at the last meeting of the British Medical Association, and if it is accepted, even insanity would fall under infective diseases. If tubercular meningitis is a specific fever, phthisis is equally entitled to be called a specific fever. Acute rheumatism and gonorrhœal synovitis come under one category. Rickets and gout are not far from these, and, osteoarthrititis and hypertrophic pulmonary osteo arthropathy get bracketed with them. Would you not call these specific fevers, and is there no fever in them. Diphtheria is acknowledged beyond doubt to be a specific fever, why then deny that title to acute tonsillitis or pharyngitis. Mumps and orchitis, whooping cough and asthma, tuberculosis and leprosy, cholera and diarrhœa it is respectively impossible to keep apart in a classification founded on a rational basis. Malaria and filariasis run on parallel lines, and may carry with them pernicious anæmia, leucocythemia and Hodgkin's disease. Rheumatism, chorea, and endocarditis may be due to the same organism or poison. Anyhow they often occur together. If rheumatism is a specific fever, why not the others. Rheumatism affects the joints, chorea the cerebral centres and endocarditis the heart. It is true that there are no definite changes discernible in the brain in chorea; but, what definite

discoverable changes are there in tetanus and hydrophobia in which also muscular movements are a prominent symptom and yet these latter are respectable, if new, members of the group of specific infectious diseases. These with syphilis are allowed by some even into the class of specific fevers. Why should we not then call specific fevers, diseases which often show more fever than the above, and run at least as definite a course as they, and which moreover often occur with syphilis as a predisposing cause, I would advance the claims of disseminated sclerosis, locomotor ataxy, general paralysis of the insane and other allied disorders for a similar recognition.

• It may be objected that in the one class there is inflammation, and in the other degeneration. But in both there are destructive changes, rapid and productive of more fever in the one, and slow with less fever in the other. Rapid tissue change disengages heat. In that sense—in that limited sense only—fever is intimately connected with inflammation. But slow inflammations and slow tissue changes, the results of which are more or less permanent, must also bring about temperature variations, however small and inappreciable; and thus are entitled to be regarded as fevers. This reduces us to the simple question "Is there inflammation without fever? If so, are we justified in calling that inflammation itself a fever." The absence of one symptom—even if that symptom be a pathognomonic one—does not, or at least ought not, to disqualify a disease from getting its name which after all is bestowed on a whole group of symptoms. There surely is scarletina without a rash, cholera without a motion, whooping cough without a whoop and migraine without a headache. To return to the chronic lesions of the nervous system, these slow pro-

cesses find a parallel in the slow combustion of the physicist in which heat and light do not occur in appreciable quantities. Whether the organism itself produces the symptoms or its toxin matters little. All I wish to point out is that symptoms similar to those produced by tract and other diseases of the nervous system are produced, only more rapidly by the poisons of certain well-known fevers. Destruction may be by acute or by chronic degeneration. I contend, therefore, that both are fevers,—the one with high temperature, and the other without.

There were lately in the Afsalgung Hospital two cases which ran an exactly similar course. They were both admitted into the hospital in an unconscious state and with only slight fever. The fever subsided in a day or two and consciousness returned, but in both the men there were left a peculiar weakness and inco-ordination of the tongue and lower extremities which rendered speech indistinct and gait uncertain. Only one of these cases I was able to watch after he left the hospital. In the later stages he presented a curious mixture of symptoms of glosso-labial paralysis with locomotor paresis. And, any one who had not seen him earlier might have been misled into the belief that he was suffering from chronic bulbar trouble, while the fact that with a few injections of quinine and strychnine, the entire nervous disorder disappeared, shows that at least that it was some specific fever exactly similar in its clinical aspects, except in point of duration and curability, to the more chronic *degenerative fevers* in which the lesions are more permanent.

In this connection I would like to remind you of a fact that I am sure is within the knowledge and experience of every one



of you and that is that the temperature varies with the severity and not the permanence of the local lesion. Pneumonia is an acute disorder and shows more fever than phthisis. In the first the patient may recover from the fever with hardly any damage to the lungs, while in the slower infection of the second permanent changes of a far-reaching and destructive character may present comparatively little temperature accompaniment. "It is not the alteration of temperature which is the greatest index of the severity of the struggle between the host and the parasite, but the death and removal to a greater or less extent of the protoplasm of the host." Instances can be multiplied, but I think I have said enough to justify my plea that the limits of fevers are at present too narrow and require considerable widening.

There is a favourite division of specific diseases which requires a word or two—the division, namely, into infective and infectious. This, it would appear, is an unnecessary piece of vexation to both the practitioner and the pathologist. Infective diseases being those that are produced by specific poisons while infectious diseases are those that are communicable from one person to another, all infectious disease are necessarily infective, while all infective diseases are not infectious. I think we may take it that all disease is produced by the introduction into the part diseased of some sort of poison or other, many of which are of an unknown character. And, until our list of these poisons and their classification is complete, it seems a pity to add words to an already overburdened vocabulary.

### Etiology.

The study of the sources, modes and channels of infection is an interesting study but it is still more important to determine these points with exactitude in the case of any given fever, for in this process lay the secret and the strength of preventive medicine. Our worst detractors cannot deny that modern sanitary science is to a large extent responsible for the enormous improvement in the health of nations and communities that have come under its influence.

Causes, however, never seem to be final in medicine. They keep constantly shifting further and further back, becoming themselves converted into effects, and with the causation, the nomenclature of disease alters. The causes of to-day are the effects of to-morrow, thanks to the rapid progress and improved methods of research in the biological and chemical departments of our science. To this fact no doubt is due the confusion that exists in the names of our diseases. Fever we will say is the result of inflammation, an inflammation due to an injury, and the injury we will suppose was inflicted by an organism or its toxin. Which of these is the real disease? In some cases they have all been regarded as diseases at different times. Some terms loosely employed to this day will illustrate this. There is brain fever, meningitis and tuberculosis, all connected with each other as cause and effect, and yet all these terms are used indiscriminately for the same case. "The names of diseases at present in vogue are but labels given to symptom groups which in point of etiology are but ill understood and less explained." With such a loose conception of their causation it is impossible to define fevers or classify them satisfactorily. Without an absolute idea of

its complete causation, of all its phenomena, and the extreme limits of a disease, how can we give it a local habitation and a name?

The old-time classification of causes into predisposing and exciting is itself inaccurate. "The same cause may be both predisposing and exciting; or what predisposes to disease in one case may excite disease in another. To this day it is difficult to decide the predisposing and exciting claims of cold and coccus respectively in pneumonia. Which of these arrived at the lungs first? What if they both came at the same time."

Search where you will in the archives of medicine, one fact comes out patent above others—namely, that the names and numbers of fevers have multiplied out of all proportion to the remedies for their cure. Some diseases, history proves, have been born since the ancients studied and practised medicine. The altered conditions of life under the influence of modern civilisation, which in this respect at least is not an unmixed blessing, the general deterioration induced by various causes in the average standard of health of the average human being are partly accountable for the presence amongst us of certain previously unknown diseases. Further, the facilities of transport in our time whereby diseases, more especially specific diseases can travel from one part of the world to another, materially help their spread and subsequent modification.

This process of multiplication is most noticeable amongst fevers. Many fevers which were before apparently identical have been differentiated from each other by systematic clinical observation of their symptoms and post-mortem examination. But to the bacteriologist we owe the greater

part of the new nomenclature of the so-called infective and infectious diseases. Within the last fifty years; thanks to the work of Pasteur, Lister, Koch, and others, we have discovered more diseases than we can fairly handle. The pathological bacteriologist is almost entirely responsible for this. He has divided and sub-divided his bacilli, micrococci, spirilla, protozoa and what not, so infinitesimally that one is fairly bewildered by the array of microscopic enemies that can assail a poor human body. He has given names to the organisms of many diseases and predicts discovery of more. He is sure that, given a stronger lens or better eyes, he will find you the specific organism of syphilis, hydrophobia, or any other fever. One American doctor (with a big A) announced he had discovered the bacillus of death. He went further. He found its antitoxin.

So far, however, we have not proved the existence of a definite agent in every case. On the other hand, in some of the most prominent infectious diseases, in which there is a moral certainty of a specific organism being present, none has been demonstrated. Yet we cannot deal with these cases until we assume the fact of their being microbic diseases for all practical purposes. Even admitting this postulate, we find our classification not all we desire. We still have many fevers which are based on the symptomatic rather than on the anatomical or bacteriological basis.

Conversely as I have already incidentally mentioned, the real and undoubted connection of any given organism as a sole specific causation in any given fever is not definitely and finally settled in every case. Pneumonia is a specific disease and so is dysentery; but, there are at least three organisms found in a pneumonic lung and I believe thirty-three in the

Dysenteric bowel. Which of these is the real cause? or how many together? or is any one of them absolutely necessary? Here again we have, for the present, to shut our eyes and accept what the trained bacteriologist has to say about his little pets, their life-history, their food, their poisons and their antidotes. He is the zoologist and botanist of the infinitesimal run mad. He and his microscope keep peering into the dark corners of the unknown world for the small fauna and flora of the saprophytic and parasitic classes and ferret them out one by one with a label round its neck and a host of sins on its back. Even he sometimes sighs in despair and gives up some regions of that world and in the illogical phraseology of Spencer declares them unknowable. Have you noticed that the deeper he dives the smaller and more recentric the organisms he brings up. Smaller and smaller they have become until we are left to conjecture the size of the yet undiscovered ones with the aid of the mathematical idea of  $\frac{1}{\infty}$ .

But though we clinicians may at times be inclined to cavil at the finess of the bacteriologist in his laboratory, we cannot but admit and admire his patient search after truth, through all the mazes of a world as intricate and extensive as it is new and wonderful, and gratefully acknowledge our indebtedness to his labours. We owe him at present the only means at our disposal of combating some of the fevers with any hope of success. He has materially helped our diagnosis and has found for us antidotes for some of the poisons.

From anetiological standpoint the recent additions to the class of infective and infectious diseases are of the highest interest. Let us glance at a few that concern us here.

When I commenced my medical studies nearly 19 years ago, malaria, was still largely regarded as a palludial disease, and this in spite of the discovery by Laveran in 1880 of the malarial organism. Since then the labours of Marchiafava, Grassi, Bignami, Manson, Ross and others have completed the life-history of the parasite, and malaria is once for all recognised as a specific fever. But old ideas die hard. Not so long ago there was a serious correspondence in the *Lancet*, in which some writers with more courage than knowledge essayed to go against the current by maintaining that the parasite of malaria was a myth; and to this day there are not wanting some earnest physicians of the old school who honestly believe that the mosquito-malarial theory is a fad and a fable. These we may take it are the extreme conservatives of our profession—of the class that believe that what was not cannot be, and if there be must not be. Instances of this class have flourished in all ages and in all climes. At the time that Sir James Simpson introduced chloroform in labour there was a clique that joined hands with the clergymen who hurled at him the verse from the Book which says "In sorrow thou shalt bring forth children" and called him a blasphemer and a fiend. The Christian science folks in America believe—I dare say honestly believe—that all the ills that flesh is heir to are a visitation from on high, for the sins of wrongdoers, and, to go counter to the decrees of Heaven and deal in drugs is an additional burden on the human soul. There are people here in this city that *will* have it that plague is being kept out of Hyderabad solely by the prayers of the local saints, and hygienic measures would alone be futile, but

partake of the nature of an iniquity and want of faith. Happily such gentlemen are rare. The opposition to new ideas is almost a human institution, but if the ideas contain even an element of truth, they will triumph and flourish. Error is transient, but truth is eternal. Error is but the shadow cast by the bright light of truth against the dark figure of ignorance.

What applies to malaria with reference to its practical etiology, applies with equal truth to many other diseases which have lately been added to that category, *e.g.*, Malta fever, Black Water fever, Tripanasoma, Sleeping sickness, &c.

• Some diseases are conveyed directly from person to person, *e.g.*, syphilis; some by air, as small-pox; some by water, *e.g.*, cholera; some by earth, *e.g.*, tetanus; others by food, *e.g.*, typhoid; and last, but not least we have those propagated by other animals, *e.g.*, trichinosis, flariasis, malaria, &c. These various methods of conveyance we know, and have definitely settled, for some of the infective and infectious diseases, any undue spread of these is usually regarded in all civilized countries as a serious reflection on the Medical Faculty of the part where such a spread occurs. Where there is a distinct division of labour and men are told off to see to the purity of air and water and the housing of a community, the lay public have a right to hold these sanitary authorities responsible for any abnormal spread of a communicable disease.

No one will admit more readily than myself, the difficulties that have to be surmounted in the practice of sanitary measures in a conservative community. The trouble given by the great unwashed in the introduction of any hygienic reform, their readiness to construe any innovation

in the sanitary life of a community as an infringement of personal liberty, must be patent to any one that has worked amongst the poor of a large town. But it seems to me that such opposition is nothing compared to that presented by the prejudiced of a civilized or educated country. Have we not the Anti-Vivisectionist in Europe, the Christian Scientist in America, and the Conscientious objector in England? These are formidable enemies, not alone of our profession, but of mankind, for their weapons are polished and their madness has method. Our conscientious objector here is comparatively ignorant and without means; and any properly constituted authority, may if it chose to exert itself, bring them round to the acceptance of a well-recognised sanitary reform. But the question is "Is sufficient interest evinced by the State departments in the working out of these problems of local sanitation? Is sufficient pressure brought to bear on the people to force on them health-giving and health-preserving measures?" I asked a medical man of some standing here what measures he would adopt in case the plague visited Hyderabad City, and he said "we had better leave them to their own fate."

Dysentery is now universally regarded as a germ disease and periodically it assumes an epidemic form. In Hyderabad at any rate and especially in children, it recurs with unremitting regularity as an epidemic with the commencement of the monsoon, in the months of July and August. This is the local belief, and, in my own short experience of ten years or so, I have verified the truth of it. Popular theory puts it down to the cows grazing on the fresh green grass and other vegetables which disagree with them and vitiate their milk, which latter in turn

vitiates the delicate intestines of the hand-fed child. Probably there is something in this. At any rate this may serve as a predisposing cause. But I suspect that the Gowlec mixes with the milk, water from the nearest pool regardless of the fact that its situation was favourable to contamination by organisms. There is yet another possible link to connect the epidemic with the season. Our friends the flies do not in season care to go out of the house when the weather is inclement and so pester us indoors getting into water, milk, sugar or anything they have access to. May not a fly contaminate the milk of a child if he happens to have visited a dysenteric patient previously?

These are questions that, I think, are worth looking into. For the past 8 years, every year without fail about this time of the year there has been a *crop*, sometimes small and sometimes large, of typhoid cases that occur amongst the children of the St. George's Grammar School. I have myself treated at least one case every year. Some steps, I understand, have been taken to minimise recurrence, but, so far as I can find out, no explanation is forthcoming for this persistent endemicity and until the source of infection, the real cause, is discovered, we shall be only groping in the dark for a remedy.

Even in Judea, before Christ, lepers were kept out of town, but our lepers in Hyderabad walk the streets and thrust their infected and infecting bodies into disgusting prominence, to the evident detriment of the common weal. I have myself seen children in the bazaars with the scabs of small-pox and the scales of measles thick on them. Is it not time that some action were taken by the State in this matter. And are we utterly

powerless to help it? Of course, where we do not know the exact mode of entry of a poison, or knowing, cannot easily control it, neither we nor the State can do much; but where the knowledge of our profession and the power of the State can avail, I think it is the duty of every one concerned to get at the real mode of conveyance of these diseases with a view to preventing the enormous loss of life that is brought about by them.

Is it possible to conceive of a prototype of disease by pushing our etiological investigations far enough? The chemist, the physicist and the biologist alike seek an original type in mineral and animal or plant life which, under certain conditions and with certain developments and modifications, can appear different and alter its character and mode of life. The chemist has hypothesised his "protile," the physicist is working with his atoms and the biologist has got hold of his protomalia. The tendency has even been to merge the organic into inorganic life; in other words, to evolve life from so-called dead matter. The most interesting work in this connection has been that of Prof. Bose of Calcutta, who has experimentally proved the existence of life in metals and other apparently inert bodies. Owen and his school applied this principle to disease and hypothesised a transcendental phenomenon,—a protean disease to which the ordinary types were more or less approximations. The trend of modern investigations has been to negative this idea. The discoveries of Pasteur on the side of pathogeny and of Conheim and Metschnikoff on the dynamical side of histology have dissipated the older ontological notions of disease and destroyed for ever the claims of fever and inflammation to be regarded as separable entities. Still if

the conception of this original type be limited to that general deviation of the whole system from the normal of health which is induced by injurious causes, I think it may be convenient to retain it and even to give it more definite shape; for it is possible that it may help us materially in recognising the necessity for the treatment of the diseased as well as the disease the constitution as well as the cause. This adoption and carrying out of this idea is, as we shall see later probably the source of the success which the Greek and Hindu schools of medicine have achieved in their dealings with disease.

[To be continued.]

## Cases and Comments.

### Three Cases of Foreign Bodies in the Nose.

Cases of foreign bodies in the nose, especially in children, are fairly common. Several such cases have come under my observation, but I select here three typical cases. (1) A Hindu boy, about 3 years old, was brought to me in September, 1901, with a foetid discharge from one nostril. There was no pain or tenderness on pressure. There was no history except that the discharge commenced some months ago and since then the child had been treated by various medical men for an "ulcer in the nose." On a rhinoscopic examination I noticed the point of a foreign body by the side of the middle turbinate body. I

caught hold of it by a pair of nasal forceps and extracted it. It was a small twig of a plant with 3 or 4 leaves in a high state of decomposition. After the foreign body was removed the nose was washed out with Dobell's solution and the child was sent home. A few days after that, when I saw the child, the offensive discharge had stopped and the nose was perfectly well.

(2) A Brahmin boy, 6 years old, was brought to me in May 1902 complaining of obstruction and discharge from one nostril. The boy had been under medical treatment for some time for "polypus of the nose." On examination I noticed a fairly large foreign body firmly lodged between the inferior turbinate body and the septum in the right nostril. I removed the foreign body with a scoop. I never could make out what it was as it was very much decomposed. But it felt very much like a piece of vegetable of some sort. After the removal of the foreign body the discharge stopped and the child got all right.

(3) A European child (girl about 2 or 3 years) was brought to me last year with a history of pain and discharge from one nostril. There was also obstruction in that nostril. The medical man who was treating the child used to syringe her nose, and after syringing it was noticed that both the pain and obstruction became markedly increased. As the child did not allow a proper rhinoscopic examination to be made, I put her under chloroform and explored her right nostril. There was detected a foreign body between the inferior turbinate body and the septum (a favorite position for a foreign body) in the right nostril which was removed with a scoop. It was a piece of cork and hence the increase of pain and obstruction after syringing the nose. The child got perfectly well in a few days.

*Remarks.*—The most noteworthy point in connection with all these cases is the absence of any history. We hardly ever get a history of the introduction of a foreign body into a child's nose. The few cases in which such a history is forthcoming there may be no foreign body in the nose at all. Therefore in such cases no reliance can be placed on the history. Secondly, the most constant symptom in all such cases is a discharge from one nostril which, in the majority of cases, is fetid. Pain is generally present, but there are large numbers of cases of foreign bodies in the nose where pain is not one of the symptoms. The occurrence of a unilateral fetid discharge from the nose, especially in a child, and accompanied by obstruction should lead to the suspicion of a foreign body. And the *only* way to clear the suspicion is by a proper anterior and posterior rhinoscopic examination. In old-standing cases granulations and swollen mucus membrane may entirely hide the foreign body, in which instance palpation with a probe will disclose the true nature of the case.

I have said that anterior and posterior rhinoscopic examination is necessary because it is well to bear in mind that foreign bodies may enter the nose through the posterior nares as well as the anterior nares. The entrance through the posterior nares is usually the result of vomiting, or it may be the result of an effort to prevent a foreign body entering the larynx, driving it up the nose. Paralysis of the soft palate would considerably favour this accident. Mr. Cresswell Baber mentions a case, which he saw in the practice of another surgeon, where a very free removal of the tonsils subsequently caused entrance of food into the nose on deglutition.

As for the treatment of such cases, the very first idea that will occur to a general practitioner is to syringe or douche the nose. My advice to anyone who feels tempted to syringe a nose which has a foreign body inside it is—"don't." If the douche is used on the obstructed side it will only drive the foreign body backwards. If used on the other side, unless the foreign body were very small, there is great risk of the liquid entering the tympanic cavities. The best method of removal is by means of instruments.—scoops forceps or snares. These are likely to fail only when the foreign body is too large. In such cases Voltolini recommends the boring of the foreign body by means of the galvano cautery and thus reducing its size, Betz relates the case of a child who got a piece of vulcanite inside its nose. As the vulcanite piece was too big to be removed, Betz divided it with galvano cautery and removed it. The golden rule in all cases of discharge from the nose is to do nothing until a proper rhinoscopic examination has been made.

T. M. N.

#### Adrenalin as a Hæmostatic in two cases of Hæmorrhoids.

BY

U. RAMA RAU,

Medical Practitioner, Madras.

A robust and strong-built lady, Mrs.—aged 35 used to get "an attack of piles" once in 2 months or so. It used to subside generally in 2 or 3 days by taking a dose of castor oil and a few doses of hazeline. As usual the attack came on the 1st July, 1904. She consulted her usual medical attendant and he administered a dose of P. and  $\frac{1}{2}$  an ounce of Hazeline every 3 hours (her usual medicine). This

time the pain was of a very severe type and the bleeding profuse. With every evacuations of her bowels she lost from  $\frac{1}{2}$  an ounce to 1 ounce of blood and she is reported to have fainted after passing her motions. The usual medical attendant went on administering medicines for a week with no benefit. I was told that he gave hamammalis, ergot, conf. senna, etc. I was called in on the 11th July, 1904. When I took charge of the case she was in a very weak state, her pulse was small and feeble, very pale. The pain was very severe—unbearable. She was very restless on account of not having sleep for several nights. On examination the piles were red and inflamed, very painful to touch. Each motion was agonising to her.

*Treatment.*—Gave a good warm water enema (before introducing the nozzle of the enema I swabbed the whole inflamed area with cocaine solution 4 per cent. to prevent causing her any extra pain). After washing out the bowels well I injected 5 minimums of Adrenalin solution (1 in 1000)—(Parke Davis, and Co.) mixed with one dram of distilled water per rectum. Repeated the same injection every 3 hours till 4 injections were given. The patient had only 2 motions that day, passed only one dram of blood at each time. The same treatment was continued for the next day. She had 3 motions next day, no trace of blood. Ever since that time she is free from pain and bleeding. She was given general tonic for some days and she has regained her strength and is all right now. (Of course the cause of bleeding still there. I have recommended operation, which is the only radical cure for piles.)

The 2nd case is of a middle-aged man, Mr.—, who used to bleed often profusely from

hæmorrhoids, whom I had treated often by injection of 2 drams of hazeline per rectum. That used to stop the hæmorrhæge after 3 or 4 injections. As he came to me during the last attack, after my experience of adrenalin solution, I used the same injection for him. Two injections of 5 minimums of adrenalin solution (1 in 1000) with one dram of water set him completely right. Though this only temporarily stops the hæmorrhage, it is very satisfactory to see its effects as a hæmostatic.

#### A case of Laryngismus Stridulus.

BY

A. Y. NARAYANIAH, L. M. & S.

Trinnevelly.

R, son of a medical man, aged 11 years, of thin build, nervous temperament and a highly sensitive nature, took his breakfast at 11 a. m. on the 26th August and had a holiday stroll with his comrades till 7 p. m., when he returned home. He had walked over 5 miles and been playing the whole day in the sun, with such shade as was afforded by the fine old avenue trees planted by the ever-to-be remembered Mr. Puckle. On reaching home he got a severe scolding from his father—who, by the way, is extremely lenient and disciplinary by turns—, took a hasty dinner and went to bed in humiliation. By 8-30 p. m. the boy was fast asleep. The father slept by his side and was awakened at 1-20 a. m. by the boy's noisy breathing. He got up and found the boy making deep noisy inspirations. The boy was much distressed and alarmed and gasped out that something was choking him. Some water was given him to drink, but this did no good. The struggle for breath increased,

the veins in the neck became engorged, the face got congested and the stomach became rigid with distension of gas and there were frequent loud eructations. The symptoms looked like a strange mixture of hydrophobia and pertussis. The spasm was suspected to be due to indigestion and on tickling his fauces, some glairy mucus and partially digested rice were vomited. As the severity of the symptoms did not abate, the boy was put to bed and a few whiffs of chloroform were given. This quieted him a little and while the bed-clothes were being adjusted, the tell-tale stains on his cloth of jumbum fruits he had knocked down from the roadside trees and eaten during the day, were noticed. The boy was sure he had not swallowed any seed, but said that there was something sticking in his throat. The finger was passed well to the back of the throat, but discovered nothing. The probang was then passed into the stomach without any pitch and as the instrument was withdrawn, the boy said the choking sensation was gone. Presently, however, the struggle for breathing recommenced and he was as bad as before. It was now past 2 a. m. The Assistant Surgeon, Dr. Sreenivasagam Pillai, who lives 4 miles away, at Palamcottah, was sent for and a few more whiffs of chloroform administered. In a few minutes, the boy got better, and fell into a gentle sleep. The stridulous breathing continued till 4 a. m., when the Assistant Surgeon arrived. The boy awoke to say that he felt all right, but his throat was hoarse. The boy is playing about the house to-day with a short dry cough.

In reporting this case, the following notes are made:—

(1) The disease is said to be less common in America than in England. It is very uncommon in India. The present

case is the first in the experience of the boy's father.

(2) The symptoms were watched from beginning to end by a medical man.

(3) The spasm came on evidently as the result of the *scolding* and *indigestion* (caused by jumbum fruit and sulkily taken dinner). These are given as common causes by Osler. The moral conveys a warning to parents.

(4) The comparatively advanced age of the patient—11 years. The highest age recorded is 9 years (Fagge and Pye-Smith).

(5) The occurrence of the neurosis in a boy who has been keeping good health and who is not rachitic.

(6) The unusually long duration of the fit.

(7) The close resemblance between the symptoms and those caused by the presence of a foreign body in the throat.

The boy has had no recurrence of the symptoms. He is being carefully treated for the huskiness of voice and cough left behind, being the writer's "young hopeful."

### Hiccough and its treatments.

BY

A. Y. NARAYANIAH L. M. & S.

*Tinnevely.*

In the last sentence of his article on 'Pilocarpine in the treatment of Hiccough' in the July number of 'the Antiseptic,' Dr. U. Rama Ran. desires to elicit the experience of his fellow-practitioners as to the management of this common symptom and I therefore record mine.

Of the several cases of hiccough that have come under my care, both as a complication of other diseases and as a disorder by itself, two cases come prominently to my mind. One was a retired Police Constable, about 57 years old whom, I treated for intermittent fever about 15 years ago when I was practising in Triplicane. The patient had suffered for several months from Intermittent fever when he came under my treatment. After vigorous treatment with quinine, the fever left him and after a few days of tonic treatment, he wished to have an oil bath which I permitted him to have. Within an hour after his bath, he began to be troubled with a hiccough for which he ate some black pepper and salt. The hiccough became so frequent and distressing that he sent for me. At this distance of time I distinctly recollect that I was seeing the patient several times a day, giving him all sorts of medicines and diet without any benefit. In my utter helplessness I turned over the therapeutic index pages of Dr. Carter's Elements of Medicine and found that I had tried all the other medicines mentioned therein except pilocarpine. I forthwith gave my patient  $\frac{1}{20}$  gr. pilocarpine hypodermically and in 10 minutes the patient was blessing me with all the vehemence and gratitude of a recently cured patient and he did not require a second dose.

The other case occurred in my practice here about 5 years ago. When I was called to see this patient who had suffered from a distressing hiccough for nearly two weeks, and who had been given all kinds of treatment by several doctors of various denominations, I felt an inward joy wanted show my superiority over all the medical men who had previously treated the case, cleaned my hypodermic syringe and fondly petted pilocarpine tabloid tube

and went to see the patient. I found the patient very emaciated, not having had proper foods and sleep for several days owing to the hiccough; there was extreme anxiety in his face and he was hiccoughing about 30 times a minute. I was informed that he was a strong man with no disease of any kind prior to the commencement of this hiccough, and that there was no other trouble. He was about 30 years old. I gave him a hypodermic injection of pilocarpine ( $\frac{1}{20}$  gr.) and buoyantly awaited the result. Half an hour elapsed and yet the patient was hiccoughing away. I told him to send for me again if the hiccough did not stop in 4 hours' time, with what a feeling of disappointment you may well conceive. I was promptly sent for at the 4th hour, when I repeated the injection, with no better result. In the night I injected  $\frac{1}{2}$  gr. morphia hypodermically and the patient did not fare any better under this treatment. The next morning when I visited my patient, he was as bad as ever and was knocking his head against the wall in utter despair. I had become very sober by this time and quietly ordered him a mixture containing 10 grs. of pot. bromid and 10 grs. of chloral hydras, in each dose, to be taken every 3 hours. What was my surprise when I was informed that after taking 2 doses of the mixture the hiccough completely stopped! He, however, took all the six doses ordered him and was not subsequently troubled with the hiccough. With my experience of other cases I have learnt the lesson that Hipocrates has taught that "Experience is fallacious and judgment difficult."





## THE ANTISEPTIC.

September, 1904.

### The perpetual Pursuit of Therapeutic Novelties.

The desire for novelties has always been one of the human failings. It remains now as prevalent as when the Athenians of old clamoured for new things and new doctrines, and nowhere is its existence more manifest than in the Department of Therapeutics. Sir Dyce Duckworth, one of the most eminent, experienced and respected of London medical men, took occasion the other day to refer to this mischievous element in modern therapeutics. "What we may ask is the mischievous element in modern therapeutics," asked Sir Dyce Duckworth. The answer to that question we shall give in Sir Dyce Duckworth's own words. "A perpetual pursuit of novelties, an untiring effort to produce new remedies, the enjoining new methods of dietary, and, with all this, the inevitable loss of any well-acquired principles of treatment as founded on long experience of others, or of personal experience laboriously acquired for oneself." Every medical man now-a-days is bombarded with pamphlets and leaflets extolling the virtues of some new drug or other with an outlandish name. They mostly come from Germany or America. We have

suffered from this bombardment by pamphlets and specimens of new drugs for sometime past, and we have endured it with calmness and patience. We were under the impression that it was a penalty we had to pay for being a very humble member of the rank and file of the medical profession. We now see that even the leading medical men in Europe are not exempt from this annoyance. For, says Sir Dyce Duckworth, "every week I am informed from German and American sources of some new synthetical compounds and so-called foods, generally with unpronounceable names, which I am invited to use on the strength of monstrous assertions and the raw experience of some young and imperfectly trained physicians." But Sir Dyce Duckworth is quite equal to the occasion and he has a delightful way of meeting this bombardment. "The documents setting forth the encomiums on these so-called remedies," says Sir Dyce, "go quickly into my waste-paper basket, sometimes with parcels of these strange compounds." Sir Dyce Duckworth is one of the most practical physicians we have known and nothing can be safer than to follow his practice. Since reading about his method of disposing of the so-called literature on new drugs, we have invested in a new and more capacious waste-paper basket than the one we possessed before. But we cannot help sharing Sir Dyce Duckworth's fears that these documents "often enlist the interest of some practi-

tioners, who, believing this nonsense, forthwith set to work to try their effects on patients." Of how many of these drugs can it be said that we know the true qualities. Sir Thomas Fraser, than whom there is no higher authority now living in pharmacology and therapeutics, says: "The determination of the mere action of any one of these drugs would require at least six months' study by a skilled investigator. The establishment of its therapeutic uses, apart from the knowledge obtained from this study, by relatively crude and unsatisfactory observations in disease, could not be accomplished within the lifetime of a generation." Can there be anything more pernicious than this haste to use new remedies without a proper knowledge of their physiological action or therapeutic uses. We have learned the absurdity of this readiness to use imperfectly understood new remedies from sad past experience. Once—and only once—were we tempted to use a drug of which all that we knew was from the so-called "literature" on the drug which the manufacturer sent to us along with a small quantity of the drug itself. The drug was Cacodyllate of Iron and the disease in which it was alleged to be so efficacious was phthisis. Cacodyllic acid is a compound of arsenic and it was alleged that this compound could be administered in increasing doses without producing any of the toxic symptoms of arsenic. We had at that time a fairly bad case

of phthisis under our care and we were tempted to use this cacodyllate of iron. We used it for about a month. True, there was no toxic symptoms of arsenic, even though the drug was given in increasing doses, but all the same the patient derived not the least benefit from the treatment. A couple of months after that we read an article by Sir Thomas Fraser on Cacodyllic Acid and its Compounds. In that article Sir Thomas Fraser pointed out that cacodyllic acid when administered internally passed through the system *without undergoing any decomposition and is excreted in the urine in an unchanged condition*. So cacodyllic acid administered to a patient exerts as little effect on his system as a glass of soda water. Well, the next consignment of cacodyllate of iron we received together with a second parcel of the literature on the subject we consigned to a far less respectable receptacle than our waste-paper basket.

We are sorry that the evil that Sir Dyce Duckworth complains of is far more prevalent in Madras than it is, perhaps, even in London. For this we are afraid that a certain section of the general public offer indirect inducements. The tendency on the part of some of the members of the Madras public to consider a physician who prescribes new-fangled remedies with unpronounceable names as an "up-to-date doctor" tempts many a medical man, who is anxious to get on in practice, to take the necessary steps

which will make him "up to date" in the public eye. But, as Sir Dyce Duckworth so beautifully puts it, "This is very bad, and unworthy of well-trained practitioners. The state of mind it reveals is simply lamentable. I maintain that the mental attitude which is content to be always in pursuit of the latest novelty, and to be expert with the newest product of the chemical laboratory or tradesman is not that of the calm and level-headed physician." These are strong words, but not stronger than what the occasion requires. Sir Dyce is not a mere destructive critic. He has a remedy to offer which will improve the existing state of therapeutic chaos. The remedy that Sir Dyce prescribes for the malady which he has so fully described, is "the importance of practitioners requiring a full knowledge of the British Pharmacopœia, and of the art of prescribing appropriately." Sir Dyce's prescription is excellent. In a large majority of instances it is to hide his ignorance of the art of prescription-writing that the young medical man has recourse to prescribing new-fangled remedies. "The untidy, inadequate and inappropriate prescriptions" which are now generally written by a good many medical men prove the state of their knowledge of pharmacy and of prescription-writing. To improve matters in Madras there is only one way—and that is for the University to take the matter up. We would suggest

that, for the final degree examinations for medicine, there ought to be set special papers in prescription-writing and a special high minimum be insisted on in this subject, failing to obtain which ought to render the candidate liable to be "referred" for another year. A similar test ought to be established for Hospital Assistants as well. "One man may take a horse to the water, but twenty men can't make him drink" It is one thing to make a suggestion and another to get it carried out.

### Our Contemporaries.

#### Midwifery and Diseases of Women.

##### Some of the Newer Methods of Opening and Closing the Abdomen.\*

[By E. HASTINGS TREWEDY, F.R.C.P., I.,  
Master of the Rotunda Hospital, Dublin.

THERE is no more remarkable fact in the surgery of the present day than the want of unanimity existing as to the best method of opening and closing the abdomen in abdominal operations for pelvic disease. The propriety of a vertical incision has only recently been called in question. It is still the operation of election amongst British surgeons, but on the Continent the transverse incision has largely superseded it. This plan, since my appointment to the Rotunda Hospital in November last, I have adopted in 19 cases, and it is to the result of my observations in these that I now desire to draw attention.

\* Read before the Obstetrical Section of the Academy of Medicine, Ireland, Friday, April 15, 1904.

Let me first say that the transverse incision is performed in two ways, different, but not antagonistic, and which of the two the operator adopts depends entirely upon the object he has in view. If his purpose be to obtain the most extensive view ever yet attempted of the pelvic regions, he should proceed as Mackenrodt does in his very radical operation for uterine cancer. The skin, fascia, recti muscles and peritoneum are divided by a long slightly curved incision, close to and above the pubes; portions of the oblique muscles at either side will probably be also severed, and by this an extraordinarily clear view and extended field will be obtained in which to operate. The incision is a formidable one, necessitating, as it does, the severance of the muscular supports of the abdomen, the proper union of which can never be hoped for, a weak scar is more than likely to result, and save for the removal of cancer, I know of no justification for such an incision. If, on the other hand, the object is not primarily that of obtaining an extensive view, the second method will be found applicable, and, I believe, preferable in many cases in which a vertical incision has heretofore been made. In it a transverse and slightly curved opening is made at the margin of the pubic hair, through skin, adipose tissue, and sheaths of the recti. These structures are raised as a thick flap above and below the incision, from the muscles lying beneath them. The division between the recti can now clearly be made out the latter are separated and the abdomen opened in the usual manner. The advantages of such an incision are manifest. In the first place it runs in the direction of the elastic fibres of the skin, as a rule the parts fall naturally into position on the completion of the operation, and the fear of hernia is reduced to a minimum, the severed aponeurosis is, throughout the greater part of its course, protected by the muscles, and it is only the transverse slit extending between these that could by any possibility permit of the escape of the ab-

dominal contents. The application of a few interrupted sutures, superficially placed in the muscles, sufficient to keep them in apposition until adhesions form between them and their overlying fascia, will effectually prevent the occurrence of hernia. The scar left after such a wound has no tendency to spread. It runs in the direction of the natural wrinkles of the abdomen, and has the added advantage of being covered by the pubic hair.

I have on several occasions curved the incision to a considerable degree, in order to obtain more room. This I now look upon as a procedure to be avoided if possible, as it adds to the unsightliness of the scar. This method of operating should be confined to the less severe abdominal sections. In suitable cases, however, it will, I am sure, steadily gain in favour. On one occasion the fascia did not come easily together, and excessive strain on it had to be prevented by keeping the patient's legs flexed for a few days. One case alone showed slight indications of a stitch abscess at the extreme end of the incision: the operation was undertaken for the cure of an old ventral hernia. It was impossible to sterilize the skin sufficiently. The woman suffered from a severe bronchial cough of a chronic character, and as a further complication a pneumonic area of dulness developed after the operation. Finally, I may add that the incision does not lend itself well to the employment of an abdominal drainage tube.

Hernial formation is unfortunately a very common sequela of abdominal operations. In no less than six instances I have opened the abdomen within the past four months for the relief of this complication. Of these, two were operations not performed in this country, and one of them was so remarkable that it is worthy of being recorded.

The woman entered the hospital some four weeks ago, suffering from the effects of a former abdominal section performed eight

years previously. On the evening of her arrival in hospital, during a fit of coughing her abdomen ruptured, and masses of intestines extruded on to the skin, the pubic hair, and sheets. A full hour elapsed before an operation for her relief could be effected, but notwithstanding, I am happy to say, her recovery has been uneventful.

The prevention of hernia is, I think, entirely dependent on a proper technique being followed in the closing of the abdominal wound, in the accomplishment of which the main objects should be strict asepsis, careful apposition of the more important abdominal layers, and lastly the prevention of subcutaneous hæmorrhage. The attainment of these ends will always remain doubtful in the practice of those surgeons who employ the through and through suture.

It seems to me a safe precaution to close off the peritoneum in the first instance, which can be very readily accomplished by means of a continuous suture of fine silk. This No. 2 silk is with us antiseptically prepared by being boiled on two occasions separated by an interval of twenty-four hours in 1 in 1,000 corrosive sublimate solution. The object sought by such preparation is to render the silk actively inhibitory to the growth of germs with which of necessity it must come in contact until such time as the phagocytic action of the tissues can exert their full power. Whether the posterior sheaths and recti muscles should be sutured is still a debatable point. For my part I believe such a procedure is not alone unnecessary but positively harmful. The union between muscular structures is proverbially weak, and sutures piercing at right angles to their fibres must impair their vitality by strangulating portions of their vascular and nervous supply.

It is no doubt essential to keep the muscles in close apposition, and this can with certainty be done by properly suturing their external sheaths. To attain this end I was formerly in the habit of uniting the sheaths by

interrupted sutures of silk-worm gut placed in mattress fashion after the manner advised by Kelly. This proved most satisfactory, and has only now been abandoned by me in favour of the fine continuous suture of silk for the reason that the latter can be applied more rapidly. The method of suturing above described will almost certainly protect against future hernia, and I need hardly say that, bringing it to your notice I make no claim to originality.

The closure of the skin wound I have not as yet dealt with, and it is in connection with this that I desire to call attention to my recently introduced method which, so far as I know, is novel. I pass a subcutaneous silk-worm gut suture immediately beneath the skin in the usual manner and thread either end through a perforated leaded plate similar to the one I now show. These plates are cut out of ordinary roof lead; in width they measure about two inches, while their length is made to correspond to that of the incision. The lead can be perforated opposite the ingress and egress of the suture by means of a strong surgical needle. Through these the ends of the suture are passed, and having been drawn that are tied together over the plate. The plate should be sterilised, and both it and the skin be in a perfectly dried state before its application. Antiseptic dressings are placed over the plate, and an abdominal binder applied in the usual manner, the parts being left undisturbed for fourteen days. On the expiration of that time the dressings can be removed and will be practically unstained. The suture is now cut and the leaden plate lifted off. It does not adhere to the skin, but will be found to act after the manner of a smoothing iron in procuring exact apposition of the opposing edges, and preventing over-riding of surfaces. The plate affords a ready means of preventing the suture slackening, and does not permit the wound to pucker. Moreover, I feel convinced that the lead itself exercises a favourable influence on the healing process, for I cannot otherwise

account for the perfection of the scar.—*Journal of Obstetrics and Gynecology.*

### Ovarian Pregnancy.

Two cases of ovarian pregnancy in the author's practice are recorded. These conformed to the criteria laid down for this form of ectopic gestation, *i. e.*, (1) the ovary was involved in the sac; (2) the sac was intimately connected with the ovarian ligament; (3) the Fallopian tube, fimbriæ and infundibulo-pelvic ligament of that side were quite separate. The tube showed no signs of decidual reaction, the ovarian stroma only being affected. In neither of the specimens could any evidence of chorionic villi or other foetal remains be discovered, so that the presence of decidual cells in the ovarian stroma was the only proof of pregnancy having occurred. The author feels that this is the weak link in the evidence, but argues that these cells cannot be other than decidual. That they are not lutein cells is shown by their containing glycogen and by the absence of fat and pigment. Further, the clinical history pointed strongly to extra uterine pregnancy, and in other cases of ovarian pregnancy (Wyder) only decidual cells were present. Evidently hæmorrhage into the ovum took place during the first month, leading to absorption of the embryo and leaving only the decidual cells in the ovarian stroma as microscopic evidence of the occurrence of gestation. In the light of the criteria laid down for proving ovarian pregnancy, the author has collected all the cases he could find in the literature, and has grouped them in three classes—(1) *undoubted*, consisting of 19, including his own two; (2) *probable*, 10 in number; and (3) *doubtful*, 14 in number. Short notes and criticisms of all these collected cases are given, but judging from the references, many of them are not from the original papers, but from abstracts, so that the classification cannot be con-

sidered of any value. Croft's specimen is the only British one he acknowledges as undoubted; Mayo Robson's, Gilford's and Oliver's he classes as doubtful. Anning and Littlewood's specimen he has overlooked, and only two American cases—Cunna's and Mann's—are included in his list; the undoubted example recorded by Thompson he has missed. However, in spite of the incomplete and superficial way in which this paper has been prepared, it may prove useful to those investigating the question of ovarian pregnancy.

J. S. FAIRBAIRN.

Kantorowicz (LUDWIG). *Sammlung klin. Vorträge* (Volkmann), No. 370.

### Imperforate Hymen with Pyocolpos.

PYOCOLPOS due to imperforate hymen is rare before operation, but a case of this nature is reported by the author at the Hotel Dieu, Lyon. It occurred in a young girl of 17 who had never menstruated. Since the age of 15 she had complained of abdominal and lumbar pains which prevented her following her occupation as a servant. The day before her admission to the hospital she was seized with very severe abdominal cramps and retention of urine. The retention was relieved by a catheter, and a definite hypogastric tumour was then discovered together with a bulging but imperforate hymen. The hymen was incised under an anæsthetic by crucial incisions with the thermo-cautery and 500 to 600 grammes of thick blood-stained pus evacuated. The pus was examined bacteriologically, and contained diplococci (which stained by Gram's method), streptococci, and staphylococci. After incision of the hymen the finger was introduced and the vagina found enormously dilated, but the uterus itself was small and not affected. Drainage was employed, and the case did well, menstruation occurring regularly.

The case quoted is therefore, an instance of spontaneous purulent transformation of retained menstrual products. The cause of such suppuration is not clear; tuberculosis is out of the question, and intestinal infection seems negatived by the absence of the bacillus coli. Possibly blood infection offers the best explanation. The insidious onset and absence of severe symptoms in this case may be accounted for by absence of uterine distension.

C. HUBERT ROBERTS.

LAROVENNE. *Annales de Gynéc. et d'Obstét.*, April, 1904.

### Imperforate Hymen with Hydrocolpos.

A FEW hours after the birth of an apparently healthy child, it was noticed that when the child cried something resembling "a falling of the womb" appeared at the vulva. On examination nothing abnormal was discovered in the abdomen. Under ordinary circumstances the external genitals appeared normal, but when the child cried there was a bulging which exactly resembled the distension of the perinæum at the end of the second stage of labour. At the same time a small globular pink tumour projected from between the labia. This apparently was formed from an imperforate hymen. An incision was made into this tumour and 100 cc. of thin creamy fluid escaped. The vagina was found to be greatly dilated, but it was impossible to discover whether the uterus and tubes shared in the distension. The child did well. The fluid was sterile, and contained a large number of squamous epithelial cells and a few smaller cells. It contained albumen, mucin, glucose, chloride of sodium, and traces of urea. Commandeur thinks that the fluid was chiefly formed by secretion from the vaginal walls.

G. DRUMMOND ROBINSON.

*d'Obstét. de Paris*, February 18th, 1904.

No. 2.

COMMANDEUR. *Bulletin de la Soc.*

## MEDICINE.

### THE DIETETIC TREATMENT OF DIABETES.

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WITH the exception, perhaps, of obesity, there is no disease the treatment of which must proceed on more strictly dietetic lines than that of diabetes. At the outset, however, a supposed objection to such a method of treatment must be disposed of. I have often heard intelligent students argue thus:—"Diabetes is an incurable disease; what then is the use of dieting the patient? By doing so you merely suppress one of his symptoms (glycosuria) without doing anything to strike at the root of the malady." This line of argument, at first sight so cogent, is really fallacious. In the first place we do not know that diabetes really is, in every case, incurable. It is probable that only a small proportion of the subjects of the disease ever come under medical observation. There is reason to believe that many people suffer from diabetes in a slight degree without knowing it; and if such cases could be recognised early and treated efficiently, it may well be that they would never pass on into the full-blown stage of the malady. Further, there are a great many mild cases, especially in elderly people that, under suitable dietetic management may go on comfortably for an indefinite period but which, if neglected, develop complications which may lead to a speedily fatal issue.

But there are even stronger reasons which justify dietetic treatment in this affection. Most of the symptoms of diabetes are due to the presence of sugar in the blood; the disease itself is marked by two symptoms only—wasting and weakness. Practically all the other symptoms and complications are due to the irritating effects of sugar on the

tissues or to the necessity for its elimination in solution through the kidneys. From the former there result such symptoms as neuritis, perforating ulcer, cataract and retinitis, and from the latter polyuria and thirst. The saccharine blood, too, would seem to offer a very suitable medium for the growth of microorganisms; whence ensue such complications as boils, carbuncles, gangrenes, and phthisis. By ridding the blood of its excess of sugar, these symptoms and complications can be warded off if not yet present, or ameliorated if they already exist.

But there is an even stronger reason than this for removing sugar from the blood as far as possible. Whatever the true pathology of diabetes may be, everyone is agreed that in the last resort it must be regarded as a condition in which the sugar-assimilating function of the tissues is more or less impaired. Now this, like any other impairment of function, is improved by rest and still further deteriorated by overwork. But if the blood is freed from sugar, such rest is assured; whilst, on the other hand, if the cells are flooded with sugar, their overwork is equally inevitable. By strict dieting, then, the power of the tissues to deal with sugar is recuperated; and in consequence we find that a patient who prior to a period of strict diet was unable to assimilate any sugar at all, is often able after it to take considerable quantities with impunity.

For all these reasons, therefore, we may proceed with a clear conscience to our dietetic treatment of the disease, feeling that at least we are doing thereby all that can be done to relieve our patient's sufferings and to prolong his life.

Before proceeding further one other preliminary point must be dealt with, and that is the question of terminology. Much confusion has resulted from the use of two words—"diabetes" and "glycosuria." For the purposes of this article I intend to signify by the word "diabetes" a permanent glycosuria,

no matter how caused. Whether the permanent glycosuria of elderly, and often gouty, persons is or is not of different causation from the more severe form met with in young subjects, does not concern us here; from a dietetic point of view both must be managed on the same lines. This distinction only would I emphasise—that the younger the subject, the more continuous, energetic and careful should our treatment be; whilst the older the patient, the greater is the degree of laxity permissible.

#### CLASSIFICATION OF CASES.

Let us suppose, then, that we have to deal with an individual whom we have discovered to be the subject of persistent glycosuria, *i.e.*, of diabetes. How are we to set about adjusting his diet? Now the wrong thing, in my judgment, to do, would be to sit down and draw up for him a list of foods which are free from carbohydrates, and tell him that he may eat those; and another list of starchy and saccharin articles, and forbid him those. In other words, my point is this—that there is no routine "diabetic diet," but every case must be dealt with according to its own peculiarities. The main reason for this is that all cases of diabetes are not of the same degree of severity. In one the patient's power of assimilating sugar is nil; in another it falls but little short of that of health. Hence the first step we have to take is to find out what our patient's "tolerance" for carbohydrates really is; and to do that we must put him on a "test-diet." The simplest form of test-diet is one which consists of a moderate amount of animal food—excluding milk—and a known quantity of carbohydrate-containing material, say 4 ounces of bread. After three days of such a diet the patient's total output of sugar in one day is estimated, and the amount compared with that of the carbohydrates in the bread. Now 4 ounces of bread contain an amount of carbohydrate equal to 66 grammes of sugar. If, then, the patient excretes less sugar than that he must obviously have some degree of "tolerance."

but if more than that, then his tolerance is nil. The former case may be spoken of as a comparatively mild, and the latter as a severe one; and by varying the quantity of bread it is easy to ascertain what is the exact degree of failure of assimilation in any given case.

Proceeding thus we can divide cases of diabetes roughly into two groups:—

1. *Mild cases*, in which some tolerance of carbohydrates still exists, the degree of mildness varying directly with that of tolerance

2. *Severe cases*, in which there is no tolerance of carbohydrates at all.

And these two groups must be dieted on different lines.

#### DIET IN MILD CASES.

Suppose we find by a test-diet that our patient begins to excrete sugar if he is allowed 4 ounces of bread, but that on quantities less than that his urine is sugar-free. We ought then to allow him a diet which contains considerably less carbohydrate than that which we have found him capable of dealing with, for it is never safe to feed a diabetic patient up to the limit of his powers of assimilation. In this case we might safely allow him 2 ounces of bread along with abundance of the carbohydrate-free foods described below; and continue such a diet so long as his weight and general condition remained satisfactory. From time to time, however—say twice a year—such a case should be subjected to a period of perfectly strict diet in order to give his carbohydrate-assimilating functions a complete rest.

#### DIET IN SEVERE CASES.

If a test-diet has shown that the patient excretes more carbohydrate than he takes in, we must proceed much more cautiously. The next step in such a case is to examine the urine carefully for oxy-butyric acid and its allies. The easiest way of doing so is by the "perchloride of iron" test.

1. If the addition of a few drops of solution of perchloride of iron causes the urine to assume a dark port wine colour, any change of diet should be made very gradually, for such a patient is always in danger of coma, and the coma may apparently be precipitated by any sudden change in dietetic habits. The carbohydrates in the diet should, therefore be reduced very slowly, and bicarbonate of soda should be administered at the same time in quantities of from  $\frac{1}{2}$  to 1 ounce daily. Proceeding thus one can often get the patient gradually on to the diet of pure proteid and fat described below. Not infrequently, however, one meets with difficulty. The sugar excretion may remain high, and the patient's weight and general condition may deteriorate, or coma may threaten. If things shape thus, it is best to abandon all attempts at a rigid diet, and to allow a definite quantity of carbohydrate in the form of bread and milk. For it must never be forgotten that in some of these severe or, as Dr. Pavy calls them, "composite" cases proteid is as harmful in the direction of increasing the amount of sugar in the blood as carbohydrates. Even where everything is going well, it is not advisable, when one is dealing with this type of the disease, to give more than 500 grammes of cooked meat a day, or its equivalent in other forms of nitrogenous food. In many such cases one must reluctantly abandon all attempts to keep the blood sugar-free, and be satisfied if the output of sugar does not rise above 100 grammes per day.

2. If the perchloride-reaction is negative, one can proceed to a strict diet without much anxiety. Whether this should be done suddenly or gradually is a matter of choice. For my own part I think it is better, provided the patient can spare the time, to proceed gradually. One would begin by eliminating from the diet sugar and all the grosser form of carbohydrate; then the farinaceous foods then bread, and finally even milk, each of these articles being replaced as it is

withdrawn by a carbohydrate-free substitute. The final *strict* diet would be something as follows:—

*Breakfast*:—Bacon or buttered eggs, or both; or some cold ham; casoid-meal bread with plenty of butter; coffee made with sugar-free milk and sweetened with saccharin.

*About 11 a.m.*:—A glass of sugar-free milk and a diabetic biscuit or rusk.

*Luncheon*:—Soup; any animal food, *e.g.*, a little cold meat or game or some fish; cheese; salad with plenty of oil; some starch-free bread; as a beverage, any natural wine or a little spirit and aerated water.

*Afternoon*:—Tea with plenty of thick cream and a diabetic rusk or two, or biscuit, with plenty of butter.

*Dinner*:—Any clear soup with the addition of some grated cheese; fish; any meat; green vegetables with melted butter; baked custard made of sugar-free milk and eggs; beverage as at luncheon.

1. My own practice in such cases is to give 6 ounces of cooked meat, 2 pints of sugar-free milk, 3 eggs, and 4 ounces of casoid-meal bread daily, which together contain about as much proteid as 500 grammes of meat. If the sugar-excretion does not fall on this or if the patient loses weight, or if coma threatens, I add a weighed quantity of ordinary bread.

*At bed-time*:—A glass of sugar-free milk and a diabetic rusk or biscuit.

If such a diet suits the patient—and of course it admits of variation to meet individual tastes—and if the sugar-excretion disappears, he should adhere to it as long as possible. After a few weeks one may test his powers of consuming carbohydrates cautiously by allowing a weighed quantity of bread, and it will often be found that a certain degree of assimilative power has returned. In such a case one may allow a small quantity of bread (or its equivalent in some other starchy food) daily, the condition of the urine, however,

being carefully watched. More commonly one finds that the failure of assimilative power is progressive, and that cases which begin in this group pass sooner or later into the other; in which even on strict diet some sugar is excreted, though by careful treatment such a result can be postponed for a considerable time.

#### USE OF PARTICULAR ARTICLES OF DIET IN DIABETES.

*Fatty Foods*.—It might truly be said that the usefulness of any article of diet to a diabetic is in direct ratio to the amount of fat which it contains. For fat is the only nutritive constituent of food which cannot do a diabetic any harm: *it never increases the output of sugar*. It follows from this that a large part of one's duty to a diabetic patient consists in teaching him to eat as much fat as possible. The best forms of fatty food are bacon and butter, each of which contains about 80 per cent., Devonshire cream 60 per cent., and salad or olive-oil which are pure fat. Every diabetic should learn to consume at least a quarter of a pound of butter a day; his bread should be soaked in it and it should be used as a sauce for green vegetables and fish. Cream may be taken in tea or coffee. If there is difficulty in digesting enough fat—and many diabetics experience such difficulty—the administration of a little alcohol at meals will often improve matters.

*Animal Foods*.—The diabetic has all the products of the animal kingdom to choose from except milk (*see above*). Where a strict diet is being enforced, oysters and liver should also be avoided, as they contain some glycogen; and sausages are never permissible unless one knows exactly how they are made. It will be understood from what has been said above that the richer any animal food is in fat, the better it is for these patients. For this reason cheese is very suitable.



**Milk.**—No absolute rule can be laid down regarding the use of milk by diabetics. To some it is undoubtedly harmful, increasing the glycosuria and thirst; others again can take it without much harm. Experiment alone can decide in any given case. For those who are on a strict diet a sugar-free milk can be obtained,<sup>1</sup> which is a great help to nutrition. It is rich in fat and in all the other constituents of milk except sugar; it is pleasant to take, and lends itself fairly well to the manipulations of the cook, *e.g.*, in the preparation of custards. It will be found of the very greatest service in all severe cases.

**Bread and its Substitutes.**—Perhaps the greatest of all difficulties in the feeding of a diabetic is to find a satisfactory substitute for bread. Thanks to the introduction of the casein preparations, great progress in this direction has been in recent years, and breads can now be obtained which are absolutely free from starch, and which are also of quite a fair degree of palatability.<sup>2</sup> Gluten-bread, on the other hand, once so much used, is not only unpalatable and innutritious, but, in my experience at least, never really free from starch. Besides the casoid breads, the makers of diabetic foods have exhausted their ingenuity in the production of biscuits of various sorts, most of which are quite harmless; and by ringing the changes on these, considerable variety can be introduced into the diet. Whilst on the subject of breads, it may be well to say a word about what I may call the "*Toast Fallacy*." I scarcely ever see a diabetic—especially in private practice—who does not say to me: "Of course I never eat any bread—*only toast*." How the idea ever got started that toast is less harmful to diabetics than ordinary bread, I do not know? but there is no doubt that it is extremely widespread. Yet a moment's reflection will suffice to show how utterly erroneous it is. The only

<sup>1</sup> Supplied by Clay, Paget and Co., 73, Ebury Street, W.

important change which bread undergoes when toasted is that it loses water, whilst some of its starch-granules are ruptured and others converted into dextrin. Weight for weight, therefore, toast is richer in carbohydrates than bread, and consequently more, instead of less, harmful to diabetics.

**Potatoes.**—There is probably too great a tendency to banish potatoes forthwith from the diet of anyone who has sugar in the urine. Now, potatoes, after all, are not a *very* starchy food. They are much less so, for instance, than bread. The average amount of starch in the potato is about 20 per cent.; that in bread is nearly 50 per cent. Weight for weight, then, the potato is much the less harmful of the two. It should be said, too, in its favour that it is an unrivalled carrier of fat, for it will sop up a large quantity of melted butter; and for that reason it is often advisable to allow a diabetic who is not on a rigid diet a certain quantity of potato in lieu of some bread.

**Vegetables and Fruits.**—Roughly speaking, one may say that all green vegetables—that is, the parts which grow above ground—are harmless to diabetics, whilst the root and tubers should be avoided. It is true that even green vegetables contain a little starch, but the total quantity is negligible; whilst, on the other hand, they are, like potatoes, admirable vehicles for fat.

Fresh fruits must be used with caution; dried fruits never at all. I have known even the bottled fruits sold by the makers of diabetic food, and specially prepared so as to get rid of as much of their sugar as possible, raise the excretion in the urine quite appreciably. Nuts, on the other hand, are a valuable food for diabetics, chiefly because of their richness in fat.

**Lævulose**, the sugar found largely in some fruits, is sometimes an aid in the diabetic

<sup>2</sup> That which I always use myself is the casoid-meal bread of Messrs. Ballard and Co., Regent Street.

dietary, for some patients seem to be able to assimilate it even although they dare not touch any other form of sugar. It is always an experiment in any given case, however, and its price makes its free use impossible.

**Beverages.**—The diabetic is a thirsty man, and beverages must always play a large part in his menu. There is no need to restrict his intake of fluids, but some attention must be paid to their quality. All those which contain sugar must, of course, be eliminated. These include the sweetened aerated beverages (*e.g.*, lemonade *et hoc genus omne*), the sweeter wines, and all malt-liquors and liqueurs. On the other hand, spirits are harmless, for they contain mere traces of sugar. Alcohol is undoubtedly a food for diabetics, and has the additional advantage of making it easier for them to digest fat. Some form of alcoholic beverage should, therefore, be taken daily. Tea and coffee are both admissible, and form admirable vehicles for cream; and even cocoa may be allowed, provided the pure powder be used and not one diluted with starch.

#### DIET IN DIABETIC COMA.

If coma sets in or appears imminent, all attempts at a strict, and especially a highly nitrogenous diet, should be abandoned, for there seems to be little doubt that the production of the acid products which are the cause of the coma is facilitated by the ingestion of much proteid food. The best article of diet in such circumstances is skimmed milk, which may be given freely, either plain or mixed with Vichy water. It may also with advantage be made a vehicle for the administration of bicarbonate of soda. At the same time alcoholic stimulants should be freely used, for the combustion of alcohol in the tissues appears to lessen the destruction of proteids which are the source of the acid poisons that produce the coma.

<sup>1</sup> The sale of "diabetic whisky," for instance, is absurd; any whisky is suitable for a diabetic.

#### DIET IN THE DIABETES OF ELDERLY PERSONS.

It has already been stated that no clear distinction can be drawn between the diabetes of young subjects and that of older persons. None the less is it true that, whereas in a typical case of the former the glycosuria is usually not only permanent, but *progressive*, in the latter it has not the same tendency continuously to increase. It is for this reason that absolute strictness of diet is less necessary when one is dealing with an elderly patient. In many such cases the glycosuria will be found to have lasted for several years with apparent impunity as far as the general health is concerned. If no complications are present, it is usually sufficient to stop the consumption of sugar altogether, and to restrict that of starchy foods. Many such patients, moreover, especially if there is a tendency to obesity, are greatly improved by an all-round reduction in the quantity of food consumed. Alcohol, too, must be ordered with much more caution in this form of the disease, for in some cases at least it would seem that the glycosuria has actually been caused by an excessive consumption of alcohol, especially in the form of beer. By attention to these rules the output of sugar can usually be stopped altogether or restrained within moderate bounds. Should complications develop, however, it is easy by more rigid dieting to suppress the excretion of sugar completely. (*The Practitioner*.)

## Pancreas Muscle Blood Extract in Diabetes.

BY

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CROFTAN has shown that, while the simple extract of pancreas has no power of destroying sugar, a mixed extract of pancreas, muscle, and blood possesses a very marked effect on saccharine solutions. The tissues are fixed while still warm by immersion in alcohol. Five grms. of the extract, incubated for seventeen hours with saccharine solutions containing 0.2 to 1 per cent. of sugar, destroyed from 20 to 34 per cent. of the sugar. Similarly, when administered to diabetic patients, the extract seems to have an action. This has been tested in such cases, and in each case a sugar-destroying effect was noted—as shown by diminution in the output of sugar in the urine. To produce this action, large doses of the extract, over half an ounce, are necessary; since the preparation necessarily varies somewhat in its composition, and large quantities are required to ensure the presence of sufficient of the active bodies.

In the first case, on a strictly carbohydrate-free diet, the patient excreted 246 grs. of sugar in the day. Two oz. of the extract were then given for three days, and the sugar varied from 138 to 186 grs. On stopping the extract, the sugar rose again to 236 grs., but on taking 3 oz. extract it fell to 143 grs.

Case 2, on a rigid diet, passed 36 grs. daily; + 2 oz. extract this amount fell to 4.1, 3.7, 1.3; but next day, without extract, it was 27.4.

Case 3 was very instructive. This was a mild case, in which the withdrawal of carbohydrates caused the entire disappearance of sugar from the urine. The power of assimila-

ating carbohydrates was 50.75 grms. of white bread, while 100 grms. produced 7.2 grs. of sugar. One hundred and fifty grms. produced next day 19.2 grs. of sugar, and on the following two days 10.4 and 4.1 grs., the urine again becoming free from sugar on the third days. After the urine had remained free for six days, the patient was given 100 grms. of bread and 2 oz. of the extract, but no sugar was passed.

|          |           |                 |                  |
|----------|-----------|-----------------|------------------|
| Next day | 150 grms. | + 2 oz. extract | = no sugar.      |
| " "      | 200 "     | + 2 "           | " "              |
| " "      | 150 "     | without extract | = 12 grs. sugar. |
| " "      | 150 "     | + 2 oz. extract | = no sugar.      |

Evidently, while taking the extract the assimilation power for carbohydrates was increased. During the period that the extract was being administered the patient lost no weight. After the end of a week's treatment with the extract, the patient could take 100 to 125 grms. of bread, while the sugar excreted did not exceed 4 grs.

In the other three cases the action was similar, the boundary of assimilation being raised 50 to 80 per cent.

Croftan thinks that this may prove of value, since a course of the extract raises the assimilating power, and by giving a rest to the glycolytic processes may tend to restore them to the normal power.—*New York Med. Journ.*, 1904, May 7.

## Amyl Nitrite in Hæmoptysis.

FRANCIS HARE finds that inhalations of amyl nitrite instantaneously arrest hæmoptysis. He has tested the action in five cases, one of mitral obstruction and four of phthisis. In every case the inhalation proved successful, and the hæmorrhage stopped at once. He thinks it acts as follows. Normally, effusion of blood irritates the lung tissue, causing coughing. The strain of coughing raises the blood pressure, inducing fresh bleeding. In this way a vicious circle is maintained, till eventually the loss of blood becomes so great that the exertion of coughing no longer cause

marked rise of pressure. Then the bleeding ceases. Amyl nitrite, by dilating the vessels, accomplishes the same effect without the further loss of blood. It is similar in its action to the old plan of treating bleeding by venesection.—*Austral. Medical Gazette*, Melbourne, 1904, Feb. 20.

## SURGERY.

### \*Common Ailments and their Treatment.

#### HÆMORRHOIDS.

It is, and always has been, customary to divide hæmorrhoids into two varieties—*internal* and *external*. It is important for the practitioner to recognise this classification before commencing the treatment. The external variety are either hypertrophies of the skin surrounding the anus, or venous tumours situated at the anal margin and covered by skin. Inflammation occurring in an external hæmorrhoid is popularly called "an attack of the piles," and this is the earliest symptom pointing to the presence of the condition. It is possible, by recognising the causes of this, to give advice which will often avert attacks. Persons suffering from external hæmorrhoids should be warned against constipation, over-eating, and over-drinking, all of which indirectly tend to produce inflammation. Too much and too little exercise should be equally guarded against. The anus should be carefully cleansed: neglect of this precaution often leads to attacks of inflammation.

When inflammation occurs, it is most important to recognise the condition as one of external hæmorrhoids and not to regard it as a prolapse of internal piles. Active exercise should be forbidden, and the diet must be restricted, very little meat being allowed, while alcohol should be entirely abstained from. The bowels should be caused to act by some simple aperient. Probably the best is sulphate of magnesia taken in the morning,

fasting; some aperient water may be substituted for this, and another very useful aperient is a mixture of equal parts of the confectations of senna and sulphur taken in teaspoonful doses.

The local treatment consists in applying some soothing, and at the same time astringent, lotion or ointment. As a rule, ointments give more lasting relief than lotions and they are more easy of application. As an ointment we may order the following:—R Bismuth. subnitrat., 3j; cocain. hydrochlor., gr. iv; vaselin. ad 3j, which will often be found very useful: or we may substitute Extract. Hamamelidis, 3j; Adip. Benzoat. ad 3j.

If a lotion be preferred, liq. Plumbi subacetates, with or without Tr. opii, may be prescribed.

Under this simple treatment the attack will often very shortly subside. Sometimes, however, the symptoms increase in severity, the hypertrophied tags of skin around the anus become very oedematous, and the venous tumours undergo thrombosis. Pain is severe, especially on sitting, exercise, and defecation. Some constitutional disturbance is also present. Such patients should be confined to bed, and either of the above-mentioned ointments or Ung. Gallæ c. opio, or equal parts of the extracts of opium and belladonna should be applied. Hot fomentations often relieve the pain. Some patients, however, prefer cold applications. The acuteness of the pain will often subside under this treatment. Should it not do so, it is sound practice to incise the oedematous tissue or to excise V-shaped portions of it. Should suppuration occur, early incision is imperative. In the event of the occurrence of thrombosis, the tumour should be incised, the clot turned out, and the cavity packed and allowed to granulate from the bottom.

Internal hæmorrhoids are of three varieties, according to the classification adopted

by most authors—*Capillary, arterial, and venous*. The capillary variety resemble arterial nævi. Hæmorrhage is their one sign. The hæmorrhage is arterial, frequently repeated, and very exhausting. A digital examination of the rectum will probably reveal nothing. The diagnosis is based on the one sign—hæmorrhage—and on ocular inspection. The hæmorrhage can often be controlled by astringent injections into the bowel. Useful injections are sulphate of iron (gr. ii to i) or liq. hamamelidis (3 j) night and morning. If this fails to check the hæmorrhage, operation should be undertaken.

Arterial piles cause arterial bleeding, which is only rarely relieved by palliative measures, e.g., the above-mentioned injections. Prolapse is infrequent, but a tumour or tumours may be felt on digital examination. For the relief of this condition, operation has generally to be undertaken.

Venous hæmorrhoids cause symptoms owing to the hæmorrhage and discharge which they occasion, but more frequently by becoming prolapsed. Prolapse takes place at stool only at first; later on, at other times; and finally prolapse may be continuous, and the sphincter so stretched that the patients are unable to retain flatus and fæces. Venous tumours may often be relieved by attention to general principles, such as regular exercise, avoidance of excesses at table, and maintenance of regular action of the bowels. Aperients which are found to suit individual patients best should be given. One or other of the following may be selected;—Sulphate of magnesia, confection of senna and sulphur, rhubarb pill, mercury pill, colocynth and hyoscyamus pill. Should palliative measures fail relieve; should the tumours be very large; should hæmorrhage or discharge be profuse; and should a marked tendency to prolapse be present, operation must be undertaken.

It not infrequently happens that internal piles prolapse and become grasped by the

sphincter ani and occasion severe pain. Should the practitioner be called to such a case he should apply a 10- or 20-per-cent. solution of cocaine to the prolapsed portion, waiting a few minutes for the cocaine to act; and should then by gentle compression and upward pressure endeavour to return the mass. If this manoeuvre prove unsuccessful, the application of cold may reduce the size of the tumour and then reduction may be successful. If this be unsuccessful, suppuration and the separation of sloughs should be encouraged by warm applications, some soothing ointment being at the same time applied. (*The Practitioner*.)

#### Iodoform Injections in Septic Cystitis.

PREUDENBERG advocates the use of iodoform as an intravesical injection in cases of septic cystitis with foetid and ammoniacal urine. The iodoform, he says, acts on the urine in contra-distinction to such drugs as silver nitrate, which acts on the vesical mucous membrane. After two or three injections the urine is free of the glairy masses, the ammoniacal odour disappears, the pain is less severe, and the frequency of micturition diminishes. After this improvement has taken place, and the urine has become acid, silver nitrate injections may be employed. The action is less certain in the presence of calculus in the bladder, a diverticulum of the bladder in which septic urine stagnates or pyonephrosis. The presence of an enlarged prostate with retention does not contra-indicate the use of iodoform; on the contrary, it is in such cases that the best results are obtained by its use. The possibility of iodoform poisoning has to be borne in mind. About 3 c.c. of a 10 per cent. emulsion of iodoform in glycerin, diluted with 30 to 40 c.c. of boracic solution, are injected.—*Comm. made to the French Assoc. of Urology, Paris 1903.*

#### The Cancer Problem.

The increased attention to the cancer problem now being given by research workers in this and other countries, has stimulated both lay and professional hope that some effectual means of combating this dread disease will ere long be discovered. This country has taken a lead, under the stimulating influence of the king, in encouraging this research, and it is naturally gratifying to us that the new facts which have been its first-fruits are largely due to British workers, namely, Farmer and his collaborators (Moore, Digby, and Walker), Bashford and Murray.

The heterotype character of the mitosis of some of the cells in malignant growths, both of man and animals, is the leading feature of those new facts. In giving to the British workers the credit for this discovery, the extensive researches of von Hansemann on the phenomena of cell division in cancer in man must not be forgotten. They are most valuable; and though he did not arrive at the full truth, he showed that the mitoses in cancer cells differed in certain respects from those of normal tissues. Also in one other aspect of the problem, namely, the transmissibility of cancer from one animal to another, important advances have been lately made by two continental workers,—Borrel of Paris and Jensen of Copenhagen. Their results have been fully corroborated in this country by Bashford and Murray, who have also shown, what has hitherto been imperfectly understood, that cancer occurs widely among the lower animals. The facts at present before us, valuable as they undoubtedly are, are still too bald to allow us to see clearly their full significance, and to entitle us to draw from them more than very tentative deductions. Any attempt in this direction is bound to be very imperfect, but it may serve to help those who have not time to study the problem for themselves to obtain a clearer view of the possibilities suggested,

and also prevent them from building their hopes too high, a common tendency when, as in the present case, the general interest and aspirations are so great. A study of the results of Borrel and of Jensen, the latter particularly, prepares the way, in part at any rate, for a better appreciation of the work of the British workers. They both succeeded in transmitting a cancerous tumour, found naturally in a mouse, to other mice of the same species, in no fewer than nineteen generations of white mice in Jensen's experiments. He kindly supplied a piece of one of his experimental tumours to Bashford and Murray, who were equally successful in transmitting the disease to other white and grey mice, so that over 1800 such transmissions have been accomplished in Copenhagen and London together by the end of March of the present year. Transplantation to other animals of a different kind was not successful. The tumour shows microscopically the structure of an epithelioma, and causes ultimately the death of the mouse, following either upon cachexia or ulceration of the skin. Certain characters of the tumour seem worthy of special mention. These are its vigour of growth, its resistance to destruction, and its failure to produce metastases. Its power of growth is great, as it usually increases steadily from its first appearance at the seat of implantation until it may equal in size the mouse itself. Jensen tested the powers of resistance possessed by its cells, under varying conditions, when isolated from the body but kept moist in a sterile fluid. They remained alive for about eighteen days at a temperature of about 1° to 3° C., for about twelve days at room temperatures, but only for twenty-four hours or less at the body temperature. Normal physiological cells do not possess resisting powers so high as these. Experimental transplantation of such tissues particularly of testis and ovary, has been frequently made, always with a negative result. Transplantation of chorion at different periods of its development has similarly fail-

ed. But it is to be noted that, notwithstanding the possession by the cancer cells of powers of such high vitality, the inoculation of white mice did not succeed in more than 30 to 60 per cent. of Jensen's cases. The tissues of the ordinary healthy animal overcame and destroyed the implanted cancer cells in about half of the *a priori* equally susceptible cases experimented upon. Certain other malignant new growths, occurring naturally in mice and other animals, when transplanted to healthy animals of the same species, failed to grow (Borrel, Jensen, The Cancer Research Committee). Moreover, in successful cases, only a very few of the cancer cells implanted survived, and the tumour was wholly the result of their multiplication, the tissues of the mouse taking no part in the process. This repeats what occurs in metastases in the human subject, the new growths being always the products exclusively of the invading cancer cells. It is even probable that here also many of the invading cells perish, but of that we have no certain knowledge. The successful cells must possess powers both of offence and defence which normal physiological cells do not possess, and which apparently many of the cells of a cancer itself do not possess.

These powers, or some of them, are lost when tumour tissue is broken down into an emulsion containing no intact cancer cells. Inoculation with such an emulsion failed. The nature of these powers is at present unknown to us, and the discovery of Farmer and his collaborators of the existence of heterotype mitosis in cancer cells, is an important addition to our knowledge, and may have a valuable bearing upon the solution of this question. We are not yet in a position to gauge this in its entirety, but the interpretation suggested by Farmer is as scientific as it is fascinating. So many observers have corroborated Van Beneden's epoch-making discovery, that the nuclei of the conjugating germ cells contain each one half the number of chromosomes possessed by

the body cells, that it may probably be regarded as a universal law of development. It had not been observed in other cells until Farmer's discovery of it in cancer cells. Moreover, the other differences in the behaviour of the chromosomes of cancer cells, besides this reduction in number, are similar to those which occur in conjugating germ cells. Hence the deduction, that some of the cells of a cancer are, if not actually germ cells, homologous thereto, is a natural one, though it does not necessarily follow. The essential fact of fertilisation and sexual reproduction is a union of equivalent nuclei, and though in the higher plants and animals the conjugating cells differ widely morphologically and physiologically from one another, yet in the lowest forms they cannot be distinguished morphologically from one another. Further, in the maturation of the ovum, three small cells (polar bodies) are produced and extruded before its nucleus is ready for union with the sperm nucleus, but in the maturation of the parthenogenetic egg, the role of the spermatozoon appears to be played by the second polar body. Now, actual conjugation of resting nuclei in an epithelioma has been observed by Bashford and Murray. The tumour showing it was preserved eight days after transplantation. Out of a large number of tumours of the same series, another was obtained seven weeks thereafter, which showed identical conjugation figures. It is too early yet to say what this means. It may point to actual conjugation at rare intervals, with parthenogenetic fertilisation between, or to other possibilities but enough has been said to show that fertilisation may possibly occur in the cells of a cancer, and this theory is further supported by many of the cells exhibiting not the heterotype mitosis characteristic of germ cells, but the ordinary form characteristic of their descendants, the ordinary body cells. Bashford and Murray's results still further suggest that fertilisation may be the explanation of the remarkable proliferative powers of

cancer cells, for they found that "among the sixty-nine mice which had received portions of the tumour showing conjugation and rapid growth, there were thirty-four rapidly growing tumours; in the other series, which had received portions of the slow growing tumour in which conjugation was not observed, only three minute tumours were detected in the forty-seven mice."

Notwithstanding all this support, however, it would be rash to accept this theory as anything more than a very tentative one. We do not yet know the precise part played by the chromosomes of the nucleus in the action of fertilisation. Further, if fertilisation is the explanation of the excessive vigour possessed by cancer cells, should we not expect to find heterotype mitosis in the early cells of a cancer? But Bashford and Murray, who have had exceptionally favourable opportunities of testing this very point, having examined over 1,800 transplanted tumours at all stages, did not find them.

It will be remembered that every new tumour which developed arose entirely from the actual cells introduced. Only a few of these cells survived, and the tumour was the result of their multiplication, but in the earliest stages of these multiplications Bashford and Murray found no mitosis whatever. They did not appear until later, and they showed not the heterotype, but the ordinary form characteristic of the body cells. Further in all cancers sarcomas from every source, whether primary or secondary, examined by them, the cells at the growing margins showed the same somatic form of mitosis. The number of heterotype mitoses, moreover, varies greatly in different tumours and in the descendants of one and the same tumour at different ages. It is often small where rapid cell division is taking place; in short, the number of heterotype mitoses bears no relation to the degree of malignancy. It is thus obvious that we must wait for further light before we can come to

any stable conclusions. The discoveries are none the less striking, and will stimulate fresh research in many quarters. Whatever may prove to be the true significance of heterotype mitosis, if it be always present, but it ought to be of assistance in competent hands. Solid and papillomatous cystic tumours of the ovary may be cited as an illustration. All the evidence, clinical as well as histological, hitherto available is often insufficient to enable a diagnosis between benignancy and malignancy to be made. Perhaps the character of the mitosis may now enable us to do this.

As appears to be the case, in malignant but never in simple tumours, one immediately useful result may be found, in the direction of the differentiation of simple from malignant growths, by the determination of the type of mitosis present in their cells. That it will be generally useful is hardly to be hoped, as it necessitates more careful fixation of specimens than is always given to tumours sent to laboratories for diagnosis.

## OPHTHALMOLOGY.

### Astigmatic Accommodation.

Kosrer (Gzn.) watched the effect of eserine at various periods after its instillation in the eye of a young man who had less than the normal amount of accommodation. After 50 minutes he found that astigmatism to the extent of 2.5 D had been produced, which at a later period disappeared. This astigmatism must have been lenticular and must have been produced by an irregular contraction of the ciliary muscle, and from this he argues that in cases of ordinary corneal astigmatism there is nothing in the structure either of the ciliary muscle or of the lens to prevent compensatory astigmatic accommodation from taking place.—*Archiv für Augenheilkunde*, March, 1904.

### Mirmol in Cancer.

Mirmol is a fluid whose principal constituent is formaldehyde. It was brought out in 1899 by Ranelletti, and has been employed chiefly by Italian surgeons in cases of inoperable cancer. Maurizi (Rome) speaks highly of its value. He has recently employed it in a case which, according to the clinical history, presented every feature of recurring epithelioma, and he has by its means obtained a cure. The actual part affected in this case was at the inner canthus, and the substance was employed two or three times a day diluted at first 1 in 9, but later in greater concentration, by means of gauze wetted in it, after a few drops of cocain had been applied. There was little or no pain, and almost immediately the ulcer began to "clean," and in a few weeks the patient was discharged without a trace of his malady, and with only a very slight dimpling to mark the spot.—*Bollettino dell' Ospedale Oftalmico*, Rome, March 3, 1904.

### Iritis following Bee-sting.

That general symptoms may follow upon the receipt of a bee-sting is well known, but iritis is a very unusual symptom. Hilbert (Sensburg) relates the case of a woman of 63, who on the day following receipt of a bee-sting consulted him. She had been stung on the left upper lid, and during the night had applied wet clay with but little relief to the pain, while the swelling had greatly increased. Both lids of the left eye, and the cheek, were greatly swollen and of a bluish red colour. The actual point at which the sting had entered was close to the inner canthus, and thence Hilbert removed it, for it was still *in situ*. On separating the lids—a very painful and difficult process—conjunctivitis and marked ciliary injection were found to be present, and there was even a little hypopyon. The patient complained of considerable

weakness, her skin was cool and moist, the pulse was slow (52) and thready, the breathing also slow and shallow. Under treatment by atropin the condition improved at once, but it was at least four weeks before the eye could be pronounced free of trouble.—*Wochenschr. für Therapie und Hygiene des Auges*, March 26, 1904.

### Subconjunctival Injections.

Hosch speaks in favour of injecting cyanide of mercury solution in cases of post-operative irido-cyclitis, and to those who employ copious injections of salt solution utters a warning that this procedure may have some effect in promoting the formation of cortical cataract. In a note on *Metallic Foreign Bodies in the Retina*, the same author throws doubt on the idea that they can ever remain permanently harmless. In one case an eye became inflamed after five months of apparent immunity, and in another after more than a year.—*Archiv für Augenheilkunde*, March, 1904.

### Optic Neuritis following Small-pox.

[By A. FREELAND FERGUS, M.D., Glasgow.]

JOHN CONLAN, seen 8th January, 1904, a middle-aged man, who was employed as a foreman dock labourer, was recently attacked by small-pox, and was admitted to Belvidere Fever Hospital. He says that the dimness of which he complains was first observed by him on dismissal from the "red room;" he found that it affected his right eye but not his left.

On examination it is ascertained that the visual acuteness of the right eye measured by Snellen's scale is 6/12 of the standard, a condition of matters which is not improved

by glasses; in the left it is 6/6. Both pupils react well to light and to convergence.

Ophthalmoscopic examination shows the media of the right eye to be perfectly transparent and healthy. The optic disc, however, is distinctly blurred, especially to its outer side. There is a distinct hyperæmia and loss of transparency in the optic papilla, but there is no swelling of the disc; hæmorrhages are not present, and there is little tortuosity of the vessels. The blurring, however, is quite distinct all over the disc, but chiefly at its outer aspect. The fundus of the left eye is, on the contrary, quite normal; the margins of the disc are distinctly differentiated all round; there is no haziness, and in all respects it is normal.

On testing with Bjerrum's light sense types, it was found that when No. III. (the faintest) was used he could see with the left the fourth row of the letters, but with the right only the first row. As the result obtained with the left eye was equivalent to that obtained either for myself or for my assistants at the same time and under the same illumination, it may be taken as up to the standard. There was thus a marked difference in the two eyes. The fields of vision when tested for white light were both found to be much contracted. At no point did either field extend to a greater angular distance than 30. from the point of fixation. The right was slightly more contracted than the left.

In view of Autonelli's interesting report on optic neuritis following acute infections, the question occurs, Is the optic neuritis in this case due to the attack of small-pox, or must it be attributed to other causes? Strict inquiry was made as to his having been at any time the subject of syphilitic infection, with entirely negative results, nor was there any evidence of his being the subject of any other form of peripheral neuritis.

Knies (English edition) says that in hæmorrhagic small-pox, of which this was not a

case, hæmorrhages sometimes occur into the optic nerves, and that to them must be attributed some optic nerve affections with or without stasis and with or without secondary atrophy. Ahyer described two cases of diffuse neuro-retinitis as the pustules passed off. His cases are quoted by Knies, but unfortunately we have not been able to peruse a copy of his original communication.—*Ophthalmic Review*.

### Decapsulation of the Kidney with reference to Ocular Complications of Chronic Nephritis.

The operation for decapsulation of the kidney has of late been quite widely done, in the hope of influencing favourably the course of chronic interstitial nephritis. The usual prognosis of Bright's disease after the appearance of albuminuric retinitis is well known. Suker has tried to collect all cases in which albuminuric retinitis was present when the operation of decapsulation was resorted to. He believed that from them some deductions might be made as to the influence of the operation in prolonging life. He was able to bring together 15 cases, which he presents in tabular form. Of these patients all but two were dead at the time his paper was prepared. One of these has died since, and the other gives a very questionable history. Four other cases, heard of since the reading of his paper, have all terminated in death. He concludes:—

The operation of decapsulation does not offer any hope in cases of bilateral chronic nephritis with retinal complications. Though there is an improvement in the fundus directly after the operation, it is decidedly temporary, to judge from the present statistics.

The operation may be of service in unilateral nephritis with fundus lesions in the



initial stages. These cases, however, are rare, and soon become bilateral.

The mortality rate for albuminuric retinitis in chronic nephritis has not been lessened by the operation. Statistics show that retinal complications are a decided index as to the severity of the kidney involvement. In nearly all the cases of chronic nephritis cardiac involvement is present and is an important factor in prognosis. With retinal lesions it is usually present.

As yet the medical treatment yields as good results as decapsulation, if not even a trifle better. Statistics of the mortality rate of albuminuric retinitis based on urethral catheterization are needed to determine whether those who outlive the two years' period might be cases of unilateral nephritis or cases which are late in becoming bilateral. *G. F. Suker (Chicago) Trans. Section on Ophthalmology, American Medical Association, 1903.*

### Electro-Cautery Treatment of Corneal Wounds and Ulcers.

Living in a city where mining and treating ores is the principal industry, Donovan has to deal with a large number of corneal injuries. In former years he has employed all the usual methods for the treatment of such wounds and the ulcers that result from them. He followed the common practice of using the cautery as a last resort, and finding the more obstinate ulcers healed so nicely with it, he was led to employ it first. He believes the average simple, non-infected, corneal ulcer or wound will heal just as rapidly if it is simply protected, kept clean and left entirely alone, as it would with the most energetic treatment. If the wound is slight he gives nothing but boric acid and zinc wash, and instructs the patient to return in 24 hours. If there then be any irritation the

spot is lightly touched with the cautery at a dull red heat.

For more serious ulcers he uses holocaine, cleans out necrotic tissue with a curette, and employs the electro-cautery in the following manner:—The point is heated to a dull red in most cases, though in some it does not reach even the degree of red heat. In the ordinary cases, the lightest possible punctures are made all around the edge of the ulcer just in the edge of the healthy cornea, the punctures being about  $1\frac{1}{2}$  mm. to 3 mm. apart, and when necessary any part in its floor that appears unhealthy is touched. With few exceptions this is all the treatment necessary. If after a few days (say two to four) some places appear to have made no progress, these spots should be retouched. In the rare cases in which the ulcer does progress in some direction, the advancing portion should again be touched by puncturing just in the edge of the normal tissue.

This method of using the cautery he ascribes to Dr. Herman Knapp. Donovan believes that whenever a corneal wound or ulcer is severe enough to require treatment the electro-cautery is indicated. With proper appliances, in careful, competent hands its effects are absolutely controlled; and it is perfectly safe for persons of any age. Even for children he no longer uses chloroform.

*J. A. Donovan (Butte, U. S. E.).*

### Ocular Lesions caused by Lightning.

In this paper Gonin records a case of lightning injury which is interesting because the accident occurred under circumstances which seem to exclude the indirect action (light and ultra-violet rays), and to limit the effects observed to the direct action of the electric current. It occurred at a rifle shooting competition in a stand which was connected

to the targets by electric bell wires. Twenty-six persons on the stand received more or less of a shock, although none of them saw any flash. The wires along which the lightning passed ran immediately above the patient's head. He was unconscious for a quarter of an hour, and on recovering found his left eye blind, while the right eye retained perception of light. Four days later Gonin found R. V. = 1/10, L. V. = 1/20, ciliary congestion, small pupils, and diffuse haze of both cornea closely resembling the appearance usual in acute glaucoma, although tension was normal. The cornea cleared in a few days and the right disc could be seen to be pale with markedly narrowed arteries, while in the left eye there was a radiating opacity of the posterior cortex of the lens. Injections of strychnine were ordered, and during the following weeks the sight of the right eye improved to  $\frac{1}{2}$ , that of the left to  $\frac{1}{2}$ . The opacity in the left lens became considerably less marked. Twelve weeks after the accident punctate opacity was observed in the right lens, situated immediately beneath the anterior capsule. When last seen, five months after the mishap, although the appearance of the lenses had not changed, the sight of the left eye had fallen to one-tenth, with some contraction of the field. The discs remained pale with contracted arteries, and Gonin attributed the defect of sight to a slowly progressive optic atrophy.

The paper includes a resume of the recorded cases of lightning injury, some thirty in number. In 22 of these opacities in the lens were found. In this connection the points of practical importance shown by examination of the published cases are:—

1. That lens opacities following on a lightning stroke may long remain stationary, and may even spontaneously disappear (Silfvast and Knies).

2. That fundus changes may interfere with the visual result of operation.

3. That operation may be made difficult owing to the marked relaxation of the suspensory ligament. This condition has been observed clinically, and was noted in the experimental work of Hess and Kiribuchi.

Optic atrophy appears to occur less often than cataract. In nine cases, including Gonin's, it was noted. In only two cases was the nerve affected without changes in the lens. (To these may be added Teacher Collins' case.)

It is of practical importance to remember that optic atrophy may be a late complication, and that therefore prognosis should be guarded.

Conjunctival hyperæmia, photophobia, and temporary haze of the cornea are commonly met with in cases of lightning stroke. Motor paralysis affecting the 3rd, 4th, 5th and 6th pairs, and usually of short duration, have been met with a good many times. Retinal hæmorrhages, rupture of the choroid, and detachment of the retina have been observed in a few instances.

Gonin emphasises the distinction to be drawn between this group and those cases in which eye symptoms follow dazzling by short-circuit flashes, etc. ("electric ophthalmia," so-called). In these only superficial changes are found, and the visual troubles are mainly functional. (See *Ophthalmic Review*, xxii.)

Reviewing the various possible modes of action of the electric force, Gonin concludes that the grave pathological changes observed are due to the direct passage of the current through the tissues of the eye, and thinks that, although electrolytic action may play a subordinate part, the main effects are the result of mechanical concussion. For the arguments in favour of this view, as against the "ultra-violet rays" theory of Widmark and Silfvast, and the suggestion of Leber and Silex that the lens changes are due to coagulation of the albumen in the lens and for a

resume of the experimental results obtained by Hess, Kiribuchi and others, Gonin's paper may be consulted.

As the number of published cases of lightning injury is small, I append the references given.

W. W. SINCLAIR.

### MEDICAL JURISPRUDENCE.

#### A Simple Method of distinguishing Human Blood from that of other Mammals.

Marx and Ehrenrooth call attention to a simple and easy method of distinguishing human blood from that of other mammals which may be of use in medico-legal cases. The principle of the method depends upon the recognition, by means of the microscope, of the action of homologous and heterologous sera upon fresh human blood. The red corpuscles of human blood become quickly agglutinated on the addition of an heterologous serum, whereas the addition of homologous serum scarcely produces any change or only very slight agglutination. This difference is at once recognised under the microscope.

For example, human blood plus human blood serum produces merely a gradual approximation of the corpuscles to each other, which, however, remain distinct and recognisable; whereas human blood plus pig serum leads at once to a marked agglutination, in which the individual cells are not distinguishable. The action produced by heterologous serum is always accompanied by hæmolytic. The authors have tested their method on fluid (fresh and decomposed) blood as well as blood derived from stains of various ages and from different animals. The procedure in practice is as follows:—The blood, if dry, is dissolved in one or two drops of 0.6 per cent. salt solution, so as to obtain as concentrated a solution of blood as possible. A drop of this solution is placed upon a glass slide. By means of a sterile needle a drop of blood is then taken from the operator's own finger and mixed with the blood solution on the slide. Apply a cover-glass and examine under the microscope during the following quarter of an hour. The fresher the heterologous blood and the more concentrated the solution, the quicker will the reaction take place.—*Munchen. med. Wchnschr.*, No. 7, 1904.



# The Antiseptic.

Vol. I.]

OCTOBER, 1904.

No. 6.  
Annual Subscription Rs. 5.

## Original Article.

### II. FEVERS\*

BY

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#### Pathology.

Pathology also teaches us to protest against the limiting of the term fevers to the diseases now grouped under that heading. Fever—as usually understood in a warm-blooded animal—is due to a fever-producing cause which upsets the thermic centres, and it has been experimentally proved that this process usually increases tissue-waste, increasing both the intake of *O* and the output of *CO*<sub>2</sub> by the lungs and *N* by the kidneys. But experimentally also it has been proved that pyrexia may exist without increased metabolism of nitrogenous tissue, while the latter has been shown to sometimes precede the high temperature, so that it is

yet a moot point in pathology, as to whether these two are connected as cause and effect, and, if so, which is the cause and which the effect.

I will not take up any more of your time by going into the abstruse problems connected with the pathology of fevers, but, before I leave this subject, I wish to bring forward, for your consideration, a point not hitherto noticed (I speak under correction, for, as already mentioned, I have not had access to any extensive literature on the subject), and, if noticed, not impressed on the professional mind. It is what I would venture to introduce to you as “Conservation of energy in disease,” and this applies to fevers more than to any other known form of disease.

When a poison acts on the system, the character and prominence of the symptoms depend on three factors: (1st) the seat of action, *i.e.*, the organ or organs affected; (2ndly) the amount and virulence of the poison; and lastly (3) on the reaction of the system to the poison.

We shall deal only with the first of these, for the moment, supposing that the other two are constant. It is well known that certain organisms and poisons have a fancy for certain parts of the body; some, however, have a larger choice,

\*A paper read before the Hyderabad Medical Association.

sometimes selecting one organ and sometimes another; and some organisms again are capable of attacking all the organs and tissues with which they come in contact.

When more than one organ is liable to the invasion of a poison and the poison itself is not of a nature or quantity to spread all over the body, the extent of damage done to one organ seems to be in inverse ratio to the implication of another. The old adage holds true for fevers or the poisons thereof as well as for children, that you cannot eat your pudding and keep it also. These clever things do not burn their candles at both ends unless they get riotously mad over their enormous quantity or conceited over their superior strength. A few illustrations will make my meaning clear. Tubercle attacks the child in the cerebral meninges, the early youth in the intestines and peritoneum, and the young adult in the lungs, and, except under favourable conditions, it does not run about from organ to organ. From the lungs it often migrates to the intestines, but in these cases a careful examination of the lung-condition shows a latency in proportion to the activity of the bowel-trouble. Of course, tubercle may run amok and indiscriminately attack the body in all its parts. That is not a staid and steady disease, but a galloping consumption. The minor ailments in this respect behave with more sense. The Gonococcus, for instance, when it sets up orchitis, often shows marked diminution in the urethral discharge, and with the amelioration in the metastatic condition, the activity of the organism in the urethra is resumed. When the poison of mumps crosses over to the generative organs the parotid inflammation subsides. Even scarletina

usually leaves the throat before it begins its mischief in the kidneys and its friend diphtheria does not send its toxin into the nervous system for long after the organism has ceased to molest the throat. Our more formidable foes have some rule of that sort. Malaria can produce enlargement of the spleen with hardly any fever, and in some cases of severe coma that came under my observation in the Afzulganj Hospital due to malarial poisoning, there was no enlargement of the spleen, and hardly any fever worth the name. It is so well known that, when the bacillus pestis produces enlargement of the glands, the internal organs, such as the lungs, escape, that some authorities classify plague into bubonic and septic, the latter embracing the pneumonic and fulminant forms.

In typhoid also it is worthy of notice that when pneumonia sets in as a complication, the enteritis appears mild in proportion, while an early epistaxis often coincides with a non-hæmorrhagic course of the bowel-inflammation. This applies to the slow and chronic poisons as well as to the actinic and quick poisons. How often do we not see alcoholic cirrhosis of the liver without any trace of granular kidney, and often alcoholic dyspepsia saves a drunkard from alcoholic neuritis. Take the two forms of leprosy. In the one the bacillus finds its nidus in the nerves producing sensory symptoms, and in the other there are nodular growths in the skin and other tissues leading to extensive trophic changes. Whatever the explanation may be, the above considerations justify us in concluding it as a general principle that a given poison acting in moderation on more than one organ of election does not do so with equal force. This theory is nearly allied

to a fact that has been long recognized in practice, but which has, to my knowledge (again I speak with diffidence), been discussed academically as a separate subject, and which for present purposes we may call "transmigration of disease." We have it on authority that germs alter not only their form, but also their physiological and pathogenic characters under altered conditions of growth and development. This anticipates the possibility of one germ disease becoming converted into another, with a fresh stock of symptoms and a different diagnosis and prognosis and of course treatment. The chemist is the last man to deny that, given a certain temperature, moisture and other favourable conditions, a toxin or ptomaine may change its character sufficiently to produce a fresh group of symptoms in the individual affected by it. So toxic diseases also may be transferable and some of them we know are transferable. Splenitis and tic-douloureux have at first sight nothing in common. They are two different diseases and far removed from each other. Are they due to exactly the same poison? If so, what is it? Do we not see a fit of neuralgia take the place of a fit of asthma? The tubercle bacillus and leprosy bacillus are very nearly allied in form, staining reactions and pathological effects. But leprosy attacks but rarely the serous membranes and lungs, while the tubercle bacillus does not occur in the skin and nerves. An old Professor of mine was fond of asserting that he was sure that the original tubercle was a close relative, if not a lineal descendant, of syphilis, that two or three generations of persistent heredity would, under favourable circumstances, be sufficient to convert the one into the other. Without going so far, I think we may tentatively presume

that many of the chronic poisons, especially those inducing known and unknown changes in the brain and nervous system, as in disseminated sclerosis, paralysis agitans, epilepsy, insanity, etc., are nearly related to each other, if not members of the same family. A consideration such as this brings us nearer to the realisation or, at least, reconciles us more to the recognition of a transcendental etiological factor such as Owen tried to establish.

### Diagnosis.

I shall now trouble you with a few remarks connected with the diagnosis of fevers, in which Department of Medicine we have made some wonderful progress recently, thanks again to the laboratory man. Where we used to speak vaguely of simple continued fever, low fever, Bombay fever, etc., we have now definite means of differentiating one fever from another. Here, as elsewhere, we meet with two schools of medical men, or, rather, two types of clinicians, often at variance with each other in the choice of methods for the investigation of disease. Some pooh-poo all the new-fangled methods and appliances for the diagnosis of fevers, as being cumbrous and pedantic, while others swear by these methods and instruments as infallible and almost discard the old-established and time-honoured clinical methods, which, though lacking in mechanical precision, have yet the merit of being simple, quick and, in most cases, sufficient. The extremes in either direction appear ridiculous. There is the old-fashioned in-patient physician who finds it sufficient to feel for the spleen and look for ague and intermission to diagnose malarial fever, while there is the modern finicky out-patient doctor who insists on taking a drop (and sometimes

more) of blood from every one of his cases of malarial fever, not alone to look for Laveran's bodies, but also to make a differential account of the various forms of leucocytes. As between most other extremes, our present day knowledge prompts the adoption of a medium course as the best. It is as absurd and mischievous of an out-patient doctor who has probably to deal with from 50 to 60 cases of fever in a day to trot out his microscope and his hæmatometer in each of his cases, as it would be dangerous, if not criminal, for the in-patient doctor who neglects to examine the blood quantitatively and qualitatively of his few fever cases in the wards. The same applies to private practice. The idea that in the ordinary run of cases we cannot come to any definite conclusion without the aid of the highly ingenious and modern scientific methods is as untenable as that, in all cases, the general clinical symptoms and the simpler physical signs elicited by the physician's unaided sense are sufficient to clear up an obscure case of fever, to diagnose, for instance, a case of pernicious malaria from typhoid in its earlier stages. Unfortunately the preliminary and prodromal symptoms are often lost to us in this country. The early rashes of small-pox, the buccal spots of measles, the first symptoms of typhoid are a closed book to us in most cases. Even the primary sores of syphilis are seen by some of us in only 50 p. c. of our cases and we are often put to great straits in diagnosing the exanthemata in the stage of invasion and before the eruption has appeared. No one will deny that it is of the utmost importance to diagnose infectious diseases as early as possible, especially when we are dealing with close communities like a regiment of men or a schoolful of chil-

dren. The older physicians, who some of them were quite as successful as their successors in the treatment of fevers, if not more so, were guided chiefly by the symptoms and signs, without any mechanical gimcracks to help them. They looked at the tongue and drew more correct conclusions with regard to the condition of the stomach than the novice now does with his gyromele and endoscope. The medical man of the apprentice days felt the pulse and got more information about the heart and blood vessels than the University man now does with all his phonendoscopes and sphygmographs to back him. Please do not mistake me—I do not cavil at the introduction or use of mechanical instruments as an aid to diagnosis. In fact, I am second to none in the desire to use them wherever and whenever it may be necessary, and some day soon I hope to collect and place before the Association some of the diagnostic instruments available in this place. I simply wish to protest against the neglect of the older and handier method which is so fashionable in some quarters and which leaves untrained the senses of touch, sight and hearing by their over-dependence on mechanical aids, as also against the tendency of the rising generation who, in their mania for new fads, ignore the common symptoms and give their faith entirely to what we may term the instrumental methods of diagnosis. I wish to protest as emphatically also against the undue suspicion—aye! sometimes the contemptuous dislike—with which some of the older generation look upon any or improved apparatus which is put before the profession for the purpose of eliciting new facts in diagnosis. The attitude of these men reminds one of the historical Edinburgh student, who, asked at the orals

as to how he would treat gonorrhœa, said unblushingly "with sovereign contempt." Where is the clinical instrument or apparatus that did not bring suspicion and ridicule on the inventor at the first introduction and then,—appreciation and honour? Lennec's stethoscope was declared to be a mischievous intervention between the chest of the patient and the ear of the physician. Helmholtz's first ophthalmoscope was exhibited but to be thrown aside, and Arnold's clinical thermometer was treated with open derision at a meeting of the British Medical Association, where its use was first demonstrated by Wilks of Guy's Hospital. It is true that these instruments were crude in their conception and make at first, but the pioneers in scientific clinical medicine persisted and persevered; and a more extended use has not only made these instruments more handy and delicate, but infinitely more useful, I may almost say, indispensable. Familiarity has bred the reverse of contempt, because of the eternal principles which they represent. The first stethoscope was a thick solid piece of wood, but now it is the neat little instrument which no medical man, however old, can afford to go without. We have the amended form of it in the binaural and with the application of the microphone principle we have the latest edition of it in the phonendoscope. The original ophthalmoscope was but a rough piece of glass, and now we have at least ten different kinds with ten different names not only for refraction work, but for general medical work; for medical ophthalmoscopy is invaluable in the diagnosis of many diseases. So, with the first clinical thermometer, which was, I believe, one foot long; but with the compact little instrument now manufactured, which even the 2nd-year student

loves to sport in the wards, a clinical thermometer is common property and the very women in the zenana have one locked up in their pan-dan. Wisdom again lies in the middle course. Without laughing at the old or frowning at the new, let us prove all things and hold fast to that which is true. While holding fast to the fixed principles of the old regime it behoves us to have an open mind and open arms for any new contrivance which can help us to solve the difficult problems of diagnosis. We cannot discard either. Please remember that where older practitioners can, as the result of long experience and intimate acquaintance with the simpler phenomena of disease, diagnose an infectious fever by observing one pathognomonic sign, the fledgling has not that advantage and can only work with the aid of his microscope and test-tube, and those of us who hold an intermediate position may be pardoned if we seek safety and satisfaction in adopting both the methods. It is said of the great Abernethy that he would often go through the wards and without a word to or from a newly-admitted patient prescribe for him. We are not all Abernethys, but with the help of modern science, we may all become quite as efficient and useful. Permit me to mention a few diseases in illustration of what I have said. Diphtheria in its early stages is difficult of diagnosis for a beginner, and microscopic examination of the bacillus, its cultivation in the laboratory, and a study of the effects of injecting the material into animals, is necessary before he can say with certainty that a given case is one of diphtheria and apply to it the antitoxin treatment. Some obscure cases of tuberculosis in the early stages can only be diagnosed by their reaction to tuberculin. Let us take malaria and typhoid, two of the more common diseases

which worry the practitioner in these parts. The old school looked for head symptoms in the first week of typhoid, for the fugitive rash, for a slow pulse and a bad tongue. These signs are either not constant and, when constant, are not pathognomonic. For remittent malaria they had only the temperature chart and the quinine test, neither of which are infallible guides. To this the pathological physician has added Vidal's test and dioszo reaction for typhoid, and the discovery of the parasite in malaria. The first gives results only in the later stages of typhoid; the second is unreliable and Laveran's bodies are not always present even before the administration of quinine and seldom present after it. Leonard Rodgers, of Calcutta, places great faith in the increase of the large mononuclear leucocytes in malaria and of the lymphocytes in typhoid fever, and says that this increase which can be always recognised by suitable staining and a differential count is not affected by the stage of disease on injection of quinine. Some of these things can only be worked out in a properly equipped laboratory and with the aid of an expert bacteriologist. We have not all the requisite training and the time to examine blood and secretions, to count leucocytes differentially, to stain organisms, to cultivate them and experiment on animals. The existence of a State laboratory, therefore, is a great boon to us, and your kindness, Sir, in permitting the members of the Association to use the laboratory is a greater one, for which not only we of the profession but the public who benefit by our studies have reason to be thankful.

#### Treatment.

After all our main purpose in studying disease is to be able to treat it to prevent

its incidence if possible or as far as possible, but if it occurs to so deal with it as to save the patient from danger and suffering, we may examine a patient and explain to him the pathology of his disease, we may test and talk of diagnosis and prognosis, but the patient cares little about all that. It is treatment and cure he wants and that he will have. Our patients here do not pay for our stethoscopes and our microscopes. It is seldom you will find a patient who when told that he is suffering from an obscure, rare, and very interesting disease of the nervous system which, however, is beyond your power to cure, will pay your fee with a good grace or leave your consulting room with a happy face. You may have taken days or weeks, and no end of trouble to arrive at a correct diagnosis of his disease, but you cannot get him to admit that you have done your best for him, unless you can cure him or offer him relief. In this respect, the patient regards us, and I think with reason, as an army well disciplined, but with poor arms and no ammunition, who can do a great deal of reconnoitring and first-class scouting, and having found out all there is to know about the strength and composition of the enemy's force, are powerless to attack him and much less to defeat him. I should like to present to you a few general considerations before passing on to the specific remarks on the subject of treatment. The reprehensible practice of giving routine prescriptions for fevers is, I fear, but too prevalent in this place. Fever? Why—saline mixture till the temperature falls and quinine afterwards. Both these are very good and useful remedies in themselves, but the indiscriminate use of them in all cases and sundry renders us open to the gossip of the public and the ridicule of the quacks

who are ever ready to take advantage of our weakness and benefit themselves thereby. It is true we are deplorably lacking in specifics—at least trustworthy ones. Beyond quinine for malaria, salicylic compounds for rheumatism, ipecac for dysentery, potassium iodide and mercury for syphilis, iron for chlorosis, we have few drugs of a specific nature that we can swear by. Still, we must have an open mind and a free hand in the treatment of fevers. No two cases are exactly alike. No two constitutions are exactly alike. Why then should we go back to the empiricism of the pre-scientific days and treat any two cases of fever exactly alike. I have already referred to the transcendentalists in medicine and incidentally shown how their theory is consistent with their practice. They hypothetise and some even affirm a universal type of disease and they equally believe in a universal type of remedy—call it elixir, water of life or anything else you please—they hold that it will cure any disease. I have already indicated to you how far we can meet them in their pathology. So far also I think we can meet them in their treatment, *i. e.*, in the use of drugs which will restore the lost balance of health without undue stimulation or injury to the system. I have also drawn your attention to, first, the elective and, secondly, the vicarious action of various poisons. The moral of this theory may be applied, in theory at least, to treatment, both in the direction of prophylaxis and cure. I shall be brief in referring to this point, for I wish to gather the opinion of the Association on it. So far as prevention goes we have to strengthen or preserve the strength of the organ most likely to be affected by any given disease with reference to the special

individual concerned. Thus, in tubercle, the lungs or bowel, in cholera, the bowels, in scarlet fever the throat, &c., thus rendering the part which has the greatest predilection for the particular disease proof against it. Towards cure may we not advance a step if we can divert the poison of a given fever into other channels which would affect the general system less injuriously: in other words, bring about a dissipation of its energy. This would resolve itself into a form of counter-irritation.

The fact has long been known to the profession that some diseases are overcome by others; that is, that the poison of one fever is antagonistic or is an antidote to that of another. In the olden days, even nurses used to say that an attack of typhoid fever cured a patient suffering from typhus. Jenner's vaccination brought out the fact that the virus of small-pox when injected into the human body proved a safeguard against the poison of small-pox. How it does so we need not discuss here. It is a recognised fact in medicine that sick headache is cured by the invasion of other diseases, such as epilepsy, asthma or gout. The fever poison is not necessarily bacillary. Any change in any tissue—inflammatory or degenerative—produce what we would be right in calling a fever; the poison may be metallic, animal, vegetable or toxic. In one of these may be found an antidote for another. This again is the work of the laboratory man. There must be a pathological chemist as there is a physiological or pharmaceutical chemist whose function it should be to elaborate all the pathogenic poisons and find their antidotes, if not amongst them, then in other regions of the organic or inorganic kingdoms. We want antidotes. The present prophylactic serum treatment



though it has done much, becomes, when pushed to its logical extremes, an abomination of desolation. It has failed in universal application and, where applicable, the least that can be said of it is that it is cruel and cumbrous to a degree. The curative treatment is the only satisfactory response to the craving of suffering humanity. The cure must be certain and standardized to the dose of the poison. Some believe in antitoxic serums; some in prophylactic ones; some trust in eliminants and others in supportives and stimulants. These are all good in their way and as far as they go, but they do not go far enough. An universal panacea may be an illusion and a dream, but we may hope, we must hope, for an antidote for each of the poisons that produces diseases in mankind. The physiological pharmacologist has done his work nobly and well. It is the turn now of the pathological pharmacologist, or call him toxicologist if you so like to call a dabbler in poisons. The chemist, too, has contributed his quota of cures. It is a sort of return that chemistry has made for what she owes medicine, for chemistry owes us much. Indeed, its pristine virility and a great deal of its subsequent development is due to its association with medicine through the medium of alchemy. The modern manufacturing chemist, however, is a great thorn on our side. He floods the market with such a number of drugs with such queer names and such wonderful actions, that one fairly despairs of finding sufficient diseases for all the remedies offered. I think, Sir, there ought to be an Act in every civilized country to restrict the output by chemists of new remedies, say to four or five a year, if only to save the sanity of the medical profession. Let us now briefly review our present knowledge on the subject of the treat-

ment of certain fevers. Some new remedial measures are still *sub judice*; of these, we have the X rays, colored light and radium. Some have come to stay, such as oxygen inhalations, serum therapy. In this latter we use some vaccines, *e.g.*, of cowpox, hydrophobia and others of proved efficacy. Some prophylactics as those of plague and typhoid are doubtful in their results, while others are useless—at least non-proven, as the sera for cholera and pneumonia. In this country, remembering the suspicious attitude of the laity towards the votaries of Western medicine and the positively hostile attitude of the unani and ayurvedic schools against our methods, we cannot be too careful in trying experiments on our patients. There are two plans of treatment usually adopted for acute fevers. The antiphlogistic and supporting. Some divide all fevers into sthenic and asthenic and put under the latter class all those whose period is prolonged, such as typhoid and small-pox. In sthenic cases they recommend antiphlogistic treatment, using depressants like antimony, aconite, veratrum, viride, and point out their good effects in suitable cases, in the fall of the pulse, the moist skin and the general comfort of the patient, while in asthenic cases they conserve the strength of the patient and wait for bad symptoms, maintaining a sort of masterly inactivity. Others contend that if disease is a departure from the normal standard of health in a downward direction—and fever is no exception to this in spite of the increased temperature and force of heart beat—it is illogical to do anything that will lower the system further. Rather strengthen it, they say, and help it to regain the balance which has been rendered unstable by the disease. In this sense the supportive treatment is

more rational. Even more so than the stimulant, for this latter involves a reaction period which is proportionate to the amount of stimulation. The advocates of supportive treatment regard all medicines used in reducing fever as poison added to the poison of the disease itself. They no doubt most of them depress the heart or nervous system or both and the disease itself is depressing. So, in the fight between the disease and the doctor, the patient suffers and his strength falls so low that after a certain stage even stimulants and supportives may prove useless. Digitalis may be quoted as an exception, but we know that in high temperatures its action is at a discount and its well-known cumulative effect goes against its early use in large doses. Strychnine probably is less injurious. In practice a judicious combination of the two methods would, I think, give the best results. While on the subject of stimulants, I wish to ask a question on alcohol. Some object to it entirely, some give it as a matter of routine. Who is right and who is wrong? It would appear as if both are wrong. Many cases of fever have undoubtedly been saved by the use of alcohol, while in others much mischief has been done. Especially have we to be careful in the use of stimulants during convalescence, for the carelessly given advice to take a glass of coca wine or vibrona or serravallo tonic or any of the many tempting nervine tonics and restoratives so largely advertised and so highly praised for nervous debility and bloodlessness has laid the foundation of life-long drunkenness and misery. I do not hold a brief for the rabid ranting teetotaler, but I do hold with those who believe that, unless it is absolutely necessary, alcohol ought not to be prescribed. A large num-

ber of new synthetic preparations, especially of the aromatic group, is being used in the treatment of fevers. Amongst them are antiseptics like salicin and resorcin, antipyretics like antipyrin and antifebrin, analgesics like phenacetin and enalgin and hypnotics like sulphonal and trional. All these when judiciously used are of great service. In a case of ordinary continued fever, undiagnosed and sthenic, it seems unreasonable to continue the ordinary diaphoretics for more than twenty-four hours. If the fever does not fall, or falls and rises again, it is time to stop the fever mixture or any other antipyretic that is being given and administer quinine. If the stomach is not suitable an effervescing mixture containing quinine in large doses may be given, but by far the best mode of conveying quinine into the blood—the most rapid and least inconvenient to both patient and doctor—seems to be by hypodermic injection. Here we know quinine has got into the blood where the poison is, and we know also how much; whereas, by the mouth, so much depends on the rate of absorption, which again depends on the condition of the alimentary system. If no impression is produced on the fever in three days, it is useless to continue the quinine any longer. We have to support the patient's strength, follow what is euphemistically called the "expectant line of treatment," *i.e.*, do nothing. In these cases "they too serve who watch and wait." Meddlesome interference may cost the patient dear, even as neglect to appreciate changes calling for active interference. Especially in the circulatory, nervous, respiratory and renal systems may place him in a position of extreme danger. Our present treatment of malaria and acute rheumatism is probably the most rational, so far

as the diseases themselves are concerned. We have, however, still to fortify the system, during the fight between the disease and the drug. This we have no satisfactory means of doing, while the followers of the Greek system declare they have. Probably the balance of mortality due to these causes may be put down to this defect in our method. We kill the poison inside the body by quinine and salicylates respectively. We do not treat the fever which is only a symptom. But we destroy the cause. In typhoid, small-pox and other fevers of that class, we but treat the symptoms. We want a drug or remedy for the killing of the typhoid germ or the small-pox virus after it has got into the body, corresponding to the quinine of malaria and salicin of rheumatism. We may entertain the hope—a hope that is not a dream—that sooner or later such a remedy will be found not alone for typhoid but for other infective diseases, as well as for that larger class of diseases which do not seem to differ in their causation and essential phenomena from fevers.

Much has been done, but much more, infinitely more, remains to be done. Finality and perfection are not attributes of human actions but ideals of these are attributes of the human mind and we must all strive each in his own sphere and in his own way for the attainment of these ideals to the best of our individual capacity.

One question more and I shall have done. I fear I have taxed your patience sorely and overtaxed it in fact—but I cannot conclude this paper without referring to you a question which often tries the resources of the individual practitioner and therefore demands a consensus of opinion from an Association such as this.

Are we justified, or are we not in accepting the aid of the professors of other medical systems in the treatment of disease. If justified, how far may we venture? If our present therapeutics offers absolutely no hope of success in a given case, would it be right or would it not, to honestly give the case up, and in any special case where such consent is asked for, hand it over to a Unani hakim or Hindu Vydia who offers to cure the case.

Gentlemen I know of so many specific instances in which such cures—marvellous, almost miraculous cures—have been effected, that, for my own part, I cannot honestly decline to give a fair trial to a well tried hakim or vydia. I would not even be ashamed to learn something of the means which he employed to cure an apparently hopeless case. Are we so rich, I ask, that we cannot afford to beg or borrow? Either of these is better than stealing, surely. I know that the exclusiveness which the etiquette of our profession imposes on us forbids our meeting in consultation an unqualified practitioner; but, at the same time, the true spirit of our profession does not forbid; on the other hand, it demands of us, a fair trial of all possible means of treating disease. Besides, taking the age, the locality and the surroundings into consideration, is it not possible, and permissible to infuse a certain amount of elasticity into the rigid code of morals drawn up for us by the ultra-civilised world, and stretch it if needs be to point short of breaking? Of course by the undiscerning and unthinking, our movement in this direction is apt to be misunderstood, and pointed out in large type as a sign of our weakness. But, Sir, I submit that we ought not to be baulked in our search for knowledge by such minor considerations as these. Our duty to our

profession, and our responsibilities to the public have to be fulfilled in spite of the misrepresentations of our motives and the vicious attacks of the narrow-minded. We must learn to improve our methods of fighting disease, no matter where or from whom. I believe there is no one so low but we can pick up something good from him and perchance raise him a step in the act. Even from the mistakes of others we can gain some useful knowledge. After all, these others also have systems of a sort, and very old ones at that. Empirical they may be and in parts irrational, but from what one sees they seem eminently practical at times. To summarily dub all these men quacks and cut them off altogether would be wantonly losing a chance of obtaining valuable information in the treatment of these fevers which, according to all accounts, are a veritable scourge to humanity.

The nobility of our profession depends on the courage and self-sacrifice it implies and involves. Our men are willing enough to give their time, their comfort, their health—aye, their very lives if need be—for the benefit of mankind. In the face of cholera and plague we don't shrink. We cheerfully meet them and fight them, and these are enemies whose number and strength we have no estimate of. Why then should we be afraid of the croakings of the ignorant and evil-minded laity in our study of the other systems, and in thankfully accepting and acknowledging what of good and true they can give us?

There is to my mind a mistaken impression that there is a certain loss of professional pride and an injury to self-dignity involved in this process. I do not see it. We are, or ought to be, by the very nature

and conditions of our professional work students all our lives; willing to learn from all sources, however humble or antiquated, and to absorb all that adds to our knowledge and improves it, rendering it more exact, more comprehensive and more useful a knowledge that it is our pride and our privilege to apply to the alleviation of human suffering, the furtherance of human hope and the increase of human happiness.

## Cases and Comments.

### A Case of Hysteria.

BY

U. RAMA RAU,  
*Medical Practitioner, Madras.*

A young lady, Mrs. ———, aged 18, belonging to a very respectable family in Mangalore, had an abortion in her third month of pregnancy. As usual, some home remedies were applied and she was said to be all right and keeping good health for about 3 months after the abortion.

One day, all of a sudden while she was bathing in a tank, she felt severe abdominal pain, followed by vomiting sensation and in a few minutes she was quite unconscious. She was taken home in a dholi by her relatives and devil-charmers were sent for, to drive away the devil out of her, for that was the diagnosis of her illness arrived at by her relatives. In about 2 hours' time she regained her consciousness and she was all right till next morning. At 10 A.M. again she fainted without any pain. She regained her consci-

ousness after half an hour. Such kind of fits continued for nearly 3 months. All these days she was treated by devil-charmers. Finding no relief with devil charmers they consulted a local medical man, who diagnosed it to be a case of epilepsy and treated her for about 15 days with no benefit. The highest medical authority of the place next was called in consultation, who diagnosed it to be a case of hystero-epilepsy and treated the case for about a month. During that period the fits were not so severe but used to come every day. Finding no relief the patient was brought to Madras. The following is a short note of her condition when I saw her:—

She was very pale and anæmic; dyspeptic; menses very irregular, painful and very scanty; constipated bowels. Every day at about 10 A. M. she used to feel a sort of sensation (exactly like electric current) commencing from the toe and gradually coming up as far as the knee-joint. Then all of a sudden she used to become unconscious and her whole body used to exhibit tremors. There was no foaming in the mouth, nor twitching of the same and did not even fall down during fits. If she was in a sitting posture she had the tremor in that posture; and if in a lying posture she had it in that posture. The tremor was just like a rigour of ague. Sometimes she was conscious and at other times unconscious during the fit. The fit used to last from half an hour to one hour. There was a good deal of exhaustion after the fit and generally used to drink 2 or 3 bottles of soda-water. In other respects she was all right.

I suspected some uterine troubles, as there was a distinct history of abortion previous to her present troubles. So I called Miss Macphail of the Medical Mission Roy-

puram, in consultation. On her examination she found the uterus retroverted and she replaced the uterus in proper position and retained it by a celluloid pessary. The next day there was no usual fit. That very evening, when she was descending the steps of the staircase the pessary dropped down as it was a little too small. At once the attack came on and lasted as usual for nearly three-fourths of an hour. I at once sent for Miss Macphail and she found the uterus again retroverted. She replaced the uterus, retained it by a bigger pessary. Since that time she has had no fits at all. She was given general tonics for some days and I sent her away home with the direction to retain the pessary till she is 4 months pregnant, of course, with occasional douch of warm water to keep the part clean. Since then she has become the mother of a boy, now 1½ years old, and she is keeping very good health.

**“Liquid Extract of Ergot”  
in the treatment of  
“Diabetes Mellitus.”**

BY

A. GOVINDAN NAIR,  
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A Hindu male, aged about 30 years, came under my treatment on the 20th June 1904 suffering from “Diabetes Mellitus.” The disease was said to have been of 2 years duration. The patient, when first seen by me, was excessively emaciated and was unable to move about without assistance. His desire to void urine was most frequent,—not less than 20 times in 24 hours. The quantity of urine passed on each occasion was also

unusually large (not less than 2 pints), and of a sweetish odour. His thirst was intense and every 10 or 15 minutes he craved for water which he took in large quantities at a time. His skin was dry and harsh and he experienced much relief by covering himself with a wet cloth which had to be renewed every 10 minutes. His appetite was voracious and his bowels obstinately constipated. The specific gravity of his urine was 1050 and on testing with “Fehling’s Solution” it was found to be loaded with sugar.

The patient was put on *heat diet* and the entire exclusion of *saccharine* and *starchy foods* was strictly enjoined. *Codeina* in ½ to 2 grs. doses in pill twice daily was prescribed in the shape of medicine and water acidulated with *phosphoric acid* was given to allay thirst. *Jalapine* in pill was also administered occasionally to relieve the constipation. This line of treatment was continued for a reasonably long period without any beneficial result arising therefrom; nay, the patient began to get worse, all the symptoms aggravating themselves to a degree. Several other medicines, which are reported to have been of therapeutical value in this inveterate disease, were also tried in vain. In short, the encouragement derived from the treatment was so little that I was about to leave the case as hopeless, when the recollection of having read in some books the use of “Liquid Extract of Ergot” in the treatment of “Diabetes Mellitus” came to my rescue. I wanted to give this medicine a fair trial, and accordingly prescribed 10 to 30 minim doses of the same twice daily with 5 grs. of “Dover’s Powder” at nights to relieve the restlessness of which the patient daily complained. *Jalapine* in 2 grs. doses in pill was also given

as occasion demanded to relieve the constipation and water acidulated with phosphoric acid to allay thirst. Scarcely a fortnight or 20 days had elapsed under this treatment when the patient began to show signs of improvement. A slow but steady decrease in the quantity of sugar in the urine was noticed and there was a corresponding reduction in the frequency of micturition. The skin, which was dry and harsh in the commencement, began to get moist and the craving for water was considerably minimised. The treatment was continued with confidence and the patient is still under the same treatment.

**Present Condition.** The specific gravity of his urine at present oscillates between 1025 and 1035 and the quantity of sugar is less than half of what it was in the commencement. The frequency of micturition has been reduced to 7 or 8 times in the 24 hours and the quantity voided on each occasion has also been reduced from 2 pints to 1 pint. His skin is quite moist and he does not complain of much thirst. His appetite is moderate and he is much improved in health.

*Note.*—I do not venture to claim for this medicine any curative value in this disease inasmuch, as the disease itself has been known to be incurable; but I cannot gainsay the fact that, when all other remedies appropriate to the disease failed to exert any beneficial influence, this one had, for its credit, the effect of mitigating the severity of the disease by relieving all urgent symptoms and thus prolonging the life of the patient, which was considered to be in imminent danger when he first sought my advice. The fact that carbohydrate-free diet must have contributed its own share in bettering the

condition of the patient has not been left out of consideration in estimating the value of this remedy in this life-long malady.

### Two cases of Otitis Mastoidea Operation.

#### Recovery.

(i). Mr. V. P., a Hindu gentleman, about 50 years of age was sent to me for consultation by Dr. M. Vijiaraghavaloo with a history of pain in and around the right ear with some discharge. On examination I found the external auditory canal greatly contracted from hypertrophy of the cutaneous lining, the membrana tympani perforated and the middle ear full of pus. There was tenderness over the mastoid region but no swelling. The case was evidently one which commenced as a diffuse inflammation of the external ear and extended to the membrana tympani and to the middle ear and was threatening to produce a mastoid abscess. The first indication for treatment in such a case would have been to perform paracentesis of the membrana tympani but as in this case there was a sufficiently large perforation in the membrana tympani there was no necessity for the operation. I tried to combat the mastoid inflammation with an antiphlogistic treatment. But it was of no avail. I first saw this patient on the 14th May 1903 and I persevered with the antiphlogistic treatment till the 20th. The pain over the mastoid and the tenderness on pressure increased and he was getting rise of temperature every day varying from 99° to 102°. Under these circumstances I explained to the patient the necessity for opening the mastoid cells. He consented to an operation and with the

assistance of Drs. M. Vijiaraghavulu and K. Madhava Menon, I operated on him on May 22nd 1903. I shall describe the operation in detail later on. For the present I will only mention that on making the incision through the soft parts and exposing the bone a small area was discovered denuded of periosteum and in this area by pressure with a probe an opening was made into the mastoid cells from which a small quantity of pus escaped. This opening I enlarged with a gouge and the cavity of cells thus opened into was scraped out with a sharp spoon. It was not considered necessary to open into the mastoid antrum and so the cells that were opened into were packed with Iodoform gauze and the dressing was completed. After the operation the temperature came down to normal, the pain stopped and the patient made a good recovery. In 5 weeks' time the cavity closed up and the external wound healed. The canal of the external ear gave some trouble. Even after the middle ear suppuration was stopped the canal of the external ear remained very very narrow. I dilated this with laminaria tents, and after dilatation on three or four occasions the canal became fairly open.

(ii). Mr. T., a young Hindu gentleman, of about 22 years was sent to me for consultation by Dr. KOMAN on the 29th June last. He gave a history of chronic discharge from the ear since childhood. For 10 days prior to his consulting me he felt the external ear blocked up, the discharge to be more offensive. He had also severe pain in the mastoid region with some swelling. He had daily rise of temperature. On examination a big polypus was found blocking the external auditory canal and on passing a probe by its side a quantity of offensive pus ran

out. Here undoubtedly was a case where the sudden blocking of the passage for the free exit of pus had brought about mastoid complications. On a careful examination of the mastoid region I came to the conclusion that a mastoid abscess had already formed and so I explained to the patient's father the necessity for immediate operation. He consented and that very evening with the assistance of Drs. Koman and Madhava Menon I operated on him. In this case also like in the previous one an area of bone denuded of periosteum was discovered and through that area some of the mastoid cells were opened into and pus let out. Here it was necessary to do something more. In the previous case the bony wall separating the abscess cavity from the mastoid antrum was healthy and it was not considered necessary to open into the cavity. In this case the bony wall separating the abscess cavity from the antrum was soft and some granulations were found growing into the antrum. The antrum was therefore opened into and the cavity thoroughly scraped with a sharp spoon cleaned and packed with Iodoform gauze. The patient made a good recovery and the mastoid wound was healed in 7 weeks. In the external ear several polypi were discovered on the removal of the big polypus mentioned in the early statement of the history of the case. These were all removed. In this case there is still some discharge from the ear which in all probability is kept up by some of the roots of the polypi. The patient is still under my care.

*Remarks.* Both the cases above described are cases of acute purulent inflammation in the mastoid cells or secondary reactive inflammation of the mastoid cells as professor Politzer chooses to call them.

In the early stages of this disease an antiphlogistic treatment with a view to preventing the formation of an acute mastoid abscess is quite justifiable. But the moment we suspect the actual presence of pus in the mastoid cells, we must not delay in opening them. There are two operations for opening an acute mastoid abscess: (1) the simple opening of the abscess with the scraping out of the osseous tissue and granulations as I did in the first case above reported, and (2) the opening of the mastoid antrum (as was done in the second case). Which of these two methods should be chosen can only be decided during the course of the operation.

*The operation* itself is very simple although it ought to be done with extreme care on account of the important structures in the vicinity of the area of operation. The sigmoid sinus, the dura mater, the facial nerve and the external semicircular canal are all in danger and great care ought to be taken not to injure them. The patient having been prepared and anaesthetised the auricle of the ear is held forward by an assistant and an incision is made through the soft parts immediately behind and parallel to the auricle. The posterior auricular artery if cut must be controlled. The soft tissues including the periosteums are raised from the bone. By means of a retractor the anterior parts are strongly drawn forward to expose the posterior superior rounded edge of the bony portion of the external auditory canal. If the bone is soft the opening in the bone can be done by a sharp gouge. Otherwise a perforating instrument will have to be applied. I know here I am touching on a very controversial point. What instrument to use to open into the mastoid antrum is one of the most debated questions in sur-

gery. Without going into the details of this controversy I will simply say that I use a bur for opening the hard cortex and then use a gouge. I may be right or I may be wrong in the selection of these instruments, but I have managed to do all my mastoid cases with these instruments without any untoward accident. The perforating instrument is applied to the surface of the bone below the supra mastoid ridge, slightly behind and below the level of the roof of the external auditory canal. If this ridge cannot be found the instrument should be applied close to the junction of the mastoid surface with the external auditory canal. The direction of the perforating instrument ought to be parallel to the external auditory canal. This direction ought not to be deviated from. If the instrument is applied at right angles to the surface of the skull the mastoid antrum will be missed and most probably the lateral sinus opened into. I may here mention that the operation above described only applies to *acute* mastoid abscesses. The operation in chronic cases is more elaborate and more tedious.

T. M. N.

## THE ANTISEPTIC.

October, 1904.\*

### "What is there in a Name"?

THE poetic conception of the value there is in a name differs substantially from the value that is attached to a name in the Subordinate Civil Medical Department in Madras. The poet thinks that a rose under any other

name would smell as sweet. But the Apothecary in the Madras Medical establishment thinks that he would be a grander personage if he is styled an "Assistant Surgeon." We don't blame the Apothecary. His superiors of the Indian Medical Service some years ago thought, in the same way, that if they could only drop the 'Surgeon' that then formed part of their title (such as Surgeon-Major. &c.) and be designated as Captains and Majors and Colonels like the combatant officers, they would rise high in the public estimation. Their ambition in that respect has been satisfied, and we hope that they are happy. It is now the turn of the members of the Subordinate Medical Department to aspire to a grander title. That they did not put in a claim to be called Corporals, Sergeants, Subadar-Majors and Jambadars testifies to their practical common sense. The title Apothecary is a relic of the olden times; and although there is still in existence a very high-office, namely, that of Apothecary to the King, which is usually held by a distinguished physician, the title generally has fallen into disuse. It smells too much of the medicine bottle, and it may with advantage be abolished, and newer names substituted for it. But while we say that, we demur to the statement that a mere change of title will bring with it an increase of prestige and reverence for the title-holder. This is an ordinary mistake of which our rulers are

often guilty. It was under this very same mistaken notion that Mr. George Nathaniel Curzon was forced to accept an Irish peerage before he was sent out as Viceroy of India. People in England still seem to think that they have only to send out a Lord and the people of India would at once prostrate themselves at his lordly feet. The homage that educated India pays to Lord Curzon is for his brilliant intellectual attainments and not for his place in the Irish peerage. The uneducated Indian knows as much about the difference between a peer and a commoner, as he does about the dissimilarity between the arc of a circle and a parabola. The average uneducated hospital patient in Madras is not likely to "bother his small head about the difference between an Apothecary and an Assistant Surgeon. He will recognize only two classes of medical men in the General Hospital. The higher of the two he will designate by the generic name of 'durai' and the other by the equally general designation of "pathukiri." We know an Assistant Surgeon who often pays friendly calls on us. He has never been an Apothecary. But all the same whenever he calls our servant announces him as "pathukiri." So far for the uneducated. As for the educated Indian he is wide awake by this time to be caught by simple artifices of this kind. He may be trusted to estimate a professional man by the efficiency of his professional work rather

than by the grandeur of his titles. How many Lieut.-Colonels are there among us who in spite of their high military titles have failed to win the professional confidence of the Madras-see native. And how many junior Captains and Majors there are who in spite of their youth and junior rank have at once stepped into prominent places, established lucrative private practices and secured the confidence of their patients. If the native of India was the simpleton, who could be deluded with titles, that some of the Anglo-Indian officials take him for, would he have preferred a captain to a Lieut.-Colonel. We are certain that if some of these Lieut.-Colonels blossom out into Field-M Marshals to-morrow they would rise no higher in the estimation of the native public however much the title of Field-Marshal may go down in value. We need not elaborate this point further. The idea of artificially forcing up the value of a medical subordinate by changing his designation from Apothecary into Assistant Surgeon may be ingenious, but it will never be effective. But for quite different reasons we should like to see the designations of 'Apothecary' and 'Hospital Assistant' done away with. They are at the present time anachronisms. The more modern titles of Assistant Surgeons and Sub-Assistant Surgeons would be far more appropriate.

Perhaps it is possible to force up the value of a medical subordinate by in-



creasing his pay. For, in this commercial age, it is the universal practice to estimate a man by his financial worth. An Assistant Surgeon with a monthly salary of Rs. 250 may be more respected than one with a salary of Rs. 100 a month. But that will be a very expensive method of raising the Assistant Surgeon in the public estimation.

We are told that the necessity for the change of designation of 'Apothecary' into 'Assistant Surgeon' is most felt in the Madras General Hospital. Although we cannot vouch for the accuracy of this piece of information, we can quite understand its force. If it is a fact that in the General Hospital the necessity for a change of the title of the subordinate medical staff is felt, we would suggest that the whole of the subordinate medical staff of the General Hospital be styled "House Surgeons" and "House Physicians." This change of designation, copied from the English Hospital system has been introduced into the Colombo General Hospital with very satisfactory results. We would go further. Not only is a change of designation for the subordinate staff of the General Hospital necessary, but also a radical change in the method of their recruitment is called for. The General Hospital is the biggest hospital in the Presidency, and it has a Medical College attached to it. It is, therefore, in the highest degree essential that the medical staff of that hospital, both the 'visit-

ing' as well as the subordinate, should be the most efficient that the medical establishment of this Presidency can supply. As the visiting staff of the hospital are exclusively drawn from the ranks of the Indian Medical Service and as there is no immediate prospect of this hard-and-fast rule being altered, there is very little to be said about the selection of members of the visiting staff. But the more elastic subordinate staff is capable of considerable improvement. As a preliminary measure, the General Hospital, as a penal station for old and dilapidated Apothecaries and Hospital Assistants who have served in mofussil stations for a decade or two, and who for some fault or other are sent up to "do duty" in the General Hospital, must be abolished once for all. For the sake of punishing such men the efficiency of the General Hospital staff ought not to be impaired. The Surgeon-General can easily devise some other method of punishing these old fossils. We have heard a good story about one of these 'doing duty men.' He was an old apothecary who had been in mofussil stations for a long number of years and who had said good-bye to scientific surgery and medicine long ago. He was posted as Apothecary under a dashing young Surgeon in the General Hospital. The Surgeon one day asked his Apothecary to put out the necessary instruments for a 'Uranoplasty,' and what was the Surgeon's astonishment when he went up to the operating theatre to find ready all the instru-

ments for a *plastic operation on the urethra.*

Well, the first reform ought to be to keep out these doing duty men. Then having secured a good Surgical Registrar and a Medical Registrar and Senior House Surgeon and a Senior House Physician, the remaining House Surgeoncies and House Physiciancies ought to be thrown open to the best graduates who pass out of the Medical College. The system of Honorary House Officers won't work in this poor country. Therefore it would be necessary to pay these men at the same rate as an ordinary Assistant Surgeon. They ought to be entertained for one year. If before the end of that period they secured a footing in the permanent medical establishment, well and good. If not, they are better equipped at the end of their one year's training to earn their living by the practice of their profession than they were when they passed out of the Medical College. In this way the General Hospital will have the advantage of the services of the best medical graduates of the Madras University of each year, and the medical establishment of this Presidency as well as the country at large will profit by the services of a number of medical men who have had the advantage of a practical post-graduate training as House Surgeons and House Physicians. Without any disrespect to any of the members of the Subordinate Medical Depart-

ment, we feel bound to say that, excepting the few who have had the good fortune to be posted for any length of time to any of the hospitals in the metropolis and who have had the advantage of a practical training there, a large number of the medical subordinates in this Presidency will be all the better for a little closer acquaintance with practical medicine, surgery and midwifery.

### "Science and Protection."

Mr. Chamberlain's protectionist campaign has evidently penetrated even the placid and academic calm of the Edinburgh Royal Infirmary. For, under the above heading, we find a leading article in the August number of the Edinburgh Medical Journal which puts in a plea for 'Protection' for scientific workers. What is the immediate cause of this startling and revolutionary change of opinion in the higher medical circles of the Scottish metropolis. It seems that "in the lists of those debutantes who have had the honour of being presented at recent Drawing-rooms, are to be found no less than three names which connote the idea of very well advertised nostrums. One is that of an emulsified hydro-carbon; another that of fructiferous saline; while the third connotes the ideas of maternal tenderness and of a saccharine fluid of soothing properties. To the young ladies who bear these honoured names we cheerfully tender our best congratula-

tions. .... The question must, however, suggest itself as to how many workers in science can hope to place their daughters in a similar exalted position. The proprietor of a quack remedy, if he knows his business, is practically certain of wealth. The brilliant man of science must be content with cultured penury. He generates the discovery; and the enterprising tradesman reaps the result, usually in dollars." This is the state of affairs the contemplation of which has made the otherwise orthodox Edinburgh Medical Journal astonish the professional world with its protectionist heresies. The Edinburgh Medical Journal advocates protection in science by the taking out of letters patent for scientific and medical discoveries. It was Syme's discovery which Macintosh patented. The idea was Syme's although it was Macintosh who made money by it. If Syme had patented his discovery he would have reaped its financial reward instead of it being reaped by some one else. Thus argues our contemporary. To that all that we have to say is that the world thinks more of Syme and very little of Macintosh. While in this frame of mind our contemporary could easily have argued that the brewers and whiskey distillers of Edinburgh are far richer than the richest Edinburgh doctor, and brewing being a more paying occupation than the practice of medicine or surgery, it is better

for the Medical Staff of the Edinburgh Royal Infirmary to forthwith give up their professional work and start the manufacture of some kind of pale ale. Look at the number of brewers who have secured seats in the House of Lords while only one solitary medical man—Lord Lister—has found his way into that exalted assembly.

The idea of protection in science conjures up infinite possibilities. The professor who lectures to his class may have to stop in the middle of his discourse with an apology to say "Gentlemen, as to the treatment of this disease I have something new to suggest, but as I have not yet patented it you will pardon me if I withhold the information from you for the present till I have completed all the formalities for taking a letters patent. When I have published my discovery I hope that you will all patronize my cure as it will be cheaper and more efficacious than any other in the market."

If we knew the editors of the Edinburgh Medical Journal less than we do we might have taken their protectionist arguments seriously. But knowing them as well as we do we quite enjoy the humour of the article. It will not be inappropriate if we quote here a stanza from a poem in 'Punch' on the addition of a commercial side to the Birmingham University.

"The gay old pile that once was known"

As Univ: was no more.  
And on its ancient site had grown  
A universal store:

Here freshers sold you pounds of tea,  
There smart shop-walking scholars  
Were bidding madam pause and see  
The latest thing in collars."

## Our Contemporaries.

### MEDICINE.

#### Some Puzzling Cardiac Murmurs.

BY

DR. LADISLAUS SYLLABA.

(1) FLINT'S MURMUR.—Cases occur in which a diastolic or systolic aortic murmur is accompanied by a presystolic murmur and thrill at the apex, but postmortem the only lesion found is aortic insufficiency or insufficiency combined with stenosis. This apical bruit is known as "Flint's murmur." Of numerous explanations, that of Sansom appears the most rational. The regurgitant stream of blood flowing through the semilunar valves into the left ventricle strikes against the aortic cusp of the mitral valve and forces it against the auriculo-ventricular orifice. This alone would produce some mitral stenosis, but the resulting presystolic murmur and thrill are reinforced by vibrations of the inverted mitral cusp, which is exposed to the impact of two opposed currents.

A girl, aged 18, had rheumatism at 14. The cardiac impulse was diffuse and palpable in the sixth interspace in the anterior axillary line. At the apex was a presystolic thrill. The cardiac dulness extended 2 ins. to the left of the nipple line. At the apex was a presystolic murmur, such as accompanies mitral stenosis, and at the aortic area a typical dias-

stolic murmur. Aortic regurgitation with Flint's murmur was diagnosed. She was given digitalis and ordered rest in bed. Her condition improved, and the pulse rate fell from 106 to 92 in 3 days. The presystolic murmur and thrill at the apex were less distinct, but the diastolic aortic murmur was unchanged. During the next 6 weeks digitalis was constantly taken. The apical murmur varied in intensity, but did not disappear.

A characteristic of Flint's murmur is that it frequently varies in intensity and sometimes completely disappears. In one of the writer's cases it was present only in the recumbent position. A practitioner ignorant of this fact would be puzzled to find signs of mitral disease alternating with those of aortic regurgitation. If two practitioners examined the patient at different times one might diagnose mitral stenosis, the other aortic regurgitation. Only after prolonged observation of the varying intensity of the murmur is a correct diagnosis possible. Though the complicated murmurs combined, with hypertrophy and dilatation are alarming the prognosis does not appear to be worse than in aortic regurgitation without Flint's sign.

(2) SYSTOLIC APICAL MURMUR IN ARTERIO-SCLEROSIS.—Though the systolic apical murmur which may accompany the cardiac dilatation of chronic nephritis is well known, the occurrence of an apical murmur in arterio-sclerosis with cardiac hypertrophy without albuminuria is less generally recognised. According to Edgren and Basch, a systolic murmur is found in 6 per cent. of all cases of arterio-sclerosis. A presystolic murmur is much rarer, and was found in only 3 of 480 cases. The murmurs may be permanent or temporary. In the minority of cases they depend on organic disease—cardio-sclerosis of the mitral valve. But usually the valve is perfectly healthy, and the regurgitation depends on dilatation of the

valve and relaxation of the muscular ring which surrounds it. Some believe, however, that it is due to irregular contraction of the papillary muscles. This murmur is not infrequently, especially in chronic nephritis, combined with cantering rhythm.

(3) DIASTOLIC and especially POST-DIASTOLIC AORTIC MURMURS frequently depend, not on organic disease of the semilunar valves, but on relaxation of the circular ring of muscles surrounding them, and consequent dilatation of the first part of the aorta. They are common in arterio-sclerosis, Bright's disease, and old age. In some cases the murmur disappears periodically. This lesion is characterised especially by a short, faint, whiffing, post-diastolic murmur, which immediately follows an accentuated ringing second sound, and is quite distinct from the prolonged diastolic murmur of typical aortic regurgitation. There is what the writer terms "relative" insufficiency. According to Rosenbach, signs of atheroma of the aorta and a water-hammer pulse may precede the appearance of this murmur. Sudden death from syncope is not uncommon in these cases.

(4) THOMAYER'S FRICTION SOUNDS are of exocardial origin, and are heard over the origin of the great vessels behind the upper part of the sternum. They occur only towards the end of inspiration. They are not continuous, but are composed of 2 or 3 distinct sounds, each of which is synchronous with the cardiac systole. The sounds, therefore, depend partly on the respiratory and partly on the cardiac rhythm. Thomayer's explanation that they depend on inflammatory roughening of the adventitia of the great vessels close to their exit from the heart is probably correct. They are found especially in old people, but may occur at any age.

(5) PSEUDO-PERICARDIAL SOUNDS may arise in three ways. (a) There may be pleurisy in the immediate neighbourhood of the heart, and more especially of that tongue-shaped process of the upper lobe of the left lung

which is known in Germany as the *processus lingualis* or *lingula*. Rough friction at the boundary between the heart and left lung results and is produced both by respiration and the cardiac beats. During deep respiration the first factor is the more important, and the sound approaches that of simple pleural friction; during superficial respiration the second factor predominates, and the sound resembles that of pericardial friction. If the breath is held at the height of an inspiration the sound usually ceases—a fact which distinguishes it from true pericardial friction.

(b) Less generally recognised are those pseudo-pericardial sounds which may occur during sero-fibrinous perihepatitis. The heart transmits its movements to the diaphragm and liver, the surfaces of which are rough and covered with fibrinous exudation. A sound results which exactly resembles pericardial friction. It was first described by Emminghaus in 1872 (*Deutsches Archiv f. Klin. Med.*, Bd. iv), and the writer has recently published a case (*Sbornik Klinicky*, Bd. iii., Hft. 1).

(c) Lastly, pseudo-pericardial sounds may be of doubtful origin. The writer reports two cases in which systolic and diastolic sounds were present over the sternum, with clear cardiac sounds, which became more intense if the breath were held at the height of inspiration, but did not entirely disappear during expiration. The cardiac dulness was normal, and there were no other signs of pericarditis. In the course of months they completely disappeared. Possibly they were due to right mediastinal pleurisy.

(6) A BRUIT DE DIABLE MAY BE CONDUCTED TO THE CARDIAC BASE, and is then likely to be mistaken for the murmur of aortic regurgitation. Thus in a chlorotic girl, aged 13, there was a double murmur in the right second intercostal space near the sternum, which somewhat resembled that of aortic regurgitation and stenosis, but on closer examination was found to be due to a *bruit de*

*diabie* which was reinforced at every systole, and so acquired the character of a double murmur. It could be traced upwards over the right jugular vein, where it became continuous and humming. The murmur obscured the normal aortic sounds. Allied to, but not identical with this murmur are those diastolic sounds described by Eiselt as occurring in pernicious anaemia, which are probably due to incomplete filling of the systemic veins.

(7) CARDIO-PNEUMATIC MURMURS arise by the cardiac movements compressing the lung and causing aspiration of air into the pulmonary tissue in immediate contact with the heart. This aspiration and consequent murmur may arise either during systole or diastole. Potain explains all functional cardiac sounds by this mechanism, including those of anaemia, the apical systolic murmur of old people, and Flint's murmur. But the role of cardio-pneumatic murmurs is certainly more restricted. In the writer's experience they occur chiefly in young, and especially neurasthenic, people, who are nervous and excited at being examined. They are usually heard in the third or fourth left interspace just to the inner side of the nipple but are occasionally audible in the second and third right interspace. They are usually systolic and only exceptionally diastolic. Between the third left interspace and the clavicle the murmur may often merge into jerky respiration. The tone is quite distinct from all other functional or exocardial murmurs. According to Thomayer they depend on a peculiarity in shape of the lung adjacent to the heart, and usually on the presence of a long narrow lingula.—*Zeitschrift f. Klin. Med.*, 50, Bd., 5 u. 6 Hft., p. 462.

### Jaundice in Secondary Syphilis.

BY

DR. W. J. CALVERT.

A man, aged 27, was admitted to hospital with intense jaundice. Six weeks before a

sore developed on the glans penis, and 3 days before the patient first noticed the jaundice. There were intense jaundice, an indurated chancre, one enlarged right inguinal gland, and slight general glandular enlargement. The liver was of normal size. The urine contained bile pigments but the faeces were not decolourised. Three days later a general macular eruption appeared. The general condition of the patient was good; there was neither fever nor digestive disturbance. Under mercury and iodide the jaundice and secondary symptoms disappeared in 3 weeks.

Jaundice in secondary syphilis is rare. Werner in the records of the Hamburg hospitals found only 57 cases of jaundice in 15,799 cases of secondary syphilis. The jaundice has been ascribed to various causes—enlarged glands pressing on the bile-ducts, secondary eruptions in the intestines obstructing the flow of bile, congestion of the liver, and catarrh, similar to that of other infectious diseases. Two types can be distinguished—a benign and a grave. In the former the jaundice develops rapidly without the usual digestive disturbances of catarrhal jaundice. In three-fourths of the cases it appears simultaneously with the secondary symptoms; in the remainder, either before or after them. In degree it varies from a light to a deep tint. Its course runs parallel to that of the secondary symptoms. It lasts from a few days to two months, but if treatment is neglected it may become chronic. The hypochondriac region may be tender. In two of Werner's cases the liver was enlarged. The urine has the ordinary characters of jaundice and the faeces are more or less decolourised. Pruritus is seldom present. Werner observed xanthopsia in three cases. In grave cases the jaundice first develops as in benign cases, but on the fifth or sixth day delirium hæmorrhage, purpura, or coma occurs, and death often rapidly follows.—*American Journal of Med. Sciences*, May.

### Spasm of the Arterioles in the Gastric Crises of Locomotor Ataxy.

Prof. Pal claims that the gastric crises of locomotor ataxy are a vasomotor phenomenon. The intense pain of a gastric or abdominal crisis is invariably accompanied by a rise of arterial tension, as recorded by Gartner's tonometer, which may amount to 150 per cent. of the tension, between the attacks. This rise of tension is due to spasm of the peripheral vessels of the viscera. The mesenteric vessels are consequently unable to empty themselves, become tense, rigid, and tortuous, and pulsate violently. The rise of pressure always precedes the attack, from which it may be concluded that the vascular changes are the primary cause of the pain in a gastric crisis. The violent pulsation of the vessels irritates the sensory nervous mechanism of the mesentery, and especially the solar plexus. As the crisis subsides the blood pressure sinks to or even below normal. If the blood pressure is reduced, for instance by chloral, the pain and all other symptoms of the crisis subside. Small doses of morphine may relieve the pain, but unless they also reduce the blood pressure do not remove the other symptoms, such as cyanosis, heart failure, and dyspnoea. During a gastric crisis the heart beats rapidly. The high blood pressure may produce, besides the gastric attack, a number of cerebral symptoms, such as headache and vertigo, or more rarely unconsciousness, convulsions, and transitory amaurosis, aphasia, and paralysis. —*Munch Me. Woch.*, December 8, 1903, p. 2135.

**Trypanosomes in the Lymphatic Glands in Sleeping Sickness.**—E. D. W. Greig, M. B., C. M., and A. C. H. Gray, M. B., M. R. C. S., L. R. C. P.

The writers have examined the contents of lymphatic glands during life from 15 cases of sleeping sickness. In all of them actively

motile trypanosomes were very readily found in cover-glass preparations taken from the cervical glands. They were also present in other glands, such as the femoral, but were not so numerous. The trypanosomes were far more numerous in the glands than in the blood. The writers believe that examination of fluid removed from lymphatic glands will prove a much more rapid and satisfactory method of diagnosing early cases of sleeping sickness than examination of the blood.

At first the glands were excised, but this was soon found to be unnecessary, as it is easy to puncture a superficial gland with a hypodermic syringe and to suck up some of the juice into the needle and to blow this out on a slide. The actively moving trypanosomes were readily found after a short search, when a prolonged search in preparations of the blood failed to discover them. In stained specimens, in addition to well-formed trypanosomes, there exist many broken-down remains which suggests that a destruction of the trypanosomes takes place in the glands.

The writers also examined the cervical lymphatic glands of natives suffering from trypanosomiasis who have been under observation for the past year, and found actively motile trypanosomes in the liquid withdrawn from the glands in all of them.

These observations throw a new light upon the glandular enlargements so constant in sleeping sickness. The presence of trypanosomes in number in the lymphatic glands of both early cases of trypanosomiasis and advanced cases of sleeping sickness are important evidence of the unity of these diseases. —*Lancet*, June 4, p. 1570.

### Pyrexia in Gonorrhoea.

BY  
Z. BLINDREICH.

Gonorrhoea is a typical infective disease with incubation and prodromal stages, and occasionally pyrexia.

A man, aged 22, consulted the writer on Feb. 10, at the beginning of an attack of gonorrhoea. It was the first attack, and extremely acute. He was treated locally with compresses dipped in iced water and changed every 3 hours, and internally with 10 drops of salosantal thrice daily. Eight days later injections of a 1 in 200 solution of sulphocarbolate of zinc were prescribed. The discharge diminished but did not entirely disappear. On the morning of Mar. 8 he appeared to be nearly cured. But 2 hours later the writer was summoned urgently. On arrival the temperature was 104.40, and the pulse 120. Every 15 minutes there was a violent rigor, which lasted about 3 minutes. There was profuse sweating. The diagnosis was doubtful, but owing to some slight crepitations on the right side the onset of pneumonia was suspected. But the possibility of the symptoms being due to a clumsily given urethral injections was not overlooked. The injections were discontinued, and 15 gr. of salol were given every 2 hours. The writer intended to pay a second visit at 8 p.m. But at 7 p.m. the patient walked into his consulting room. The rigors had ceased after the second powder, and the temperature became normal after the fourth. The discharge continued for another fortnight, but there were no more rigors or pyrexia. The patient had never had malaria. —*St. Petersburg Med. Woch.*, No. 10, p. 95.

### SURGERY.

#### Rupture of a Sacculated Aneurysm of the Ascending Aorta into the Superior Vena Cava: Survival for 4 Weeks.

BY

VON LEYDEN AND WESTENHOEFFER.

A man, aged 57, was admitted to hospital on Feb. 29. He had worked as a furniture polisher and appeared to be well until Feb. 13, when, on his way home, he felt as though he had been suddenly struck in the cardiac

region. For some time after his arrival he was giddy. The next day his eyelids were swollen, and soon the swelling extended in turn over the head, arms, and chest. The left arm was especially swollen. There were severe dyspnoea, and a feeling of weight in the head, and especially in the eyes and ears. The quantity of urine was diminished. Two attacks of severe epistaxis occurred.

There was orthopnoea and the whole of the upper half of the body was extremely oedematous. The face was swollen and cyanosed, the eyelids were puffy, the neck was thickened and cyanosed, the hands and arms were swollen. Oedema ceased abruptly at the umbilicus, and the legs appeared by contrast abnormally thin. Evidently the superior vena cava or the innominate veins were compressed or obliterated. Similar oedema, though unilateral, may depend on cicatrices or tumours (carcinoma of the mamma) in the axilla. Unilateral oedema of the face is specially marked if an enlarged cancerous gland is present at the termination of the thoracic duct in the vein. Bilateral oedema of the upper half of the body is usually due to mediastinal tumours or aortic aneurysms. A radiograph showed in this case that there was an aneurysm of the size of a pigeon's egg. There was heaving pulsation over the manubrium sterni. The cyanosis increased until the skin was bluish black. The veins were engorged, though this was partially obscured by the oedema. There was no venous pulsation. The radial pulses were palpable but were not characteristic. The cardiac dulness was enlarged to the left and extended, though less markedly, over the sternum. The apex beat was heaving. Resonance was normal over the anterior part of the lungs. The slightness of increase of cardiac dulness was later explained by the fact that the lungs were pushed forward by bilateral hydrothorax so as to cover the heart and aneurysm. Two murmurs were heard over a limited area at the right border of the sternum. The one faded imperceptibly into

the other, both being of the continuous, humming, whiffing character, characteristic of venous murmurs. They were inaudible over the carotid arteries and base of the heart. The pulse was present in the femoral arteries. From the size and position of the aneurysm it was probable that it had compressed the superior vena cava or the right auricle. But in this case the symptoms of compression would have been more likely to have appeared gradually. It was, therefore, assumed that a dissecting aneurysm had suddenly expanded or ruptured.

There were nocturnal attacks of præcordial pain and dyspnoea, which were relieved by assuming an erect posture. On Mar. 14 his condition deteriorated, and the following day he died somewhat suddenly.

**NECROPSY.**—There was an aneurysm of the ascending aorta which was sacculated and composed of several compartments. Anteriorly its wall was thin and was evidently on the point of rupture. It lay over the right auricle so as completely to hide it when the heart was exposed. The superior vena cava was also invisible until the aneurysm, with the posterior wall of which it was firmly adherent, was forcibly pushed aside. The cause of the oedema was thrombosis of both subclavian and the left jugular veins. Both innominate veins and the right jugular veins were patent. The aortic valves were somewhat thickened but competent. But the most interesting lesion was a communication between the aneurysm and the superior vena cava. The perforation, which was of the size of a lentil, was situated just below the junction of the innominate veins. Its edges were smooth, and sharply defined as though made with a punch, the endothelium of the vena cava being apparently continuous with that of the aneurysm. The rupture probably occurred suddenly on Feb. 13. The left cerebral hemisphere was more arched and prominent than the right, and the pial veins were more engorged on the left side than the

right. There was no cerebral thrombosis. There were also trichinosis and a teratoma between the abdominal aorta and the inferior vena cava; the walls of the latter contained epithelial columns resembling those of carcinoma. It was hard to say why the right jugular and left innominate veins did not become thrombosed, and what was the origin of the murmurs heard over the sternum.

In the discussion which followed the demonstration of this specimen, A. Fraenkel maintained that the sudden appearance of oedema limited to the upper half of the body was characteristic of rupture of an aneurysm into the superior vena cava or right auricle, and could have no other origin. He had seen 3 cases, in all of which the symptoms appeared suddenly after exertion. A peculiar rushing, prolonged, systolic murmur not previously present was found over the entire præcordial region. In some reported cases there has been a venous pulse. Its absence both in von Leyden's and Fraenkel's cases was evidently due to thrombosis of the innominate veins or their tributaries.—*Deutsche Med. Woch.*, April 14, p. 600.

#### Substitution of an Ivory Rod for the Entire Diaphysis of the Radius.

BY

KARL VOGEL.

In a girl, aged 8, osteomyelitis of the radius, resulted in necrosis of the whole of the shaft which was removed as a sequestrum. Owing to lack of support the hand soon became displaced towards the radial side. A long incision was made on the radial side of the arm, the surface of the cavity in which the radius formerly lay was freshened and somewhat enlarged, and a large ivory rod was inserted. The pointed ends of the rod were driven into the still intact epiphyses. The soft parts were sutured over the rod, and the arm was placed on a splint. The

wound healed by first intention. Active and passive movements of the fingers and wrist were begun three weeks later. Eventually the child could use the hand as well as before the illness, though pronation and supination were perhaps slightly restricted. A radiograph taken about a year after the implantation showed that there was new-formation of bone, both in the epiphyses and also in the form of isolated scales round the diaphysis. The subluxation of the wrist had almost entirely disappeared, and the long axis of the little finger was in line with that of the ulna. The fate of the ivory rod is unimportant, as the result will be excellent, whether it is finally absorbed, or, after invagination, extruded.—*Deutsche Med. Woch.*, Nov. 12, 1903, p. 846.

#### A New Method of Treating Adherent Soft Palate.

BY

DR. MCDOUGALL.

A woman, as a result of tertiary syphilis, had the soft palate completely adherent to the posterior walls of the pharynx. The writer treated the condition by a new method. A thin plate of metal was attached by one end to the back of the patient's artificial tooth-plate, and at the other end was a soldered tube passing up into the naso-pharynx through an opening made in the soft palate. Healing took place round the tube, and the edges became covered with epithelium. The patient removed and replaced the arrangement as readily as she had done her ordinary tooth-plate.

With patients who have no tooth-plate a carrier for the tube can be fastened round the teeth. The operation is simple; it can be performed with cocaine. The appliance gives no trouble; the sense of smell returns and the sense of taste regains its full value. Breathing is carried on comfortably through the nose. In short, the functions of the

nasal passages are completely restored. *Liverpool Medico-Chirurg. Jour.*, Jan.

#### Empyema of the Frontal Sinus followed by Cerebral Abscess.

BY

PAUL S. MERTINS, M.D.

A man, aged 40, came under treatment on Sept. 8, 1903. He had suffered for 6 months from violent headaches of increasing severity. In the last 3 days a tender fluctuating swelling of the size of a dollar appeared in the region of the glabella. Around its margin was a hard rim. The patient contracted syphilis 16 years before and 2 years before he received a blow with a hammer on the top of the head and was unconscious for several days. The swelling was incised and about an ounce of dark-coloured pus was evacuated, with complete relief. On the third day the pain returned and when he held his head forward the flow of pus increased and the pain diminished. On the night of Sept. 13 the pain became more severe and he vomited several times and had 3 convulsions. On the following morning he was seen in consultation.

Cerebration was slow but no paralysis could be found. The anterior end of the middle turbinate bone was swollen. The temperature was 97.5°. On probing the wound necrosed bone was found and in several places the probe seemed to enter the cranial cavity. Extradural abscess was diagnosed. Under chloroform a 3-inch incision was made through the seat of the abscess. The pericranium was found separated from the bone and was held back by retractors. An area of necrosed bone of the size of a dollar was exposed. It was dark brown and resembled a pepper-box, in consequence of numerous fistulae through which pus oozed at each respiration. A button of bone was removed from the centre of the necrosed area with a half-inch trephine. An extradural



abscess containing about an ounce of pus was found. The trephine opening was enlarged to the size of a dollar. The dura-mater was adherent to the frontal bone all around and formed the bed of the abscess. The removal of the necrosed bone opened the left frontal sinus which contained about half an ounce of pus. The right frontal sinus was opened and found to be healthy. The duramater was of a dirty yellowish colour and pulsated only on the left side. On the 15th the patient's general condition was good and his mind was clearer. There was a condition of irritability with semi-stupor and the urine was passed involuntarily. On the 23rd there were transient paresis of the right internal rectus muscle and right optic neuritis. On the 24th he was more stupid. An aspirating needle introduced into the right frontal lobe was felt to enter a cavity and pus flowed through it. A pair of scissors was entered beside it and the blades were separated. About 1½ oz. of creamy pus and a yellowish lump of broken-down brain tissue was evacuated. The cavity was curetted and an iodoform gauze drain was introduced. The mental condition at once improved and the pulse rose from 78 to 100. On the following days the patient improved slowly and the abscess cavity grew smaller and the discharge less, but on the 30th there were symptoms of hypostatic congestion of the right lung and hæmoptysis. On Oct. 3rd the left lung became involved. He grew worse and died on the 5th.

**NECROSIS.**—A depressed fracture of the size of a hammer-head was found in the left parietal bone ½ inch deep near the sagittal suture. The bone was healthy. This fracture was probably the result of the blow received two years previously. Around the trephine opening the dura mater was adherent to both the bone and the brain. It was also adherent to the depressed fracture. The brain showed an abscess cavity 1½ inch deep, surrounded by nearly normal tissue. The inferior lobes of the lungs were in a

state of hypostatic congestion.

Cerebral abscess is a rare result of empyema of the frontal sinus. The posterior wall of the sinus was necrosed and a fistulous track led from it to the extradural abscess. But for the pulmonary complication the patient would probably have recovered from the cerebral abscess. *American Jour. of the Med. Sciences, April, p. 684.*

### Obstetrics & Gynecology. Pregnancy after removal of Both Ovaries.

BY

W. A. MEREDITH, F.R.C.S.

Recently some cases of pregnancy occurring after removal of both ovaries have been reported. The conditions requiring operation have generally been described as chronic inflammatory disease of the uterine appendages, occasionally as cystic disease of the ovaries. The subsequent pregnancy has been explained on the supposition that some portion of ovary was left, usually by accident, but in some instances intentionally, with the object of not interfering with the menstrual function. The following case illustrates the possibility of pregnancy after double ovariectomy, under circumstances admitting of no doubt as to the complete extirpation of both ovaries.

A woman, aged 35, recently married, was seen on Mar. 14, 1901. She had always enjoyed good health. Menstruation was regular until 7 weeks before, when it was scanty and accompanied by much pain. She had suffered from nausea for 8 weeks, and believed herself pregnant. The abdomen was distended by a somewhat irregular and obscurely fluctuating tumour extending upwards on the right side to within two-finger-breadths of the costal arch, and to a somewhat higher level on the left. This latter portion was apparently separated by a definite sulcus from the main mass of the tumour, and gave the impression of an independent growth.

The base of the larger tumour, of more solid consistence than its abdominal portion, was firmly wedged in the pelvic cavity, which it practically filled, displacing the cervix upwards and to the left. The enlarged body of the uterus was situated above and to the left of the pubes in front of the tumour. Double ovarian cystoma, probably dermoids, complicated by early pregnancy of some 8 weeks' duration, was diagnosed.

On May 16 the abdomen was opened. The omentum was adherent to the abdominal wall from the umbilicus to the tubes. A dermoid cyst was removed from either side. In both instances the elongated pedicle, including the Fallopian tube and ovarian ligament, was purposely tied and divided as far as possible from its uterine extremity, in the hope of avoiding subsequent miscarriage. On the third day after operation, however, uterine hæmorrhage began, and after persisting for 48 hours culminated in the expulsion of a vesicular mole.

In April, 1902, she was seen again. She was in excellent health, and said that in Jan. and Feb. she had noticed a coloured "show," lasting on each occasion 48 hours, and that in Mar. she had a normal "period." The uterus was normal in size, position, and mobility; the sound passed readily 2½ inches, and caused no bleeding. No trace of any pelvic deposit or thickening could be detected. During the next 11 months menstruation was regular. After the period which ended on Mar. 1, 1903, she did not menstruate, and suffered from nausea for the next twelve weeks. Towards the end of July she began to feel movements at intervals. At the end of Aug. she had a fall which was followed by pain, hæmorrhage, and the expulsion of a 5-months' foetus. Menstruation recurred in Oct., and has since been regular.

Mr. Alban Doran has described a case of pregnancy after the removal of both ovaries for cystic disease at separate operations ("Review," Vol. V., p. 526). The second

operation was followed by a recurrence of normal menstruation, and two years later by the birth of a child. The tumour removed was a true multilocular ovarian cyst, of which the base burrowed between the layers of the broad ligament. Mr. Doran concluded that some detached area of ovarian tissue must have escaped removal. In the present case the supposition that some portion of one ovary was accidentally left behind at the operation, as may well happen during the removal of small adherent ovaries or of a sessile or burrowing cyst, may be discarded. Both tumours were connected with the uterus by long and exceptionally well-defined pedicles, which, although purposely secured at some distance from their uterine extremity, afforded ample space on the distal side of the ligatures for the avoidance during division of any interference with the base of the tumours. The possible existence of a third ovary has been often conjectured, and its occurrence has been recorded in German literature; but in every instance a third Fallopian tube appears to have been present. Now, although in the course of an operation an accessory ovary might be overlooked, it is unlikely that a third tube would. The writer feels certain that no such abnormality existed. The only alternative supposition is that the ovarian tissue in question consisted of an outlying portion in connection with the uterine extremity of one or other ovarian ligament. Such a condition—originally noted by Dr. Lockyer, as having been discovered in a uterine tumour removed, by abdominal hysterectomy, with both appendages attached—would account for the return of menstruation, followed by pregnancy. This appears to be the explanation.

Such cases show the advisability of giving a guarded prognosis as to the possibility of pregnancy after double ovariectomy. Until recently the question was never entertained. So far the majority of cases appear to have followed the removal of chronically inflamed appendages, where some small portion

of one or other ovary has been accidentally left behind, presumably on the proximal side of the ligature. But this may occur during the enucleation of any sessile or intra-ligamentous growth.

The so-called conservative treatment of diseased ovaries, originally advocated with the view of avoiding interference with the menstrual function and consequent disadvantages of a premature menopause, has recently been practised on the continent and elsewhere with the further object of avoiding subsequent sterility, and with occasional success. But there is the objection that the treatment may expose the patient to a recurrence of the disease in the remaining portion of the ovary. However, in young women suffering from double ovarian cystic disease of a simple type, one is justified, when possible, in leaving a portion of normal ovarian tissue connected with the pedicle. On the other hand, in cases of rapidly growing adenomatous tumours, of colloid or papillomatous cysts, and of dermoid growths, no such attempt should be made, as the risk of recurrence far out weighs any possible benefits. In consequence of the occasional existence of follicular elements in connection with the ovarian ligament it is advisable in any case involving removal of both ovaries for cystoma of a non-malignant type to aim at transfixing the pedicles at a point sufficiently remote from the uterus to ensure non-interference with the root of the ligament, since by so doing one may afford the patient a possible chance of subsequent maternity as was unwittingly done in the case now related.—(*Brit. Med. Jour.*, June 11, p. 1361).

# OPHTHALMOLOGY. Investigation of the Pathological Anatomy of Sympathetic Ophthalmia and Its Relations to Other Traumatic and Non-Traumatic Uveitis.

BY

SOPHUS RUGE (Greifswald).

Dr. J. Jameson Evans reviewing from *Von Graefe's Archiv für Ophthalmologie*, lvii. 3. 1904. writes in the "Ophthalmic Review", that this investigation was undertaken by the author in order to find out whether the structural changes in sympathetic uveitis are different from those in traumatic uveitis not associated with sympathetic inflammatory and in chronic uveitis due to constitutional causes.

The first series of cases examined consisted of 26 exciting eyes which had set up sympathetic ophthalmia and two sympathising eyes. The histological changes were carefully examined in all cases, and in a few the absence of tubercle bacilli was demonstrated by the results of special staining processes and the inoculation of rabbits. In all these cases there was a more or less severe inflammation of the whole uvea. In eyes enucleated early there were signs of recent though chronic inflammation, indicated by round cell infiltration and the formation of recent granulation tissue on the part of the iris and ciliary body. This infiltration with uninucleated round cells was sometimes diffuse and at other times the cells were arranged in circumscribed roundish areas which often showed a blood-vessel in the centre. This sign of chronic uveitis was present even in cases of suppurative panophthalmitis and was regarded by the author as the only cause of sympathetic inflammation.

The iris and ciliary body were infiltrated with round cells and were covered by a richly cellular exudation which was separated from the infiltration in the stroma by a fringe of degenerated pigment cells. In the later

stages this granulation tissue was transformed into fine connective tissue; but even in the most advanced cases there were some round cells visible—a sign that the inflammation was still active. The extent to which these parts of the uvea were affected varied greatly, and the constituent structures of one body were variously affected, e.g., the folds of the ciliary body were infiltrated whilst the muscle was free. The choroid was similarly infiltrated with round cells which were generally confined to the outer two layers, though in some degrees of inflammations the capillary layer was attacked and even destroyed—this latter generally only in cases of acute purulent inflammation. The anterior and posterior parts of the choroid were sometimes affected, whilst the equator was left free. The choroid showed no exudation on its surface like the iris and the ciliary body. The blood-vessels of the iris were often thickened owing to a deposit of round cells in the walls or by connective tissue formation. Sometimes they showed proliferation of the endothelium and diminution of their lumen. In more advanced cases—possibly owing to defective nutrition—the nuclei were diminished and their outlines were ill-defined, so that the picture of hyaline degeneration was presented. The author does not regard this as characteristic of sympathetic inflammation, as a similar appearance has been noted in other forms of iritis. He, however, thinks it may have something to do with giant cell formation, though no definite connection between the two has been established. Occasionally the ciliary body and choroid were detached by cicatrization of the cyclitic exudation.

Those parts of the globe physiologically associated with the uvea were involved in the inflammation. The episclera was thickened and infiltrated with diffuse or circumscribed collections of round cells. The optic nerve and its coverings were also often involved, though not severely. When the round cell

infiltration was marked, it occurred in the region of the lamina cribrosa and diminished towards the brain. Some cases showed infiltration as far as the chiasma, but chiasmal infiltration was regarded by the author as being probably due to other disease of the brain and membranes. The infiltration into the nerve and sheaths was ascribed by the author to toxins produced in the posterior part of the globe and which were more concentrated near the lamina cribrosa.

The vitreous, when present, showed fine fibrillation and was free from cells. The retina was generally detached and secondarily atrophied. The detachment was generally due to shrinking of the vitreous. The anterior part of the retina was frequently involved in the granulation tissue derived from the iris and ciliary body. Inflammation of the retina was rare, and only occurred as a perivasculitis which was most marked near the optic disc. The papilla was at times swollen and showed severe infiltration of its connective tissue. The cornea—apart from changes due to injury and shrinking—showed little change beyond some increase of nuclei. The sclera often showed perivascular lymphangitis at the points of entrance of the anterior and posterior ciliary vessels. The sclera was at times nearly completely perforated by granulation tissue. The ciliary nerves were generally normal, though some cases showed some perineuritis, but no neuritis proper. This pathological picture of chronic inflammation of the uvea was the same in the sympathising as in the exciting eye.

The author gives special attention to 14 of these eyes in which giant cells were found. The giant cells were always associated with epithelioid cells. They were found in all parts of the eye, but were more common in the iris ciliary body and choroid. They were also observed in newly formed granulation tissue whether the latter was in the uvea or had extended beyond

that region. Their position in the granulating tissue was variable, being sometimes in the centre and at other times at the periphery. The giant cells were sometimes solitary and sometimes very numerous—as many as 100 being visible on one side. The characteristic order seen in tuberculosis was not seen in any of them. Epithelioid cells were often seen without giant cells. The size and shape of the giant cells were very variable, as was also the number of nuclei; of these there might be from 4 or 5 up to 15 or even more. Cells resembling the type of Langhans were seen in nearly every case, but they were not predominant. Giant cells were found in exciting and sympathising eyes, and even in a case of panophthalmitis which had caused sympathetic ophthalmia. In reference to the duration of inflammation required to produce giant cells, the earliest observed was five weeks after injury, but they were very numerous in cases examined two or three months after injury, and they were also found in a case of three years' duration. They occur as frequently in children as in adults. There was apparently no difference in the course and prognosis of sympathetic ophthalmia due to exciting uveitis with giant cells and those set up by an uveitis without them; in some of the cases the eyes were lost whilst in others good vision was retained.

As the result of examinations of 34 eyes removed for injury or ulcer with perforation, the author distinguishes two clinical groups:—

1. Associated with acute inflammation and in which enucleation was necessary in a few weeks.

2. Associated with chronic inflammation remaining the same for weeks, then getting less or subsiding, but recurring after months or years.

These correspond to the pathological groups:—

1. Purulent inflammation.

2. Fibrinoplastic inflammation.

In (2) all parts of the globe were not affected to the same degree. Inflammation starting from a corneal wound, was generally localised in the anterior part, being limited by the diaphragm consisting of the lens, iris, ciliary body and zonula,—and possibly because the lymph channels are directed forwards and away from the deeper structures of the globe. The posterior part of the globe generally remained free from inflammation, though slight retinal perivascularitis was observed by Peters. The prognosis as regards retention of the globe is good in these, and for practical purposes it should be remembered that excision should be delayed as long as possible, as in most cases the inflammation subsides and excision becomes unnecessary. When the diaphragm mentioned has been destroyed, or the posterior part of the globe has been directly infected, the inflammation at once becomes general and a panophthalmitis or a vitreous abscess is the result.

The histological changes in the *purulent cases* were characterised by a rich infiltration of the tissues by multinucleated cells, which were very closely packed together in the vitreous. The choroid was diseased, generally in the outer layers. The choriocapillaris was sometimes effected, but to a less extent than the intermediate and large blood-vessel layers. When the capillary layer was seriously involved, it had become swollen and homogeneous in appearance owing to the disappearance of the cells and nuclei. The retina in the neighbourhood of an abscess was thickened and infiltrated with round cells. The iris and ciliary body were infiltrated by pus corpuscles and showed a tendency to exudation in and on their tissue and loss of definition of the pigmentary and other cells. The anterior chamber when preserved often contained fibrin containing red blood corpuscles and leucocytes. The cornea and sclera showed no change beyond slight diffuse proli-

feration of nuclei. Occasionally the cornea was spontaneously perforated owing to purulent disintegration starting on the inner surface. The episclera was covered and infiltrated with round and purulent cells. The optic nerve was only rarely infiltrated with pus cells and generally only showed proliferation of nuclei. The ciliary nerves and vessels were generally normal. Even these cases occasionally contained giant cells, but whether as the result of foreign bodies or of some other and indefinite origin it was difficult to decide. Some had developed within eight days.

\*The changes observed in the *chronic fibrinoplastic inflammation* were loosening and infiltration with round cells of the episcleral tissue. The cornea was normal apart from deposits of uninucleated round cells on its posterior surface. The anterior chamber was generally partly filled with fibrinocellular deposit adherent to the anterior surface of the iris, and which generally filled the pupil and coloboma (when present). In older cases this had become transformed into dense connective tissue. The iris showed accumulation of round cells under the pigment epithelium or under the endothelium on the anterior surface. The vessel walls were often thickened and homogeneous. The ciliary body was similarly infiltrated by diffuse or circumscribed collections of round cells, and was covered by richly cellular exudation which on becoming organised had in many cases detached the ciliary body and choroid. The choroid was generally but slightly affected by diffuse and circumscribed round cell infiltrations which were confined to the outer layers, whilst the chorio-capillaris was not affected. The retina was not involved beyond a moderate perivascularitis near the disc, which was sometimes covered with an exudation rich in nuclei. The optic nerve showed some proliferation of nuclei of the supporting tissue; it was very rarely infiltrated with round cells. The intervaginal space was normal except for some proliferation of the endothelium. The ciliary vessels

and nerves were generally normal, but in exceptional cases they were surrounded by round cell infiltration. The vitreous was finely fibrillar in the centre and coarsely so at the periphery. Sometimes there was slight infiltration with round cells in the region of the ciliary body.

Whether this chronic uveitis has a separate origin from the panophthalmitis is doubtful. Schirmer is of opinion that the panophthalmitis is caused by the cocci of acute suppuration, whilst the chronic uveitis (the sole cause of sympathetic ophthalmia) is due to the hypothetical cause of sympathetic ophthalmia. He thus assumes a mixed infection. But it is known that pus organisms may cause chronic non-purulent inflammation when their virulence is diminished, and this may be the explanation of the production of the chronic uveitis in these cases.

The cases of *spontaneous* (non-traumatic) *uveitis* which were examined were characterised by accumulations of round or giant cells on the posterior surface of the cornea. These cells were produced by the iris and ciliary body equally; Descemet's membrane was only passively concerned. The iris and ciliary body were infiltrated with round cells, and to a less extent the choroid was generally infiltrated in the same way. The retina and the optic nerve were generally normal.

*Tuberculosis* of the iris, ciliary body, and choroid showed several marked appearances. The round cell infiltration was arranged in nodules which had no blood-vessels. The small peripheral cells were very closely packed. The epithelioid cells had considerably larger and paler nuclei. The giant cells were of the Langhans type and contained amorphous matter. In a few typical cases giant cells and caseation were not to be found, but epithelioid cells were never absent. In doubtful cases the nature of the nodule could only be decided by inoculations and special staining for tubercle bacilli. Two forms of

tuberculosis are recognised in the eye, viz.: (1) Diffuse and (2) circumscribed. The first finally affects all the tissues of the eye and leads to caeciation. In the second form solitary tubercle may appear in the iris, ciliary body or choroid. The process may remain restricted to its original site and become cured, or it may spread by contiguity and eventually set up a general infection. Spontaneous perforation of the globe, generally at the corneoscleral junction, is liable to result.

Miliary tubercle seems to be localised exclusively in the choroid in man, and does not show the development of large tubercle nodules, probably because of the early death of the patient.

*Syphilitic inflammation* was sometimes limited to the anterior or posterior part of the globe. In most cases both parts were affected. Apart from gummatous changes the appearances presented consisted of partly diffuse and partly nodular collections of round and epithelioid cells, and the formation of young and old connective tissue. Syphilitic iritis showed peri- and end-arteritis and nodules consisting of radially and centrally placed larger cells surrounded by a ring of round cells. These nodules were formed around the changed vessels and were considered fairly characteristic of syphilis, but not sufficiently so, without the history, clinical and other pathological observations, to be conclusive. Similar changes were observed in the choroid vessels, and these were inclined to spread into neighbouring tissues, and especially to the retina. Some of these areas resembled psammomata.

In reviewing the pathological changes which are observed after perforation of the eye, the author recognises three types of inflammation, viz., purulent, fibrinoplastic and serous. There is no pathological record of a case of serous inflammation.

In the purulent form the vitreous and the uvea are frequently pretty equally affected.

The vitreous is partly or completely permeated by pus corpuscles and the uvea and the exudation from it are impregnated by pus corpuscles. In panophthalmitis the tissue undergoes necrosis. In the fibrinoplastic form the uvea is permeated more or less by uninucleated round cells and the iris and ciliary body produce a fibrinous exudation containing uninucleated round cells which tend to become organised into fibrous tissue. There is never any necrosis of the tissue.

The subacute inflammation partakes of the character of these two types and forms a connecting link between them. The chronic changes may be due to the attenuated effects of the two organisms or may be independent of them. The type of inflammation which sets up sympathetic ophthalmia is always fibrinoplastic. Even in those cases in which sympathetic ophthalmia has followed an apparently purulent inflammation, it will be found that a fibrinoplastic uveitis was the real cause. This fibrinoplastic uveitis cannot, however, be histologically distinguished from traumatic fibrinoplastic inflammation which has not set up sympathetic ophthalmia. Taken relatively, the inflammatory appearances in simple traumatic uveitis are generally less extensive than in exciting eyes. Further, the choroid is often much less affected than the iris and ciliary body of the same eye; and the choroid is less extensively affected than that of an exciting eye. The exudation in exciting eyes is greater in amount, especially over the ciliary processes. It is rare to find round cell infiltration in the optic nerve in non-exciting uveitis. Finally, there is a distinct difference in the number of giant cells in the two cases. Giant cells were found in half the cases of sympathetic ophthalmia and only in one-fifth of the non-exciting eyes. The giant cells are much less numerous—generally solitary—in non-exciting eyes, and they were never found in the choroid by the author. In sympathetic uveitis they were found often in groups,

though sometimes solitarily, in the uveal tissue and in the newly-formed iridocyclitic organised tissue. It is possible that giant cells should be regarded as belonging to a typical picture of sympathetic ophthalmia; but definite proof of this is wanting. That these giant cells are not due to tubercle bacilli is shown by the following facts:—

1. The nodules in exciting eyes are not all non-vascular, but often have a blood-vessel in the centre.
2. The nodules often consist of round cells only and never, even in the most marked cases, show any caseous degeneration.
3. The typical picture of a tubercle nodule is often not found—the cells being arranged irregularly.
4. Experimental inoculations give negative results.
5. Attempts to demonstrate the presence of tubercle bacilli have been unsuccessful.

Giant cells have been found in:—

1. Sympathising and exciting eyes.
2. Subacute traumatic uveitis.
3. Chronic fibrinoplastic traumatic uveitis not followed by sympathetic ophthalmia.
4. Spontaneous iridocyclitis of unknown ætiology.
5. Tuberculosis.
6. Syphilis.
7. Cases of foreign bodies in the eye—e.g., hairs of plants and caterpillars, stones, cysticercus, bits of lens or capsule, cholesterol crystals, and even pus corpuscles.

### Infective Cyclitis (so-called sympathetic Ophthalmia)

BY

H. PERCY DUNN, F. R. C. S. ENG.,

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Time is always of service in the evolution of problems of science and in the department of ophthalmology time has come to our aid on many a notable occasion. The proper attitude to adopt when problems of great scientific import confront us is not to give them up because many vain efforts have been made to reveal them, but to hold our souls in patience, with the conviction that as time advances their solution will come. This may assuredly be said to be the case in respect to that disease which forms the subject of my lecture. So far its precise etiology has formed an insoluble problem in ophthalmological science, and I have chosen it for discussion to-day partly because of the great interest of the subject and partly by reason of the fact that it lends itself to speculative convictions which the knowledge that we already possess concerning it, to my mind, partly warrants.

But here let me crave indulgence for a brief digression in order to draw attention to what I believe to be an illogical conservatism pervading the department which I represent. I allude to the retention in the present day of many old time, obsolete expressions to be found in the terminology of ocular diseases. First, we often hear and read of the synonym "ciliary" blepharitis. Why "ciliary"? How is it possible to conceive of an inflammation of the lids without the follicles of the lashes being involved? Do dermatologists speak of "ciliary" dermatitis? Next, the "crystalline" lens. Why "crystalline"? Every one in these days understands what is meant when reference is made to the lens of the human eye. To define it, however by the adjective "crystalline" is suggestive that another lens exists in the human body, possi-

bly in the appendix or elsewhere, more particular reference to which would not be considered to be in good taste in polite society. True, there is a certain grandiloquence environing the expression which may have had something to do with its retention. Thus it enables an ophthalmic surgeon to say, "I performed an extraction operation of the crystalline lens for senile cataract," which statement no doubt, given with a due impressiveness of diction, would be greatly calculated to create an effect upon the mind of a layman. But suppose that the layman upon whom the operation was performed was an eminent physicist of an inquiring turn of mind. In such circumstances he might say to his surgeon, "I suppose when the lens is crystalline it does not require to be extracted. On the other hand, it appears to me that when it is cataractous it cannot be crystalline. I judge that this is the case from the fact that pure water possesses crystalline properties; nevertheless, I cannot conceive of the term 'crystalline' being applied to water which is muddy and opaque." And all that the surgeon could say in reply would be that custom had sanctioned the use of the word, no matter what the condition of the lens might be. Of course, the term "crystalline" has come down to us from the old anatomists, who spoke of the vitreous body, the crystalline body, and the aqueous body, referring to the vitreous, the lens, and the aqueous respectively. But it must have been someone long after the time of the ancients who introduced the term "crystalline" lens into the literature of ophthalmic science.

Next we come to the expression "phthisis bulbi." What does this mean? The natural inference to be drawn from such a term would be that the eye was the seat of general tuberculosis, or, to speak perhaps more correctly, was generally tuberculosis. As a matter of fact, however, there is no more tuberculosis in a phthisical eyeball than

there is transparency in a "crystalline" lens which is absolutely opaque from cataract. Whence, then, has this word "phthisis" been derived in this connexion? When or by whom it was first introduced I know not. But its employment in the present day is for the purpose of making a fanciful distinction between eyeballs which have passed into an atrophic condition as the result of panophthalmitis, as compared with those in which the nutrition has failed owing to some disturbance of the integrity of the ciliary region. It is evidently considered that such a distinction is not fanciful but requisite, because while atrophy in the former case is not liable to be followed by harm to the fellow-eye, on the other hand so-called sympathetic mischief may supervene when injury to the ciliary region is the cause of atrophy. Is it necessary to discuss this example of out-of-date ocular nomenclature any further? I think not, for it is not impossible to dispute that in these days the term "phthisis" in this connexion is misleading, unnecessary, even pedantic, and that it would be just as wise to speak of "appendicitis bulbi."

Again, what is meant by the word "strumous" as applied to certain ocular disease? There is nothing strumous in ocular surgery any more than there is nowadays in general surgery or general medicine. Thus it is scarcely needful to remark that the expressions "struma," "strumous," and "scrofulous" have become entirely obsolete and now possess no scientific significance.

What relevancy, however, have these remarks to the subject which I have ventured to bring under your notice this afternoon? I may hasten to explain that they have a close bearing upon that to which I shall afterwards claim your attention. Let me next proceed by referring to the large class to diseases known under the name of ophthalmia. What is the meaning of "ophthal-

mia"? says a writer in Quain's "Dictionary of Medicine" (1883) "is a general term which might be used to express any morbid condition of the eye, but which is restricted by custom to the forms of inflammation which originate in the superficial structures of the organ, such as the varieties of conjunctivitis, the phlyctenulæ which sometimes appear upon the cornea and give rise to shallow ulcers." That is to say catarrhal ophthalmia, thus inaccurately described, which is the simplest of all ocular diseases, has just the same signification from the point of view of nomenclature as so-called sympathetic ophthalmia, which in the older ways was the most destructive. And here I take leave of this question of ocular nomenclature. I have adduced, I think sufficient evidence to show that it is capable of much reorganisation and improvement.

So long ago as the latter part of the seventeenth century it was known that inflammatory changes in one eye could be followed by destructive inflammation of the other. From that time onwards the subject has attracted a great deal of attention. From the first it presented many difficulties, which difficulties in a sense remain, for although the etiology of this so-called sympathetic disease still exists as an unsolved problem, yet it is indisputable that the disease has undergone much modification compared with that observed by our forefathers. In 1835 a prize essay was published on the subject by von Ammon, in which he records several instances of what he describes as "diseased sympathy" occurring in healthy eyes following the development of traumatic iritis in eyes which had received some injury. Possibly, however, Demours, in 1818, was the first to give a detailed description of the disease; he narrated three cases of the kind which had come under his notice, and, based upon this experience, he expresses the opinion that the disease was one of the gravest in

practice and possibly beyond the resources of sciences. All previous observations, however, upon the subject were eclipsed by those of the celebrated ophthalmic surgeon Mackenzie who, in 1844, in his work on "Diseases of the Eye," added much to our knowledge of the disease. "It is," he says, "a very serious disease: indeed, it has generally proved, in the long run, intractable in our hands, and as it follows, and is in fact the result of, in one eye, previous mechanical injury which has already greatly impaired or destroyed the other, the treatment of it involves a heavy responsibility on the part of the practitioner." He gives a succinct and accurate account of the kind of injuries to an eye which would be likely to cause harm to the fellow organ. He discusses the limits of time during which the incidence of the disease may be anticipated and describes fully the onset, progress, and termination of the affection, so far as his experience of it went. "The local symptoms," he says, "of sympathetic ophthalmia are those of iritis, passing rapidly into amaurosis and atrophy of the eye." Again, he remarks, "the prognosis is so unfavourable that it is our duty to guard the patient who has suffered any severe injury of one eye against the exciting causes of sympathetic ophthalmia from the very first. When this disease is actually present even the most active treatment is generally ineffectual. Indeed, I have never seen an eye recover from sympathetic ophthalmia. Renewed attacks have generally terminated in extinguishing vision." The treatment upon which Mackenzie relied was "rest antiphlogistic-measures, and the use of mercury." "But these means," he further adds, "we have abundant proof, are not very successful." Practically hopeless, then, it would seem were the prospects in Mackenzie's day of saving an eye in which an attack of so-called sympathetic ophthalmic had developed and severe, indeed, must have been the ordeal of the treatment of the



disease both for surgeon and patient : for the surgeon owing to the painful anxiety arising from the failure of his efforts to combat the progress of the malady ; most of all, perhaps, for the patient from the repeated leechings, venesections, continuous mercurial salvation, as well as the other devices comprised in that hideous Inquisitorial therapeutic creation known as "antiphlogistic measures." What in those days must have been the feelings of the ophthalmic surgeon who after a simple extraction operation for cataract in one eye some weeks afterwards had to acknowledge that his patient was hopelessly blind in both owing to so-called sympathetic ophthalmia having followed an unsuccessful operation. Eight years latter, however, to the publication of Mackenzie's treatise a gleam of sunshine metaphorically pierced the gloom of this depressing condition of affairs. It was that furnished by the suggestion of the White Cooper that in cases of so-called sympathetic disease it might be advisable to enucleate the injured eye. Then two years later the same suggestion was strongly urged by Pritchard. He narrates a series of 20 cases of the disease concerning which, he says, "this series of cases, consisting of persons of both sexes who have met with different kinds of accidents, as cuts, punctures and rupture of the eye at all ages, but; in each instance in one eye, only, and in all of which incurable blindness of both eyes followed, is, I think, sufficient to convince any one of the peril arising from destruction of one eye and for the necessity of care in pronouncing an opinion as to the probable result of any such case. I believe the proper treatment to be that which I have recommended—namely, extirpation of the injured organ as soon as there are evidences of inflammation in the other. This requires further experience, but I should not hesitate to urge the operation upon any one who consulted me under these circumstances." Undeniably, it would have been best had the qualification comprised in

the latter sentence not been added by the author. Possibly had he emphatically insisted upon the absolute necessity of enucleation his opinion would have tended to impress his contemporaries with the urgency of its adoption. As we now know, by that means the patient was afforded the only chance of having the secondarily affected eye saved from destruction. In the present day enucleation of the exciting eye is the indispensable method of treatment. But how much more was this procedure necessary in the days of our forefathers, during which the disease exhibited, as the records show, an intensity, a virulence and destructiveness surpassing anything of the kind with which its incidence is now associated. Happily, however, with the lapse of time it came to be generally conceded that enucleation of the exciting eye was urgently called for in the treatment of so-called sympathetic ophthalmia, and then it was that the results of the treatment began to assume a more favourable and encouraging aspect. Nevertheless, out of this newly recognised method of procedure a tendency to exaggeration arose, fostered by the desire to avoid the incidence of the disease. Experience had long taught that so-called sympathetic ophthalmia usually followed wounds of the ciliary region. Therefore the opinion became current, "Given a case of wound of the ciliary region, why expose a patient to the risk of an attack of inflammation in the fellow eye? Far better to enucleate the injured organ at once, for, by this means, the integrity of the other will not be imperilled." Presumably in the days when this practice was followed many eyes were preserved from an attack of so-called sympathetic ophthalmia which otherwise would have been destroyed by its occurrence. At the same time, it must be conceded that were the same practice to be followed in these days many an eye would be sacrificed whose recovery would be possible with the retention of useful vision and without exposing the fellow organ to

the risk of secondary inflammation.

Before proceeding further in the discussion of the subject I desire to offer a few comments upon the expression "sympathetic ophthalmia." And first I would ask, Is it in strict accordance with modern pathology to speak of an inflammation as "sympathetic"? What is the pathology of sympathy? Can sympathy, so-called, be described and demonstrated as a concrete condition? We are aware of an emotional effect described as sympathy as exhibited by persons and animals. But it is difficult to understand how in such a sense sympathy can be displayed by inflamed tissues. As a matter of fact, when the cold, compassionless, unrelenting eye of science is turned upon the term "sympathetic ophthalmia" all the sympathy in it at once vanishes away. In proof thereof I may refer to the modern views held with respect to the etiology of so-called sympathetic ophthalmia: (1) that the disease commences in "the ciliary region of the injured eye and is caused by a specific micro-organism; and (2) that the micro-organism creates a toxin which is conveyed by continuity of tissue, presumably by the lymph channels to the ciliary region of the healthy eye, in which by its irritating presence it causes a severe form of irido-cyclitis. There is surely nothing ethereal, spiritual, emotional—sympathetic—in an inflammatory process which is directly excited by the irritation of a toxin. I submit, therefore, that the term "infective cyclitis" is more accurate for the purposes of nomenclature and is more in accord with the pathology of the disease than the two-fold inaccurate one sympathetic ophthalmia.

In reflecting upon the characteristics of infective cyclitis as met with by our forefathers, we cannot fail to be struck (1) by the frequency of its occurrence and (2) by the virulence of its attacks. In respect to both of these points there is an overwhelming

mass of evidence. But what are we in the position to say in the present day in regard thereto? Briefly, it can be asserted that the reverse is the case in each instance. So infrequent, indeed, has the disease become that even now we may almost describe it as a pathological curiosity. Six years ago in a lecture delivered in this College, subsequently published in *THE LANCET*, I pointed out how seldom it was that infective cyclitis was met with. I was gratified to find from letters received that other ophthalmic surgeons, who had taken the trouble to inquire into their hospital records of recent years, were able to confirm the accuracy of this view. Since the year 1885, when I joined the staff of this hospital, two cases only of this disease have been under treatment. In the one many years ago the patient was a little girl who was admitted with a cystoid cicatrix following a perforating wound in the lower and outer quadrant of the corneo-scleral junction of the right eye. The injured eye had been treated elsewhere and had done well. The projecting loop of cicatrised tissue being very unsightly was snipped off with scissors and subsequently infective cyclitis supervened. The case was not mine. The second case occurred as recently as July, 1903, and as the notes thereof illustrate the present characteristics of the disease it will not be without interest to narrate them.

The patient was a woman, aged 62 years. She came to the out-patient department on July 23rd, 1903, with the history that for some weeks she had only been able to distinguish light from darkness with the right eye. She stated that in May, 1901, she was operated upon for cataract in the left eye at a London ophthalmic hospital. Unfortunately the eye went wrong and no recovery of vision resulted. When, therefore, she came to the hospital she was practically blind. Examination of the left eye showed

a depressed linear cicatrix in the upper part of the corneo-scleral junction marking the situation of the section made for the extraction of the lens. Into this cicatrix the iris tissue had been dragged. The pupil was obliterated. The globe was slightly injected, tender on palpation, and tension was—3. With regard to the right eye the ciliary and conjunctival vessels were deeply injected. On Descemet's membrane were numerous punctate opacities. The aqueous was turbid, the pupil was contracted, and the usual signs of plastic iritis were present. Tension was normal and the vision equalled perception of light. The patient was advised to come into the hospital at once for enucleation of the left eye. She, however, declined. But four days later she returned and was admitted. On the following day, July 27th, enucleation was performed. On the 28th the right eye was in a condition of *statu quo*. She was ordered on admission hydrargyrum cum creta four grains twice a day, guttæ atropinæ two grains every four hours, and chinosol fomentations twice daily to the right eye. On the 29th the patient was able to count fingers at eight inches. The aqueous was clear, the pupil dilating a little in the upper part. On the 30th Descemet's membrane was clear off dotted opacities. The ciliary and conjunctival injection was almost gone. The pupil was irregular but of moderate size. She could count fingers at one yard. On August 8th the pupil was in the same condition as recorded in the previous note. The vision equalled about  $\frac{3}{80}$ . The patient was discharged. At the time of her discharge the patient was so satisfied with the improvement in her vision that she has not shown herself since. I am therefore unable to record the further history of the case.

Let me next briefly pass in review some of the evidence bearing upon the infective nature of this disease. Ever since the introduction of Listerism infective cyclitis has become more and more a vanishing patho-

logical entity. This is not due to the practice of over zeal on the part of ophthalmic surgeon in sacrificing wounded eyes in anticipation of the onset of the disease. On the contrary, at no time more than the present has conservative ocular surgery been so paramount or, I may add, so justified by the gratifying results with which it is attended. The obvious inference then, is that the present infrequency of the disease is directly due to the observance of the principles of Listerism. Furthermore, I think that the undoubted diminution in the virulence of infective cyclitis must also be attributed to the same beneficent influence. Not only are the attacks of the disease in the present day amenable to treatment but it is more the rule than the exception, as recorded cases have amply demonstrated, for good results to be obtained therefrom. The argument has been advanced that infective cyclitis is now a rare complication of cataract operations because surgeons exercise much more care in placing the position of their sections. This contention, however, has but little to recommend it. It might almost as equally be said that tetanus has vanished as an after-complication of operation wounds in general surgery because surgeons are more careful in their use of the scalpel. If the precise situation of a section for cataract extraction were the real cause of the rarity of infective cyclitis in the present day, how comes it that lacerated wound of the ciliary region will heal kindly without any such complication provided that they are treated with strict antiseptic precautions? The inference is indisputable that the only safe-guard against infective cyclitis is absolute antisepticism. Moreover, there is no reason for supposing that under such precautions the ciliary region or any other part of the eye will resent operative interference, or under normal conditions exhibits in these cases other changes than those which belong to natural processes of repair.

How, then, does it happen that infective cyclitis occurs? We are justified, I submit, in assuming that infection takes place either as the time of the infliction of the wound, operation or otherwise, or subsequently, before the processes of repair are completed. If we fully accept the infective theory of the disease another difficulty is smoothed out. A general belief prevails that so-called sympathetic ophthalmia and so-called sympathetic irritations are separate and distinct as morbid entities. It is not necessary here to discuss the reasons upon which this opinion is based. Suffice it, however, to say that this opinion has always seemed to me to be illogical and unsupported by any analogical facts. The so-called irritation can only be of infective origin and due to intermittent and small doses of toxin, insufficient to cause a full outbreak of the disease but yet sufficient to excite modified symptoms. To this hypothesis analogy from other diseases lends much support into the illustration of which, however, it is not necessary to enter.

I have now said enough to emphasise my belief in the possibility of infective cyclitis becoming an almost unknown disease or of remaining in so modified a form as to cause but little anxiety either to surgeon or to patient. By our acceptance of the infective theory, although, of course, it still lacks bacteriological confirmation, we are nevertheless placed in the position of knowing how successfully to avert and combat the disease — a disease, be it remembered, which by its virulence in former days consigned so many a hopeless patient to absolute blindness. Possibly a specific micro-organism of infective cyclitis may never be isolated, but what matters that when evidence so infallible leads to the sound induction of its presence and enables us to act accordingly? The failure so far to isolate it may be explained by the incompleteness of bacteriological technique. The conjunctival sac may be

described as the dumping-ground of the host of micro-organisms which are met with in the human body. Apart from those which it receives from without, as from wind and dust, dirty fingers, soiled handkerchiefs, contaminated water, towels, and coat sleeves, it is kept well supplied by cultivations from the nose and lacrymal sac, not to mention the possibility of another source of supply as furnished by disease of the neighbouring bones and inflammation of their sinuses. In view, then, of the conjunctival sac forming so favourable a medium for the cultivation of such a complexity of micro-organisms, and the impossibility of sterilising it, the wonder is not that a disease of the nature of infective cyclitis should occur, but that any intra-ocular wound or operation should escape septic contamination. The probability is that the best course to pursue is to rely more on the mechanical removal of micro-organisms than on any attempt to insure complete sterilisation of the conjunctival sac; it is then, for this reason that after each step in my intra-ocular operations the wound is thoroughly douched with a 1 in 400 solution of chinosol.

*The Lancet.*

### Endogenous Pneumococcic Infection of the Eye.

BY

P. LE GENDRE AND V. MORAX.

Recent observations have shown that ocular infections of external origin, such as conjunctivitis, suppurative keratitis and suppuration consecutive to wounds, are frequently produced by the pneumococcus. But endogenous ocular infection may also occur, the pneumococcus being conveyed to the eye by the circulation.

A woman, aged 47, was admitted to hospital on Jan. 17, in a delirious condition. At the beginning of the month she took to bed

with a feverish illness which was diagnosed as "pulmonary congestion," and on the day before admission she became delirious. At the apex of the left lung there were subcrepitant rales and an expiratory "souffle." She did not appear to see clearly but there were no signs of ocular inflammation. The delirium continued, the temperature was about  $104^{\circ}$ , and auscultation gave rise to a suspicion of infectious endocarditis. On the 19th there were diffuse cloudiness of the right cornea and pus in the anterior chamber. The conjunctival and episcleral tissue were injected. In the left eye the symptoms were less severe; there were slight iritis and fibrinous exudation in the field of the pupil. On the following days the condition of the left eye did not alter much, but the pus in the right anterior chamber increased considerably. On the 22nd the right eye was enucleated. Death occurred on the 25th.

**NECROPSY:**—In the whole extent of the left lung were very thick pleural adhesions. Apart from slight congestion and oedema no other microscopic pulmonary lesion was found. There were vegetative endocarditis of the mitral valve and infarcts in the kidneys and the spleen. In the enucleated eye purulent exudation was found in the retina, ciliary body, and anterior chamber. The pneumococcus in pure culture was found in the exudation. In the aqueous humour the pneumococci were as numerous as in a culture. The vegetations on the mitral valve were infiltrated with pneumococci. The heart's blood yielded the pneumococci in pure culture.

Evidently pulmonary infection preceded the pneumococcic endocarditis and pneumococcic septicaemia to which the patient succumbed. The clinical features of the iritis enabled the pneumococcic nature of the infection to be diagnosed before a bacteriological examination was made. In another case of pneumococcic iritis of uterine origin with

cerebral abscess observed by one of the writers, the iritis produced a similar fibrinous exudation in the pupil. In the pus of the cerebral abscess the pneumococcus was found in pure culture.

Cases of suppurative choroiditis in pneumonia have been published. In 1853 Arlt described the case of a child suffering from lobular pneumonia, who had metastatic meningeal abscesses and suppurative choroiditis. In 1874 Piechaud observed suppurative choroiditis with spontaneous perforation of the sclerotic in a woman who died from pneumonia with empyema. Natanson and Eversbusch have reported cases of pneumonia during influenza with irido-choroiditis, unilateral or bilateral. When the role of the pneumococcus in pneumonia was discovered it became possible to establish more precisely the connexion between the ocular affection and the pneumonia. In 1892 Herrnheiser first demonstrated the pneumococcus in the ocular pus. The patient was a man, aged 67, who was admitted to hospital on Mar. 25 for pulmonary trouble. On April 2 there were suppurative infiltration of both corneae and hypopyon. On the 10th there was left panophthalmitis with perforation of the corneae. In the right eye were slight infiltration of the corneae, iritis, hypopyon, and yellowish exudation on the posterior surface of the crystalline lens. Death took place 4 days later. The necropsy showed left fibrinous pneumonia, suppurative meningitis, and acute aortic endocarditis. Pneumococci were found in all the lesions.

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## THERAPEUTICS.

(Notes from the Therapeutic Gazette)

### Strychnia as an evacuant.

Dr. George E. Pettey M. D. in a paper read before the Alabama Medical Association

and published in the Therapeutic Gazette discusses the usefulness of strychnia as an evacuant. He thinks that constipation is oftener due to failure of peristalsis than to deficient secretion. Mercurial and vegetable cathartics, according to him, promote secretion and only indirectly excite peristalsis by reflex action. It seems to Dr. Pettey rather slow and awakened to depend on reflex irritation to produce peristalsis. When it can be excited by direct stimulation of the motor centre this direct stimulation, he thinks, can be accomplished by the administration of strychnia. If strychnia is combined with mercurial or other secretion producing agents each does its part and both secretion and peristalsis are induced. The dose of strychnia for this purpose he recommends varies from  $\frac{1}{30}$ th to  $\frac{1}{8}$ th grain given at intervals of two or three hours until four to six such doses are given.

### Eserine—a warming.

Dr. Grant Gould Spicer says that he, contemporaneously with others discovered the use of eserine in hay fever in 1902 and forthwith used it on his brother-in-law with good results. Thus encouraged he began to use it on his wife who was also suffering from hay asthma. After its use on one occasion he found his wife "deathly white, getting cold and covered with a clammy sweat. Her pulse was small and quick and her condition alarming. After the use of some restoratives she became all right. So, Dr. Grant Gould Spicer sounds a warming.

### Treatment of Broncho-pneumonia in children

The summary of an article which appeared in the medical news is published in the Therapeutic Gazette.

Here is a summary of how to cure a baby.

(1) Castor oil to clean the field of operations.

(2) Fresh air, cool and flowing. Regulate the temperature of air of the room inversely

to that of the child.

(3) Water, plenty, inside and outside. Temperature of the water as indicated by child's temperature.

(4) Quiet and rest. Tranquillizing influences about patient. Undisturbed sleep.

(5) Correct feeding. If there is need hot salines.

(6) As to antipyresis. Water—no coal tar products.

(7) Heart stimulants. Fresh air, hot foot baths. Relieving tympanitis and crowding.

*Drugs.* Whiskey and strychnine. Promote general comfort in every rational way.

The same paper gives directions *how to kill a baby with pneumonia.*

[This is only the American way of expressing disapproval of certain kind of treatment and is not to be taken as incitement to murder. Ed. A.]

Here are the directions for killing the baby with pneumonia.

Crib in a far corner of room with canopy over it. Steam kettle; gas stove (leaky tubing). Room at  $80^{\circ}$ F. Many gas jets burning. Friends in the room, also the pet dog. Chest tightly enveloped in waistcoat poultice. If child's temperature is  $105^{\circ}$ F. make a poultice thick, hot and tight. Blanket the windows, shut the doors. If these do not do it, give coal tar antipyretics and wait.

### The treatment of morphine habit by Hyoscine.

Dr. Buchanan in an article in the American Journal of insanity suggests the treatment of morphinism by Hyoscine. He recommends small doses to begin with  $\frac{1}{200}$ th grain gradually increased to  $\frac{1}{100}$ th grain.

### Useful drugs in the treatment of diseases in children.

An article from the Medical Press on this subject is discussed in the Therapeutic Gaz-

ette. The drugs discussed as highly useful in the treatment of diseases in children we give here in tabular form for the sake of convenience.

| <i>Drugs.</i> | <i>Diseases in which useful.</i>                                                                                                                                                                                                                              |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alcohol.      | Pneumonia, zymotic diarrhoea, severe cholera.                                                                                                                                                                                                                 |
| Antimony.     | Acute bronchial and pulmonary diseases, acute lobar pneumonia, acute laryngitis, and bronchitis, early stages of catarrhal pneumonia.                                                                                                                         |
| Arsenic.      | Chorea, asthma, lymphadenoma, leukinmia.                                                                                                                                                                                                                      |
| Belladonna.   | Acute broncho-pneumonia, in neurotic enuresis, whooping cough. Externally useful in appendicitis and non-tubercular peritonitis.                                                                                                                              |
| Mercury.      | In digestive troubles. In congenital syphilis. Tubercular peritonitis (injection). In meningitis sometimes useful both internal and external use.                                                                                                             |
| Salicylates.  | Acute rheumatism, mucous catarrh of intestines, popular urticaria, in bladder affections such as cystitis, in headaches, in acute tonsillitis, in acute summer diarrhoea, and with belladonna in appendicitis. The best salt to use is salicylate of bismuth. |
| Opium.        | (In small doses) colic, appendicitis, intussusception, and acute diarrhoea.                                                                                                                                                                                   |
| Chloral.      | Tetany, convulsions and allied conditions. (This is                                                                                                                                                                                                           |

the best hypnotic for children.)

Purgatives most useful are. Manna, small glycerine suppositories or injections, pilules of aloin and belladonna, cascara bonbons, mineral waters, etc.

#### Prevention of Blackwater fever.

It seems that the best way of preventing blackwater fever is not to expose oneself to its poison and to go away from the locality where the disease prevails.

[This is a very good suggestion. Similarly we have found that the best thing for the heat of Madras is to go away to the Hills. Ed. A.]

#### Treatment of Baldness.

[There are several prescriptions given for this. We don't know if any of them will be of any good. But those who are so disposed may try. Ed. A.]

(1) Wash in the morning with soft soap and apply with a brush an alcoholic lotion containing either.

- |                            |                         |
|----------------------------|-------------------------|
| (a) Salicylic acid         | $\frac{1}{2}$ per cent. |
| or                         |                         |
| (b) Tartaric acid          | 1 do.                   |
| or                         |                         |
| (c) Perchloride of mercury | $\frac{1}{10}$ do.      |
| or                         |                         |
| (d) Salol                  | $\frac{1}{4}$ do.       |
| or                         |                         |
| (e) Chrysophanic acid      | $\frac{1}{2}$ do.       |

This is to be followed by the application of the following:—

- |                     |                 |
|---------------------|-----------------|
| Oil of cade         | 10 parts.       |
| Cacao               | 10 "            |
| Benzoated lard      | 20 "            |
| Sulphide of mercury | 1 part.         |
| Ichthyol            | $\frac{1}{2}$ " |

(2) Apply the following:—

- |                   |           |
|-------------------|-----------|
| Chrisophanic acid | 30 parts. |
| Pyrogalllic acid  | 3 "       |
| Salicylic acid    | 5 "       |

|                     |          |
|---------------------|----------|
| Sulphur precipitate | 15 "     |
| Alcohol             | 150 "    |
| (3) Hydro-quinone   | 1 part.  |
| Salicylic acid      | 2 parts. |
| Sulphur precipitate | 2 "      |
| Resorcin            | 2 "      |
| Excipient           | 30 "     |

(4) If none of the above succeeds then friction with the following may be tried.

|                              |                  |
|------------------------------|------------------|
| Alcohol                      | 150 parts        |
| Coal tar                     | 50 "             |
| Ether                        | 50 "             |
| Aqua distillata              | 50 "             |
| Hydrochlorate of pilocarpine | 1 "              |
| Perchloride of mercury       | $\frac{3}{10}$ " |
| Salicylic acid               | $\frac{3}{10}$ " |

#### Ergot in Anaesthesia and Shock.

An article in the American Journal of obstetrics recommends hypodermic injection of ergot in the nausea and vomiting following the administration of chloroform. It is also recommended in shock. It is said to be especially beneficial in laparotomy cases.

#### Treatment of Trachoma.

Dr. Morton in an article in the Archives of Pediatrics discusses the treatment of trachoma. Of local applications he considers sulphate of copper the best. In regard to surgical operations Dr. Morton prefers simple expression without previous scarification.

#### Chloratone in Vomiting.

Dr. Hulton discusses this subject in the Liverpool Medico-chirurgical Journal. He has found chloratone useful in the vomiting of pregnancy, in the sickness accompanying the menstrual period in many girls, in sea sickness and in the stomach pain of neurotic origin. He has not tried it in vomiting due to grave organic diseases. He gives it in doses of 3 grains in cachets or a tablespoonful of a solution containing 4 grs. to ℥i.

#### Intra-spinal injection of Lysol in Cerebro-spinal Meningitis.

For this new treatment, we are told, we are indebted to Seager. The treatment consists in lumbar puncture and the withdrawal by aspiration of varying quantities of cerebrospinal fluid from the spinal canal. Artificial serum is then injected through the same syringe (left in situ) and then 9—12 C. M. of a 1 per cent. solution is injected through the same needle and then the instrument is withdrawn.

(The treatment is too heroic. Ed. A.)

#### Olive oil as a therapeutic agent.

This is recommended in large doses in chronic dysentery. It is also recommended as an adjunct to treatment in gastric ulcer.

[We may say here that olive oil has been found useful in painful galstones. Ed. A.]

#### Dionine as an analgesic in ocular cases.

This new drug is alleged to be more efficacious in allaying pain in deep seated inflammatory affections of the eye than either cocaine or holocaine. The strength in which it is recommended is 5 p. c. in solution.

#### Extract of Argemone Mexicana.

This extract is said to be very efficacious in the treatment of morphia habit. It is to be given in doses of 6 to 9 cubic centimetres four times a day.

[We have seen the juice of argemone mexicana used with good effect in the treatment of conjunctivitis. Ed. A.]

#### Subcutaneous injection of Camphor in Pulmonary Tuberculosis.

Walther Koch of Freiburg reports good results from the subcutaneous injection of camphor in pulmonary tuberculosis. He also reports good result from injection of camphor.

### Uses of Scopal Amine.

Scopal amine hydrobromate in doses of  $\frac{1}{100}$  gr. is alleged to be an excellent sedative in all cases of mental excitement and is said to have succeeded where morphia and chloral failed. It is particularly beneficial, we are told, in cases of delirium tremens.

### Abortive treatment of furnucules.

A solution containing 4 grammes of Iodine to 10 grammes of acetone is said to be useful in destroying furnucules. The nodules are touched with this solution and they abort within 24 hours. Open wounds are not to be touched with this.

### Intra-tracheal injections of Eucalyptol in Pulmonary Tuberculosis and Chronic Laryngitis.

As the result of experience based on the treatment of 19 cases Antony in the *Archives de Medecine et de Pharmacie Militaires*, comes to the conclusion that the use of intra-tracheal injections of eucalyptol in certain cases of laryngitis and in the majority of cases of pulmonary tuberculosis is extremely beneficial.

[The method of intra-tracheal injections in pulmonary tuberculosis was suggested by the late Sir Thomas Grainger Stewart nearly 15 years ago and we have tried it in a large number of cases with fairly good results. How an intra-tracheal injection could benefit laryngitis is beyond our comprehension unless the intra-tracheal injection aborted into an intra-laryngeal one. Ed. A.]

### Hot Water Injections as a Substitute for Nutrient Enemata in Gastric Ulcer

BY

W. PASTEUR, M.D., F.R.C.P.

For the past 18 months the writer has treated all cases of gastric ulcer requiring rectal feeding by enemata of plain water at

the temperature of the body with satisfactory results. He compares the results obtained by plain water with those of beef-tea, milk, eggs, starch and the many other foodstuffs which are employed in concocting the 4 or 6 oz. enema in use. It is generally held that the rectum is capable of absorbing well (1) peptone; (2) white of egg, especially with salt added; (3) raw beef juice; and (4) starch and sugar and, to a less extent, milk proteids and gelatin. Patients live on this method of alimentation in comparative comfort for several weeks. But the comfort is only comparative. Relief from gastric pain and vomiting is usually prompt, but soon other symptoms, attributable mainly to the rectal feeding, appear. Of these the first and the most important is thirst. Thirst is not surprising seeing that the total amount of fluid given per rectum in the 24 hours varies from 16 to 40 oz., utmost. Thirst is usually relieved by allowing the patient to sip a little hot water from time to time, or to suck ice, or from half a pint to a pint of warm water is injected into the rectum once or twice in the 24 hours. This last method is the best but it has the drawback of increasing the total number of enemata and thereby the risk of rectal intolerance. Ice by the mouth should be avoided. It often fails to quench the thirst and it is difficult to limit the amount taken. The writer has long since given up the use of ice in the treatment of gastric ulcer except as an icebag over the epigastrium, suspended from a cradle so as to insure the lightest possible contact, for the relief of pain. Sipping hot water undoubtedly relieves thirst in some cases, but the primary object is, so far as possible, to secure physiological rest for the stomach. This is best achieved by giving nothing by the mouth for the first few days, at all events, and this can be done only by administering a sufficient quantity of water per rectum to prevent thirst. Another symptom which occurs in the course of a few days, when enemata of beef-tea are given,

is an unpleasant taste of beef-tea in the mouth not infrequently associated with nausea. This symptom is sometimes very distressing.

By substituting 10 oz. enemata of plain water at a temperature of 100° F. for the smaller nutrient enema at present in general use, thirst and the unpleasant taste in the mouth may in the majority of cases be prevented. Since the plain water enemata have been adopted the patients have been more comfortable than under the nutrient enemata. Their general condition is at least as good. It is a good plan to begin with a 5 or 6 oz. enema, increasing the bulk each time by 1 oz. until 10 oz. are easily retained. The enemata are given every 4 or 6 hours according to circumstances. In most cases it is possible to supplement the enemata by giving small quantities of peptonised milk by the mouth before the end of a week, but in several instances the patients have had nothing by the mouth for 10 days or a fortnight, and in 1 or 2 cases for nearly 3 weeks, without making any complaint or giving any indication that they were any the worse for their prolonged abstinence. Thus the method advocated gives results at least as good as the ordinary nutrient enemata, and is far simpler and more tolerable for the patient.

(The Medical Review.)

### The Treatment of Gastric and Duodenal Ulcer, Hyperchlorhydria, Spastic and Organic Pyloric Stenosis, and the Resulting Gastric Dilatation with Large Doses of Olive Oil.

BY

P. COHNHEIM.

Cases of gastric dilatation which are due, not to organic obstruction, but to pyloric spasm secondary to an ulcer, fissure, or erosion, may be cured or greatly improved by the introduction of large quantities of

olive oil through the stomach tube. About  $3\frac{1}{2}$  to  $5\frac{1}{2}$  oz. (100 to 150 c. c.) of warmed oil are introduced when the stomach is empty. In organic stenosis, and at first in spastic cases, previous irrigation of the stomach is required. If, nevertheless, pain recurs later in the day, another 50 c. c. of oil should be given before bedtime. A patient who previously had such pain every night that she was obliged to rise and empty the stomach with the tube, slept soundly the night through after taking oil before bedtime. Organic pyloric stenosis, with secondary gastrectasy also improve so that the patients are free from troubles if they lead a careful life. The oil acts mechanically as a lubricant, so that even solids glide by the altered pylorus. Cases of incomplete pyloric and duodenal stenosis, which are characterised by continuous hypersecretion, and the occurrence of pyloric spasm several hours after meals, are also cured or improved. In carcinomatous stenosis oil prevents or alleviates pyloric spasm. If patients prefer it the oil may be drunk instead of passed through a tube. Cases of pyloric ulcer, with or without hyperchlorhydria, and with colic-like pain 1 to 4 hours after food, are cured by olive oil or almond oil emulsion if there are no complications, such as perigastritis. The oil or emulsion may be given by the tube, or drunk  $\frac{1}{2}$  to one hour before food: the doses are, before breakfast a wineglassful, at mid-day and in the evening 2 tablespoonfuls. Almond oil emulsion should be freshly prepared by rubbing up a tablespoonful of sweet almond in a mortar, pouring a teacupful of boiling water over the powder, and passing the mixture through a fine sieve. Sufficient water is added to make about 8 oz. of emulsion, which is drunk warm and sweetened half an hour before meals. The almond oil emulsion should be reserved for slight or the convalescent stage of severe cases. Even in extreme pyloric stenosis oil enters the duodenum and is absorbed. If not only acts locally, by relieving pain and spasm,



but improves the general condition. Unless rancid it never produces eructations or diarrhoea. It is useless in purely nervous or hysterical spasm. The symptoms of pyloric obstruction are frequently so relieved that an apparently inevitable operation becomes unnecessary. In early cases oil may prevent the occurrence of secondary gastric dilatation. Or it may be given after disappearance of symptoms to prevent relapses. The treatment should be continued during several weeks in cases of pylorospastic gastric dilatation. The diet should be regulated, and all vegetables given as purees.—

*Zeitschrift f. Klin. Med.*, 52 Bd., 1 u. 2 Heft., p. 110.

### Post-mortem Examinations of the Soldiers killed in the War.

#### Evidence of Russian Atrocity.

The *Official Gazette* of Monday contains the following statement of post-mortem examinations of soldiers killed in the war :—

##### No. 1.

TOJIRO KATSUKI, aged 27 years 2 months, first class infantry private on the First Reserve.

The corpse was discovered at Likiapaotsz', about 13 miles north of Saimachi, Shingking province, China, where our army had repulsed the enemy's attack. The result of the examination is as follows :—

1. Posture of the corpse :—The corpse had been buried together with that of Tanimatsu Tanidokoro, below a peach tree on the southern slope of the height of Yangkiapaotsz' of the Shangkwamen mountains on the northern side of the road leading from Tatientsz' to Siaoshi. (It is presumed that the burial was due to the good-will of the natives. A paper with the Chinese inscription, "Tomb of two Japanese soldiers; June 22," was posted on the tree.) The body was found by the party searching for

our killed and wounded after the battle. The eyelids and lips were partly open but the teeth were tightly set, and the fingers clenched.

##### 2. Feature of the wounds :—

1st wound : a blind shot in the head.

2nd wound : a thrust in the cheek.

3rd wound : a thrust in the shoulder blade.

4th wound : a thrust in the abdomen.

The bullet which caused the first wound entered from above the left ear and the place of egress cannot be seen, the bullet remaining deeply buried in the brain. The aperture of the wound is clear, as large as the tip of the small finger, and covered with coagulated blood. The head and neck are besmeared abundantly with coagulated blood, showing that the wound bled profusely at the time of its infliction.

The second wound is located in the middle of the left upper jaw-bone. Its size is as large as an egg, and presents the shape of a regular ellipse. The brim of the wound is clean-cut, and the skin, muscle, and a portion of the upper jaw-bone, corresponding to the wound, are missing. The wound presents a cavity, at the bottom of which the upper jaw-bone is exposed. The wound appears to have been inflicted by a downward bayonet thrust with strong force, whilst the wounded soldier was lying with his face upward-turned, the bayonet being afterwards withdrawn.

The third wound is just below the right shoulder blade. It is as large as the tip of the thumb, and the point of egress of the thrust is not to be seen. The cavity of the wound is obliquely turned inward and downward, and the brim of the wound conspicuously mutilated. The severed tissue adheres to the wound. It appears as if the wound had been inflicted by thrusting a short bayonet from between the right hand and the neck of the wounded man who was lying with his

face turned downward, and by revolving the weapon.

The fourth wound is located 5 centimetres to the right of the white line below the navel. The brim of the wound is clean-cut and its size is an ellipse 5 centimetres long and 4 centimetres wide. The intestines exposed at the mouth of the wound, and it appears as if the wound had been caused by thrusting a sharp blade perpendicularly downwards on the wounded who was lying on his back, and by pressing the thrust downwards.

3. Conclusion :—The wounded lost consciousness on receipt of first wound. The second, third and fourth wounds were then inflicted, killing the man effectively.

TOKIJIRO OHIRA,

• Second Class Surgeon of the Army.  
July 5, 1904.

##### No. 2.

TORAMATSU HIRAKAWA, aged 25 years 4 months, Infantry Sergeant-Major of the First Reserve.

The corpse was discovered at Likiapaotsz, about 13 miles north of Saimachi, Shingking province, China, where our army had repulsed the enemy's attack. The result of the examination is as follows :—

1. Posture of the corpse :—The body was lying, with the face turned up, at the foot of a mountain at the south-eastern extremity of Likiapaotsz'. The feet were turned towards the enemy, the eyelids and lips were partly opened, but the upper and lower teeth were firmly closed. The left hand clenched the grass and the right hand a lump of earth. The middle of the lower thighs was enclosed with a flannel belt, belonging to the soldier, and in its midst a white wooden bar measuring 10 centimetres in diameter was thrust. At the time of the examination, however, the mark of the binding was not impressed on the thighs.

##### 2. Feature of the wounds :—

1st wound : a thrust in the left thigh.

2nd wound : a thrust in the right thigh.

The first wound exists in the inner brim of the tailor's muscle of the left thigh, and the egress of the thrust is not to be seen. The aperture of the wound presents the shape of an ellipse, 5 centimetres long and 3 centimetres wide. Its brim is clean-cut, the mouth of the wound gaping, and an amount of fat and muscular tissue is protruding, showing that the wound was caused by the in-thrust of a blade. The left trouser leg and underwear are completely soaked with blood, and the ground close to the corpse is bespattered with blood, showing that the corpse bled abundantly.

The second wound shows a stab in the inner rear of the middle of the right thigh. Its size is as large as the tip of the thumb, and shaped like an irregular triangle. The tissue corresponding to the wound is severed and adheres round the wound, as if it had been drawn out with a blade. The egress of the stab exists at the outside back of the middle of the thigh. Its size is as large as the tip of the small finger, and presents an irregular circle. The mouths of this wound are clean, and the artery seems not to have been injured. The trouser leg and underwear are only partly besmeared, and the bleeding seems less than in the case of the first wound.

3. Conclusion :—The enemy taking advantage of the disabled condition of the soldier, due to the second wound, had tied the lower thigh and tried to carry away the wounded man. On the feat being found impracticable, the enemy inflicted the first wound, cutting the artery and killing the man.

TAKETARO OHIRA,

Second Class Surgeon of the Army.  
July 5, 1904.

## No. 3.

TOICHI TANAKA, aged 26 years 4 months, 2nd class private of the First Reserve Infantry.

The corpse was discovered at Likiapaotsz', 13 miles north of Saimachi Shingking province, China, where our army had repulsed the enemy's attack. The result of the examination is as follows:—

1. Posture of the corpse:—The body was lying in the thick wood on the left side of the road in the north eastern extremity of Likiapaotsz', with the face up-turned and with the feet in the direction of the enemy, a vine being tied around the neck of the body. The upper limbs were extended to the right and left, as were also the lower limbs. The eyes were closed and the lips partly opened, but the teeth were tightly clenched.

## 2. Feature of the wounds:—

1st wound: a shot through the face.

2nd wound: a thrust in the head.

3rd wound: a cut on the right fourth finger.

The first wound was inflicted by the bullet which entered on the dividing line of the upper lip and issued in front of the left ear angle. Both apertures are clear, as large as a pea, and covered with coagulated blood. The exit hole is slightly larger than the entrance, and the bullet seems to have grazed the bone. Around the wounds the coagulated blood adheres to the face abundantly, and the spots of blood are numerous.

The second wound has its in-thrust at the frontal border of the sternocleido-mastoideus at the centre of the left side of the neck. The mouth of the wound presents the shape of an irregular triangle, and is as large as the tip of the thumb. A portion of the tissue corresponding to the wound is wanting and the remainder is adhering to the brim

of the wound. The bleeding seems to have been abundant. It appears as if the wound had been inflicted by the thrust of a bayonet. The other end of the pierced wound is on the opposite side of the neck, a little lower than the first wound. The cut is as large as the tip of the small finger and presents the shape of an irregular circle, the brim of the wound being clean.

The third wound is the cutting off of the right fourth finger (the ring finger in Japan) at the second joint. The section is cleanly made and the third finger is slightly grazed. No trace of bleeding is observed in the surface of the wound of the fourth finger, the wound presumably having been inflicted after the man had expired.

3. Conclusion:—The enemy attempted to drag the body, which had become unconscious owing to the first wound, by tying the vine around the neck. Finding that impossible, the enemy killed the man by inflicting the second wound and cutting the artery in the neck. The third wound was inflicted after death.

TAKETARO OHIRA,

*Second Class Surgeon of the Army.*

July 5, 1904.

## No. 4.

SEIJI OCHIAI, 2nd class private of Infantry.

The corpse was discovered at 11 a.m. on the 3rd July, 1904, by a certain infantry regiment reconnoitering in the direction of Lanwo, and on its being carried to the rear at Chengbaichi, I examined it:—

1. The corpse was clothed with summer suit garters and shoes. The coat and shirts were torn in different directions, and soaked with blood. The body was swarming with flies and was badly swollen. Life does not appear to have been extinct longer than 24 hours.

2. The wounds are inflicted on the face and breast. The wound on the latter was

caused by a shot, piercing from the hollow below the right collar bone to centre of the inner side of the shoulder blade, and there are traces of abundant bleeding. Probably the wound severed the artery behind the collar bone and proved fatal. The face is covered with coagulated blood, and on the left brow and left cheek bone, there are traces of an attempt to intentionally tear off the skin of the face. A horrible sight is presented by the gouging out of the left eyeball, which seems to have been effected whilst the blood was normally circulating.

3. The right eye was uninjured, but is not closed. The teeth are clenched, and the limbs extended and stiff. The trunk and limbs have sustained no wounds beyond those mentioned above.

I beg to submit the above report to you.

MICHIYAKA ENDO,

*First Class Surgeon of the Army.*

July 4, 1904.

## No. 5.

TORAMATSU TANIDOKORO, 2nd class private of the First Reserve Infantry.

The corpse was discovered at Likiapaotsz', 13 miles north of Saimachi, Shingking province, China, where the enemy was repulsed by our army. The result of the examination is as follows:—

1. Posture of the corpse: The corpse had been buried, together with the remains of Tojiro Katsuki, below a peach tree on the southern slope of the height of Yangkia-paotsz' at Shangkwanshanshan, on the northern side of the road leading from Tatients' to Siao-shi. (The burial was probably due to the good-will of the natives, and a paper bearing the Chinese inscription. "Tomb of two Japanese soldiers; June 22," had been posted on the peach tree.) The corpse was discovered after the battle by the party searching for the wounded and killed. The eyes were closed and the mouth

was shut. The hands and fingers were stiff and crooked.

## 2. Feature of the wounds:—

1st wound: a blind shot in the abdomen.

2nd wound: a thrust at the pit of the stomach.

The first wound has the in-thrust at a place 6 centimetres above the right of the navel. Its size is as large as the tip of the small finger, and the wound is clean. The bullet entered deep into the abdomen and stopped at the back wall of the peritoneum. The mouth of the wound emitted a small amount of blood.

The second wound exists right below the breast bone and the in-thrust was inflicted obliquely. The wound presents the shape of an ellipse, about 3 centimetres long. The brim of the wound was clean-cut, and the bleeding slight. The wound reaches deeply into breast cavity, injuring the heart and lungs.

3. Conclusion:—The enemy is judged to have killed the man, who was disabled by the first wound, by inflicting the second wound.

TAKETARO OTAKE,

*Second Class Surgeon of the Army.*

July 5, 1904.

(*Japan Times.*)

## Books Reviewed.

We have received from Messrs. Hilton & Co. of Calcutta a copy of a 'Treatise on Materia Medica and Therapeutics' by the late Dr. R. Ghosh, edited by Lt.-Colonel C. P. Lukis, Officiating Professor of Materia Medica, Calcutta Medical College. The untimely death of the author, Dr. R. Ghosh, before the work was published necessitated the kind and chivalrous help of Lt.-Col. Lukis in editing the work and passing it through the press. In its pre-

sent form the book seems to be an excellent and up to date one which will be of use to the Student's and practitioners in this Country. Dr. Ghosh's original observations based on his long experience in the treatment of diseases in the tropics cannot fail to be of immense help to those who have to treat diseases peculiar to the tropics. We welcome this work of an Indian author which is lucid, thorough and accurate and can confidently recommend it to Medical students and practitioners in this country. The price of the book is Rs. 4-8-0 and Messrs. Hilton & Co., 109, College Street, Calcutta are the publishers.

#### How to invest your small savings.

We have been requested by the Postmaster General to give publicity to the following new postal rules and we do so with great pleasure. The post office savings bank has been a great boon to the poorer class of professional men and public servants in this country. And the new departure in helping to invest the small capital saved up by that class of people in a safe and secure manner will considerably enhance the benefit already conferred on the poor people by the establishment of the savings bank. As these new rules will be of interest to a large number of our readers who are professional men, with moderate incomes, we reproduce the rules here in the form in which they were sent to us by the Postmaster-General.

Under the existing rules dealing with investments in Government paper made through the agency of the Post Office, Government paper of the nominal value of Rs. 100, or any multiple thereof not exceeding Rs. 1,000, may be purchased by any person, whether a depositor in the Post Office Savings Bank or not, in any

one year; and the maximum nominal value of the paper which may be purchased through the Post Office and held at one time is limited to Rs. 3,000.

2. With effect from the 1st August, 1904, it has been decided to relax the restrictions which these rules impose and to amend the rules with the object of affording greater facilities for such investments, and of rendering them more generally popular. The chief changes which have been effected by the new rules are:—

(1) Sums in whole rupees, not being less than Rs. 10, may be tendered for investment in Government paper through the agency of the Post Office, subject to the maximum limits prescribed in the rules.

(2) No fees, commission, or brokerage of any kind will be charged for the purchase, sale, safe custody, or delivery out of custody of Government securities purchased through the Post Office.

(3) No income-tax will be levied upon the interest derived from such securities, so long as they remain in the custody of the Controller-General.

(4) The maximum amount which may be invested through the Post Office has been increased to Rs. 5,000 in the case of an adult, and to Rs. 4,000 in the case of a minor.

3. Further particulars regarding the new rules can be ascertained on application from the local post office.

A. U. FANSHAWE,

Director-General of the Post Office of India.  
SIMLA, The 30th May, 1904.

# The Antiseptic.

Vol. I.]

NOVEMBER, 1904.

No. 7.  
Annual Subscription Rs. 5.

## Original Article.

to raise his head and thorax in order to feel easier.

### \* ORTHOPNŒA.

BY

HERBERT FRENCH, M. D. (OXON.),  
M. R. C. P. (LOND.),  
Medical Registrar, Guy's Hospital, London.

### INTRODUCTION.

ORTHOPNŒA is a descriptive term, expressing, in one word, a symptom or group of symptoms which constitute a well-known clinical condition. Difficulty in breathing, or dyspnœa, is not necessarily associated with orthopnœa, though it frequently is; rapidity of breathing may occur without orthopnœa, as is well seen in many patients suffering from lobar pneumonia; orthopnœa may occur without either dyspnœa or rapidity of breathing, though it may be accompanied by either or by both; there may be cyanosis from deficient oxygenation of the blood, there may be pain, precordial or other, but there may be neither. The essential point of orthopnœa is that the patient is unable to lie down at full length and yet breathe comfortably. When lying at full length he feels oppressed, is distressed, has a feeling of impending suffocation, and is obliged

### Degrees of Severity.

There are all degrees of this necessity to have the head and shoulder raised to make breathing easier. There are patients who feel easier with three pillows instead of two; who could not sleep at all at night were they to lie flat, but who, with three pillows to support them, sleep long and soundly. There are others who require four pillows; others, five; there are worse cases where the only position possible is sitting bolt upright or even bending a little forward. Even such completely orthopnœic patients shew degrees of illness; every physician is familiar with the patient who has not been able to sleep in bed for weeks or months, but who has had more or less comfortable dozes as he sat upright in a tall-backed easy chair; whilst he has seen others, in the last stages of bad heart disease with failing compensation, who were quite unable to sleep at all, sitting upright because to lie down was an impossibility, yet even in the upright sitting posture panting and gasping for breath, dozing for a moment out of sheer exhaustion, but waking with a start and increased panting the moment the head fell forward or to one side.

\* Specially contributed to 'The Antiseptic.'

When every transitional stage may be thus recognised from orthopnoea at all to complete orthopnoea without relief, it is quite arbitrary to divide cases into groups according to their severity. Nevertheless, the prognosis is so much worse in the severer than in the milder cases, that some attempt to measure the amount of orthopnoea is useful. It allows of comparison of one patient's condition with another's, and of a patient's condition on one day with that on the next, as a measure of his progress for better or for worse. Three groups may thus be made:—

First, *partial orthopnoea*, including those cases where the patient needs but partial propping up, short of being quite upright in bed; and the various minor stages of this partial orthopnoea may readily be expressed by the number of ordinary pillows he requires. Thus, "a three-pillow orthopnoea," "a four-pillow orthopnoea," or "a five-pillow orthopnoea."

Secondly, *complete orthopnoea with relief*: including those cases where sleep is impossible except propped sitting upright; but in which such propping gives considerable relief to the patient's distress.

Thirdly, *complete orthopnoea without relief*: that is to say, those cases in which the patient cannot exist at all except when sitting upright, and yet even in this position is still markedly distressed.

#### Conditions in which Orthopnoea occurs.

Just as jaundice is not a diagnosis, but a symptom which is common to a very large number of different diseases, so is orthopnoea a symptom occurring in a host of different maladies. When the

underlying pathology of this particular symptom comes to be discussed below, it will be seen that its various causes are in reality but few; but at first sight this is not evident. Without attempting to enumerate every condition in which it has been found, the following pass through the mind as being fairly common:—

- Chronic bronchitis and emphysema.
- Granular kidney with heart failure.
- Mitral stenosis with failing compensation.
- Angina pectoris, whatever the cause.
- Adherent pericardium with a big dilated heart.
- Aortic disease with a big heart and dilatation.
- Alcoholic heart disease.
- Fatty heart disease, whether due to infiltration or to actual degeneration.
- Acute capillary bronchitis.
- Asthma, spasmodic: during a spasm.
- Asthma, bronchitic.
- Asthma, cardiac.
- Fibroid heart disease.
- Laryngeal affections with obstruction: whether inflammatory, or due to spasm, to paralysis, to foreign body, to papilloma or to growth.
- Fibroid lung and bronchiectasis, if advanced: whatever the cause.
- Pleuritic effusions, if large; whether serous or purulent.
- Acutely dilated stomach, as in many cases of flatulent dyspepsia.
- Great abdominal distension from any cause, such as ascites, tympanites, tumour.
- Acute oedema of the lungs in the terminal stages of many illnesses.
- Mediastinal new growth.
- Thoracic aneurysm.

#### GROUP II.

*Cases in which the respiratory paths are free, but in which there is a tumour within the thorax.*

This group includes patients suffering from mediastinal new growth, from thoracic aortic aneurysm, or from enormously dilated and hypertrophied hearts. The pathology of the orthopnoea in these cases is entirely different from that of either Group I or of Group III; it depends on the physical measurements of the chest cavity. When a person is lying down, the obliquity of the ribs is great, and the antero-posterior distance between the sternum in front and the vertebræ behind is at its smallest. On sitting up, the sterno-vertebral measurement is increased in varying degree in different chests, but it is always increased, and upon an average by something like one-third to one-half an inch. This being so, any patient who has an adventitious pathological mass to accommodate within his thorax, will give that mass, whether it be a large aneurysm, a huge heart, or a neoplasm, as much additional room as he can. This he will do by sitting up instead of lying down. A small aneurysm, not obstructing a bronchus, will therefore not cause orthopnoea; a large one will, owing to its bulk. Possibly the orthopnoea of some cases of aortic disease is due to a similar cause, namely, an attempt to give increased room in the thorax for the greatly increased bulk of heart. The posture of a patient suffering from a large thoracic aneurysm, sitting in bed with his knees drawn up, and his head leaning forward over them, supported on his hands, which in turn rest upon his knees, is a well-known clinical picture.

This list might be multiplied no doubt; but sufficient examples have been given to indicate how varied are the conditions of which orthopnoea may be a symptom. It by no means follows, however, that there are as many varieties of orthopnoea as there are of conditions which lead to it; and if a symptom is to be of use to the physician in his treatment of a patient, he must endeavour to have in his mind a clear idea, not merely of the disease which causes it, but also of the way in which the symptom is brought about. This entails a knowledge of the

#### General Pathology of Orthopnoea,

and a little examination will, I think, reduce the varieties of orthopnoea from chaos to three main groups.

#### GROUP I.

*Cases in which there is actual obstruction to the free ingress and egress of air.*

The pathology of such cases consists in the necessity of using every accessory muscle of respiration in order to get air in and out past the obstruction. The diaphragm must not be impeded in its action by the pressure of the liver up against it; the arms will often be fixed by clutching the sides of the bed with the hands so that the shoulder girdle muscles will have full play in helping to move the ribs; and the patient may even get beyond the position of orthopnoea in a sitting posture: he may stand holding on to the foot of the bed, the mantelpiece, or other fixed support, panting for breath, cyanosed and distressed: a clinical picture very different from the other two groups. It includes all cases of severe laryngeal obstruction, together with cases of spasmodic asthma.

## GROUP III.

*Cases in which the orthopnoea is due to dilatation of the right side of the heart.*

This is the most widespread group of the three, and by itself accounts for the majority of cases of orthopnoea. Dilatation of the right side of the heart may be an additional factor in producing the orthopnoea in Groups I and II also; so that, broadly speaking, right-sided cardiac dilatation is the most patent of all causes of orthopnoea. A word or two as to the mode of production of orthopnoea from this cause may be needed.

Orthopnoea is seldom due to lung trouble by itself. Obstruction to the larynx will cause breathlessness, as has been pointed out, but lung consolidation, lung inflammation, lung trouble in general, will not cause orthopnoea unless it first give rise to right-sided heart dilatation. Consider all the cases of lobar pneumonia that one sees; how many have orthopnoea? The majority will be breathing rapidly, but lying at full length; the pneumonia may affect two lobes, and yet the patient not need to sit up to breathe. The extent of lung involved is not the criterion of how much orthopnoea there will be; rather is the condition of the heart, and those patients with pneumonia who are obliged to be propped up to breathe are those in whom percussion shews the heart to be dilated.

Why is mitral stenosis the commonest of the single valve lesions of the heart to give rise to orthopnoea? Because it, above all others, throws the greatest strain upon the right ventricle and auricle, causing their dilatation: evidence of which is afforded by the deep cardiac dulness which increased upwards to the second left rib

or higher, and to the right for more than a finger's breadth to the right of the sternum. The increased pressure against which the right ventricle is working is shewn by the accentuated pulmonary second sound that so commonly accompanies mitral stenosis.

Why do other forms of heart disease cause orthopnoea? In all it is a sign of heart failure, less or more. In some cases the additional factor of increased bulk of heart requiring increased antero-posterior diameter of the chest for its accommodation plays a part, no doubt, but the orthopnoea increases as the right ventricle fails to do its work.

Why do emphysema, granular kidney, fibroid lung and bronchiectasis, cause orthopnoea? They do not do so until the right side of the heart begins to give way. Dilated stomach and abdominal distension from ascites and other causes, pleural effusion and empyema, likewise cause orthopnoea, but only when they hamper the heart's action and bring right-sided dilatation as a consequence.

Why, then, should a person with right-sided heart failure need to sit up to breathe? It is in order that the *respiratory blood pump* should have full play, the respiratory movements acting on behalf of the hampered right side of the heart. The maximum action of this respiratory blood pump is seen in those worst cases of orthopnoea where no complete relief to the distress is given even by the sitting posture. In such, a reversal of the usual abdominal respiratory movement may be noticed. When a person breathes naturally, his diaphragm descends as he inspires, and his abdominal muscles move *passively outwards*; but in a very bad case of orthopnoea the abdominal muscles may be

noticed to move *actively inwards* as the diaphragm descends in inspiration. The effect of this is at once apparent: the liver, containing ordinarily one quarter of all the blood in the body, and in these cases engorged with more, is squeezed as in a pair of nutcrackers between the descending diaphragm and the in-going abdominal muscles. It is squeezed like a sponge, and some of the blood in it will be forced onwards, through the right auricle and ventricle into the lungs: in other words, the diaphragm and abdominal muscles together are now doing that which the right ventricle should normally do. The respiratory blood pump is doing the work of the right side of the heart.

Naturally this makeshift is not perfect. Indeed, the immediate result is to distend the right ventricle still further, and accentuate its incapacity to work. But nature, when the right ventricle has failed her, must do the best she can, and the only machinery she can call to her aid is this imperfect respiratory blood pump. It is, of course, only in the very severe cases of orthopnoea that the reversed action of the abdominal muscles is seen; but in normal man every inspiration helps on the circulation in more ways than one, as physiologists have proved, and it is when the right side of the heart begins to fail more and more that a greater and greater call is made upon this blood-pumping effect of respiration. The diaphragmatic respiration is rendered easier when the hampering weight of the liver is removed; the failing right heart calls the respiratory blood pump into stronger action; this accessory blood pump acts more effectively when the patient is sitting up than when he is lying flat. Hence it is that right-sided heart failure is the fundamental cause of so many cases of orthopnoea; which at

first sight seem to have nothing in common.

## Prognosis and Treatment.

In the first group of cases, the orthopnoea will naturally persist as long as the laryngeal obstruction continues. As inflammation subsides, the airway will be restored, and orthopnoea disappear. In cases of acute oedema, bilateral abductor paralysis, and other similar conditions, even tracheotomy may be necessary; or a new way artificially supplied. The orthopnoea will not be relieved until the airway be re-established.

In the second group of cases the orthopnoea will persist, so long as the aneurysm, growth, or other mass retains its bulk. Rest in bed may cause the aneurysm to diminish in size until the patient is able to lie down; but it often happens that orthopnoea from any of these causes lasts until the end.

In the third group of cases, the orthopnoea will vary with the condition of the right side of the heart. Rest in bed is a potent factor in relieving the heart, and a few days of absolute rest may enable a patient previously orthopnoeic to lie down at full length and sleep. In the acute spasm of angina pectoris, amyl nitrite capsules by inhalation often bring relief at once. Digitalis in suitable cases, such as mitral stenosis, may cause the heart muscle to do just so much more work that it is able to recover from its dilatation, and the orthopnoea will correspondingly diminish. Opium is a valuable drug in many cases. The accessory causes of the cardiac dilatation will naturally be treated: the cough of chronic bronchitis; the stomach condition when there is gastric dilatation; ascitic fluid or a pleural effusion will be drawn off by paracentesis;



acupuncture of the legs may be called for in nephritis. Each of these forms of treatment will suggest themselves when the patient is before one, and they all help to remove the cause of the cardiac dilatation. In the worst cases, nothing at all will relieve the right ventricle, and the end is near. But inasmuch as the muscular effectiveness of the ventricle varies in inverse ratio to the cube of the radius of its cavity, the ultimate means of relieving the heart is to diminish its distension by withdrawing blood. Leeches may therefore be applied to the region of the liver; or actual venesection may be employed as a more certain and rapid measure. When the heart has once dilated badly from any cause which still persists, the prognosis is always grave; but the two main principles of treatment must be: to remove as far as possible the cause of the cardiac dilatation; and, if this be not by itself sufficient, to directly diminish the volume of blood within the right side of the heart. Defective action of right auricle and ventricle, necessitating increased aid from the respiratory blood pump, is the immediate cause of this largest group of all cases of orthopnoea.

#### \* HOW TO TREAT FEVERS.

BY

SURGEON-MAJOR R. E. WRAFTER, B.M.S.  
(Retired). DEHRA DUN.

The term "Fever" is one which has been applied to a condition in which there are present the phenomena of rise of temperature, quickened circulation, marked tissue change, and disordered secretions of the body. In addition there is disinclination for food, general languor, and mental depression, so that the patient is

no longer lively and cheerful. Broadly stated, all fevers arise from a non-specific or specific cause, the former by exposure to cold and wet, fatigue, surfeit, etc.; and the latter from disease germs introduced into the system from without, or from some kind of local irritation or injury setting up inflammation of a part or organ. Whatever be the essential cause, the sympathetic nervous system is undoubtedly deranged, which causes disturbances of the vaso-motor filaments, or the nervous centres, adjacently situated to the corpus striatum which controls the process of heat production within the body.

The prominent features of all fevers, whether singly or complicated with other diseases, is the rise of temperature, only accurately determined by the aid of the clinical thermometer; and Hicks' patent self-registering  $\frac{1}{2}$  or 1 minute thermometer with magnifier is the best to use. The different degrees are familiar to us. The natural heat of the body is practically  $98.4^{\circ}\text{F}$ ., the terms feverishness being used when the temperature ranges from  $99$  to  $100$  degrees  $\text{F}$ .; slight fever, if  $100$  or  $101$  degrees  $\text{F}$ .; moderate, if  $102$  or  $103$  degrees  $\text{F}$ .; high, if  $104$  or  $105$  degrees  $\text{F}$ .; and severe, if above the latter. When the temperature exhibits a tendency to remain at  $106$  degrees  $\text{F}$ ., and above, the term hyperpyrexia is used. In all cases of fever the temperature should be ascertained by means of a clinical thermometer, as the feel of the hand is a most unreliable and deceptive method of gauging the heat of the body, and, in prolonged cases, it is also desirable to register the various temperatures on a temperature chart, in order to obviate all difficulties and chances of error, and to enable the medical attendant to judge what medicines are needed.

\* Specially contributed to 'The Antiseptic.'

Quickened circulation always accompanies the rise of temperature and usually keeps pace with it quite orderly; for instance, a rise of 1 degree  $\text{F}$ . is generally accompanied with an increase of several beats of the pulse per minute. The waste in the tissues is also marked according to the severity and duration of the febrile phenomena, being slight or not at all in ephemeral or simple continued fever, and quite excessive in typhoid fever. The disordered secretions are shown by the deficiency of gastric, salivary, renal, and intestinal secretions, clammy state of mouth, furred tongue, and the occurrence of thirst, constipation, anorexia, scanty and high-coloured urine. Other symptoms which mark the occurrence of eruptive fevers, propagated by means of contagion, are not referred to here. All fevers, whether in the adult or the very young, seem to have a certain natural course, and to terminate in the re-establishment of health. But, as in the management of all disease, so the general treatment of fevers, whether of a febricula, continued nature, or associated with disease, should be included under the following heads:—

- The reduction of the temperature.
- Attention to secretions.
- Proper nourishment.
- Careful nursing.

The first two mentioned are boon companions, the second following closely upon the first; and to prevent the latter, the former must be promptly and efficaciously relieved without delay.

For the reduction of temperature, cool sponging is very valuable, more so than the cold bath, which is hazardous and laborious. Antifebrin, phenacetin and other antipyretics have more or less a tendency to depress the heart and therefore should

be avoided as far as possible. If the circulation is weak and enervated, employ stimulants, together with caffeine and digitalis; but if the pulse is strong and quick, aconitum or veratrum viride may be used.

The waste of the tissues must be removed by the administration of diaphoretics, diuretics, and laxatives. If indicated through their action on the alimentary canal, they prove efficient remedies in reducing the temperature and eliminating disease germs from the system. The skin should be moist, not dry and harsh; the urine abundant, rather than scanty, and turbid with tissue waste; the evacuations should be watched. By all means allow the free use of water beverage, for it is a great promoter of the various secretions.

In all varieties of fever, quinine is useful as a prophylactic or preventive, and should be given in appropriate doses during the remissions. As a rule, it should not be administered until the bowels, if costive, have been cleared by some laxative medicine. If any constitutional idiosyncrasy exist to prevent quinine being used, the next best to quinine and sometimes better, is arsenic, 5 to 8 drops of Fowler's Solution in infusion cinchona twice a day after food. During the convalescence, bitter vegetable tonics with dilute mineral acids are the remedies most required.

The main object towards which all our treatment must necessarily be directed, is the support of the vital powers, and this we shall best secure by a judicious selection of suitable nourishment and such as is most easily digested; the most proper is milk, animal broths, etc., in small quantities, but administered frequently. Be especially careful not to starve a fever. All these, together with careful nursing, which must be watched vigilantly—for very much of the success in the manipu-

lation of the fever patient is attributable to good sensible nursing—are essentials in the treatment of fever cases, and if carefully observed and accomplished, the feverish conditions will oftentimes be prevented and, where existing, will be promptly aborted.

**FEVER OF CHILDREN.**—Infants and children in India are very subject to fever of the continued or remitting description, although not always arising from so-called malaria. The main symptoms are much the same as those in the adult, but a rigor is very seldom noticed although the hands and feet feel cold; as in the adult, the malady is marked by incomplete remission of the febrile state. This incomplete cessation of the fever is generally most marked in the early morning, while the aggravation of the symptoms is most developed towards the evening and in the early part of the night. The decline or remission is generally attended with some degree of perspiration, but not always so. In remittent fever of children there is always a tendency to wandering of the mind, or to convulsions, and delirium or stupor often occurs from the high temperature, accompanied by much restlessness, and probably moaning. This form of fever is distinguished from typhoid fever by the suddenness with which it comes on and by its marked incomplete remissions. It may occur from a number of causes, of which malaria, the initiation of teething, worms, improper diet, and collection of fecal matter in the bowels, lung affections, and disordered stomach are the chief. In perhaps the majority of cases of remittent fever occurring to children the malady is not caused by malaria, but arises from one of the other effects named. Remittent fever in children can therefore only be correctly treated by first

ascertaining the cause, and then using the remedies recommended for such a condition. When there is no other cause evident, and the fever appears to arise from malarious influences, the bowels, if confined, should first be acted upon by a dose of castor-oil, and the ordinary diaphoretic or fever mixture should be given, in appropriate doses, during the paroxysm; at the first decline or remission, or when perspiration appears, quinine in doses according to the age of the child must be administered. Not infrequently these means will cure the fever in its first stage, but more usually a second paroxysm occurs, though probably it will be of less severity. Without treatment, the second paroxysm is, as a rule, more severe than the first. Quinine should not be given while the temperature is rising, but during its decline. As a rule, there is only opportunity for a single dose of quinine daily during the severity of the attack, and it is an almost serious mistake to employ it in only small doses. Should quinine not be at hand, other antiperiodics may be used, such as benzoal, Warbury's fever tincture, etc. The following prescription has been found useful in a great majority of cases of remittent fevers in children.

R Acetanilid gr. ii  
Salicylate of Soda gr. ii  
Quinine gr. ii  
Mix for one powder. Make 8 such powders.

Mix well.

Give one every 6 or 8 hours until the skin becomes cool, and a free perspiration established.

## Cases and Comments.

### A Case of Subacute Transverse Myelitis with some Unusual Symptoms.

UNDER THE CARE OF  
LT.-COL. G. H. D. GIMLETTE,  
M. D., C. I. E., I. M. S.,

Residency Surgeon and Superintendent, Afzalgunj Hospital, HYDERABAD.

REPORTED BY

[DR. M. G. NAIDU, M. B. & C. M. (EDIN.).]

Faiz Mahomed, a strong, well-made Mahomedan, aged 55 years, was admitted into the Afzalgunj Hospital on the 9th September 1904, for what looked at first sight like spastic paraplegia.

**History.**—He contracted syphilis two years ago and was addicted to toddy-drinking. There was no history of injury or exposure to cold. About two months and a half previous to admission he had a mild febrile attack with severe tingling pains in the neck and stiffness of the muscles of that region. At this time also he suffered from severe tinnitus in the left ear, which to a diminished extent persists to this day. The pain and stiffness gradually worked down the spine, until, in a month's time, they localized themselves in the region of the 8th dorsal vertebra, where, together with a great deal of tenderness, they are still present. This point forms the centre of a girdle pain which he complains of. About this time, he suffered from pain and numbness of the right lower extremity, and noticed that he was rapidly losing power over that limb. A day or two later the left side followed suit. Once begun the loss of sensory and motor functions in the lower limbs rapidly progressed and he was rendered absolutely helpless in a few days and was bed-

ridden. Loss of power over the bladder and rectum now supervened with spasticity of the lower limbs.

**Condition on Admission.**—On close examination it is found that sensation is not absolutely abolished in the affected parts. There is dulness of sensory perceptions from the region of the 8th dorsal segment downwards, but the points of the asthesiometer are appreciated on the thighs when 6 inches apart. There is, however, absolute analgesia, a pin-prick, however deep, not eliciting the least sign of pain. There is also parasthesia, in that the point of a pin is described (when the eyes are closed) as the tip of a finger. Temperature sense (both heat and cold) is lost, but muscular sense is present and normal.

Motor paralysis of the lower limbs are also incomplete, though more advanced than sensory paralysis. He cannot move his legs or toes at will, but with the aid of his arms he manages to sit on his haunches from his usual lying down position on his back. The movements he goes through to assume the sitting-on-his-haunches position are peculiar and resemble somewhat the antics of a pseudo-paralytic. He half turns over his face, holds the sides of the cot with his hands and, supporting his body on his elbows and forearms, raises himself while his lower limbs are still extended. These latter he now alternately flexes with the aid of an arm disengaged until he sits his feet and hands. In this position he can sit for any length of time without fatigue. If he raises his hands from the cot he falls forwards or backwards as the balance may tend.

There is a certain amount of flaccidity but no wasting of the muscles of the paralysed parts. Constant fibrillary twitch-

ings are noticeable in the pectoral and facial muscles.

All the superficial reflexes are exaggerated up to the epigastric, but there is a certain quantitative relation between the stimulus applied and the reaction of the muscles; *e.g.*, on gently tickling the sole of the right foot the right knee is flexed; more violent stimulus flexes the thigh of that side, and a still more violent one causes flexion of the *opposite* leg. Another curious reflex phenomenon noticed is that a sudden flexion or extension of one leg produces jerking of the opposite one. On repeating this experiment, however, the opposite flexion becomes feebler and feebler until it fails after three or four attempts, the muscles or nerves evidently becoming exhausted.

The knee jerk is excessive, and so, strangely enough, is the elbow jerk. The electric reactions are normal.

He has developed a large bed sore on the sacrum.

Micturition and defæcation are unconscious and uncontrolled. The urine is ammoniacal and he suffers from severe constipation. There is constant priapism.

**Note.**—The interesting features of this case are: (1) the marked dissociation symptoms said to be characteristic of syringomyelia; (2) the peculiar cross reflex action, which, so far as the literature at my disposal goes, has not been recorded as a pathological condition and reflects clinically the rheoscopic frog experiment for summation of stimuli; (3) the incomplete character of the sensory and motor paralyses.

Persistent anti-syphilitic treatment for over a month did not produce any marked impression on the progress of the case,

and the patient left the hospital worse than when he came in.

I am indebted to the courtesy of the Superintendent of the Afzalgunj Hospital for permission to publish these notes.

### The use of Methylene Blue in Hysteria.

BY

DR. M. G. NAIDU, M. B. & C. M. (EDIN.).

There is still a general tendency to resort to the so-called anti-spasmodic remedies in combating the hysterical conditions. Indeed, directly the diagnosis of hysteria is made, it is the fashion in these parts to dash off an 'anti-hysterical' prescription containing valerian, asafoetida, zinc, musk and other noxious remedies. In many cases of hysteria that come under our notice, the patients seem to know the smell, taste, and, sometimes, even the actions of the ingredients which, from their experience of the previous doctoring, they expect us to prescribe. A repetition of any of these drugs engenders a relaxation of that will-power of the medical man over his patient which is so essential a factor in the successful treatment of hysteria. It behoves us, therefore, to seek new remedies, which, while increasing the effectiveness of our control over the minds of our patients, will also serve to direct their attention from the imitation evils they are subject to.

Methylene blue answers this purpose admirably, and I shall quote below some cases in which, after utter failure of other drugs, methylene blue has had an almost magical effect. Before going into the details of these cases I may mention that I use the following prescription:—

Methylene blue gr. xii.  
Kaolin gr. xxxvi. ft. pil. massa.

Div. into 12 pills, S. One pill three times coated with silver. } a day.

The patient is warned that the moment the urine gets coloured the symptoms will disappear or abate. The pills are then to be continued one twice a day, and later, one every morning, until all the pills are exhausted. Of course, I am referring to cases in which the organic basis (if such there be) of the hysterical condition is not of a serious character in itself.

1. M. A., a married woman, aged 18, pregnant two months, violent vomiting for a week, unable to retain even a teaspoonful of water sucked in as ice. Great exhaustion and emaciation. Mistaken at first for a case of acute dyspepsia and treated with soda, bisnuth, hydrocyanic acid, &c. Later diagnosed as vomiting of pregnancy and dosed with cerium oxalate, ipecac, Tr. Iodine and blisters. Later still recognised as hysteria and treated with valerian and asafoetida, without any amelioration of her condition. With methylene blue pills and iced champagne, the vomiting stopped at once and the patient made an uninterrupted recovery. She is now strong and in the 7th month of pregnancy.

2. A severe attack of anorexia nervosum in a Parsee lady, aged 30: found her in four days fainting with a weak pulse and sighing respirations. One attempt at forced feeding with the stomach-tube threatened complete collapse. Methylene blue pills and weak egg-flip brought her round in two days.

3. A Mahomedan lad, aged 15, working hard for his Middle School examination, but 'funking' it, was attacked with violent cough which lasted incessantly for three days and nights and resisted all

treatment, chiefly 'Unani'. The tonsils, which were slightly inflamed, were touched with glycerine ferri and methylene blue pills administered in the evening. As the cough still continued to be troublesome a morphia injection was administered at 9 P.M. The patient slept till the morning when the cough returned, and he asked for another hypodermic. Plain water was injected and the pills continued. The cough disappeared entirely.

The above cases are necessarily sketchy. I have notes of 20 cases, all of which in the end read alike. It is true that, thus briefly put, they read very like cases in pamphlets busily circulated by enterprising firms for the sake of advertising some one or other of the new-fangled nostrums with which the market is getting flooded. But, as I have no money interest in the sale of the drug which I wish to push forward, and every interest in the successful dealing with a condition which at times sorely tries the resources of the physician, I may be pardoned for a faith that is born of experience, and an outspoken testimony, the result of such faith.

I should be glad if those of my brethren who have tried the drug will publish their experiences with it, and if those who have not tried it will prescribe it in their practice.

One word about an overdose of methylene blue. A patient with cystitis, for whom I prescribed the drug, and who, on the strength of his having been an indifferent medical student in his younger days, took it upon himself to make up the prescription with his own hands, took five grains three times a day for three days before I got a chance of stopping him. He suffered from nothing worse than slight dysuria.

## THE ANTISEPTIC.

November, 1904.

### The reorganization of the Subordinate Medical Department in the Madras Presidency.

The scheme for the reorganization of the Subordinate Medical Department in this presidency, which, like an elephant's gestation, has taken an uncommonly long time for its development, has at last seen the light of day. Perhaps the word reorganization is too comprehensive to be applied to the present scheme, which does not go far enough to remedy even a large proportion of the grievances of the members of the Subordinate Medical Department.

The existing establishment consists of

4 permanent Civil Surgeons.  
16 do. Civil Asst. Surgeons.  
7 *sub pro tem.* do.  
13 temporary do.  
128 Civil Apothecaries,

The reorganised establishment will, for the present, be constituted by

the promotion of 36 Civil Apothecaries to Civil Asst. Surgeons.

the confirmation of 7 *sub pro tem.* Civil Asst. Surgeons.

the confirmation of 13 temporary Civil Asst. Surgeons.

in addition to the 4 Civil Surgeons, 16 Civil Asst. Surgeons, and 92 unqualified Apothecaries, who are practically untouched by the present scheme. So that all that the scheme has done is to confirm 20 Civil Asst. Surgeons of the *sub pro tem.* and temporary class, who have waited long enough for this tardy justice, and to change the names of 36 Civil Apothecaries, who hold university qualifications, into Asst. Surgeons.

We have already expressed our views on the change of the name Apothecary into Civil Asst. Surgeon in the last number of 'The Antiseptic.' Rightly or wrongly the Government have decided to elevate the Apothecaries with university qualification to Asst. Surgeoncies. That is quite explicable. The Government wanted to divide the Apothecary class into two, taking the possession of a university qualification as the *fundamentum divisionis*. But now we understand that even an unqualified Apothecary in the General Hospital is called an Asst. Surgeon, although in all official records he remains a mere Apothecary. This, we are told, has been effected by a departmental order, and is not part of the scheme.

If the name "Apothecary" is objectionable in the General Hospital it is equally so in the Maternity Hospital or the Ophthalmic Hospital or the

Royapettah Hospital. Why an Apothecary should be paraded as an Assistant Surgeon in the General Hospital alone is beyond our comprehension. It is a tacit admission that the title Apothecary is not a desirable one. Then why not change the name of the whole remaining Apothecaries and be done with it once for all. A man when he enters the General Hospital gates becomes an Assistant Surgeon (in name). The same man when posted to Jummalnadagu becomes an Apothecary. The thing smacks of a theatrical performance. This is not the only instance of the theatrical "quick change" in the Madras Medical Department. An Assistant Surgeon when he is assistant to a District Medical and Sanitary Officer is a gazetted officer, whose movements and transfers are to be published in the *Fort St. George Gazette*. If that same Assistant Surgeon is posted to the Government Maternity Hospital or the Royapettah Hospital he is no longer a gazetted officer, and is fair sport for any one to kick about like a football from Royapettah to Baliguda or from Egmore to Tirutrapundi. Assistant Surgeons in the Madras Medical Establishment ought all to be gazetted officers. The objection that has been raised against making them all gazetted officers is, we understand, that it will take too much space to publish the postings of all the Assistant Surgeons in the *Fort St. George Gazette*. A more silly objec-

tion than this it is impossible to conceive. The public are more interested in the movements and transfers of the medical officers who look after the health of the people of this presidency than in those of the khaki-clothed guardians of salt and arrack. There ought to be fewer occasions for the transfer of medical men than for that of officers of any other department. The more a medical man is left undisturbed in a locality the more opportunities he has of knowing the people of that locality intimately, and the greater the knowledge of a medical man of the people among whom he lives the greater the benefit to the community at large.

Constant transfers of medical men are not only a cause of public inconvenience but also of unnecessary public expense. A close study of the postings and transfers of the members of the Subordinate Medical Establishment for the past several years will be an exceedingly interesting one, and will reveal the enormities that are committed in the name of "exigencies of public service." We should like to have a little more light on these postings and manipulations, and the only way in which abuses can be checked and justice done to subordinate medical men is to have all their transfers and postings published in the *Fort St. George Gazette*, even though they are not made gazetted officers. In this connection we may observe that it

would be advantageous, both to the Service and to the Public, if permanent men are posted to their own places instead of being made to act somewhere else. And it would also be an improvement if, as far as possible, senior men are sent out as assistants to District Medical and Sanitary Officers, as that will prevent Assistant Surgeons posted to small mofussil stations from having to, practically, serve under their juniors.

The Assistant Surgeons who are working in the hospitals in the presidency town have a real grievance in that they are not allowed a presidency allowance. It is true that they get a charge allowance, but considering the amount of hard work they do, the difficulty of their obtaining any appreciable amount of private practice, on account of severe competition in the presidency town, and considering also the fact that living in Madras town is far more expensive than living in the mofussil stations, it would only be an act of pure justice to grant them a small presidency allowance in addition to their charge allowance.

The question as to the date from which service for pension shall be reckoned in the case of temporary Civil Assistant Surgeons who are confirmed under the scheme is left to be decided as each claim for pension arises. It would have been better if the question had been settled once for all. However, as it is, we hope that all of them

will be awarded pensions for their service commencing from the date of their appointment as temporary Civil Assistant Surgeons.

There are some other points which we should like to discuss in this connection, but from want of space we hold them over for a future issue.

### Our Contemporaries.

#### MEDICINE.

#### The Diagnosis of Pulmonary Regurgitation.

BY

DR. E. FROMMERS.

Uncomplicated incompetence of the pulmonary valves is one of the rarest cardiac lesions. In 1891 Borie collected 58 published cases. Of these a correct diagnosis was made in 7. In malignant endocarditis the pulmonary valves are not infrequently affected, but in a simple case of heart disease—especially if cardiac symptoms are not prominent—the lesion is seldom even thought of. The writer reports 2 cases which were seen in the Breslau University clinic. One of these ended fatally from pulmonary embolism, and the diagnosis was confirmed post mortem. The first patient was a widow, aged 43, who had been delicate from childhood, and was admitted with phthisis. The other was a man, aged 21, who had had no serious illness. In neither case was there a rheumatic history. Both patients had long suffered from dyspnoea and præcordial oppression. In both the right and left ventricles were hypertrophied. The apex beat was in the fifth interspace, in the nipple line, and dulness extended in one case to the right border of the sternum, in the other to

the right parasternal line. In both there was a systolic murmur, the greatest intensity of which was in the second interspace immediately to the left of the sternum. The second pulmonary sound was clear, but was immediately followed by a diastolic bruit. In the fatal case the right ventricle was of the size of a normal heart. The left cusp of the pulmonary valve was almost entirely destroyed, the posterior cusp was lacerated and rigid, and the right cusp was slightly roughened.

If the diagnosis is based on the results of auscultation alone pulmonary incompetence is certain to be mistaken for aortic disease. But the results of inspection and percussion, and the character of the pulse should prevent this error. There is no water-hammer pulse or arterial retinal pulsation. The cardiac hypertrophy does not extend downwards, and the apex beat is in the fifth interspace. There is marked hypertrophy of the right ventricle. If there is pulmonary stenosis in addition to regurgitation the prognosis is much more grave. A double murmur is present in a large proportion of cases of uncomplicated regurgitation. But if with a systolic murmur the pulmonary second sound is absent or obscured, stenosis is probably present. Further, in stenosis there is almost always extreme cyanosis. Other conditions which may simulate pulmonary incompetence are a persistent ductus arteriosus, pericarditis, and exocardial murmurs. In the first there are cardiac hypertrophy to the right, and a systolic murmur in the second or third left interspace near the sternum. But this murmur usually occurs in the second half of the systole, is added to a distinct first sound, and is sharply separated from the ringing second sound. In pericardial effusion the dulness is more regularly triangular, the limit of dulness to the left does not coincide with the apex beat, and the bruits are usually distinctive. Another source of error in diagnosis is the

fact that a soft diastolic murmur may be present over the pulmonary area in mitral stenosis. This is due to dilatation of the pulmonary artery, owing to backward pressure from the left auricle. Hence a diastolic bruit over the pulmonary area in cases of mitral stenosis is not to be regarded as necessarily indicating simultaneous pulmonary disease. Perhaps the most difficult cases to diagnose are those in which both disease of the aorta and pulmonary artery coexist. Such cases have been described by both Gibson and Gerhard. A water-hammer pulse, downward hypertrophy of the left ventricle, and conduction of the murmurs into the carotids were combined with extension of the cardiac dulness to the right and cyanosis. In the first of the writer's cases the upper limit of cardiac dulness was at the lower border of the third rib. But above this was a second area of dulness, about 2 in. wide, which to the right extended to the middle of the sternum and upwards reached the second rib. This area is indicative of dilatation of the pulmonary artery, and according to Zinn in a skiagraph is seen to pulsate. It is also present in cases of persistent ductus arteriosus. Of some diagnostic importance is the fact that in old-standing disease of the right heart there is invariably an increase of the red corpuscles. This is a compensatory provision.—[*Munzch. Med. Wech.*, Mar. 8, p. 429.]

#### Paralysis of the External Rectus of the Eye from Ear Disease.

BY

DRS. LANNOIS AND FERRAN.

A currier, aged 38, who had no neuropathic tendency and had never had syphilis consulted the writers. He had at one time been a heavy drinker of absinthe, but years before he gave it up after an attack of rheumatism complicated by cardiac symptoms and albu-



minuria. Two months before he had a chill accompanied by fever and severe pain in the region of the left ear. In 8 or 10 days otorrhoea set in and there was some relief of the general symptoms, though the pain in the ear and temple persisted. The left mastoid process remained unaffected. At this time there was no ocular symptom, no facial paralysis and no vertigo. This condition lasted about 3 weeks: the discharge of pus was abundant; the patient treated himself with tampons of boric wool which he changed 4 or 5 times daily. About a fortnight before he consulted the writers he had a severe pain behind the left eye, and suddenly discovered that he was seeing double. To seize anything, or to direct himself he required to close the left eye: there was some trickling of tears and his vision was blurred. On consulting the writers they found a paralysis of the external rectus of the left eye. There was external strabismus such as is produced by paralysis of the sixth cranial nerve. If he was asked to look towards the left side the eye did not turn beyond the middle line, though perfectly mobile in every other direction. There was diplopia. The left pupil was somewhat smaller than the right and there was slight congestion of the papilla but the vision was normal and equal on both sides. There was no nystagmus nor interference with colour perception. The left tympanic membrane was much swollen, especially behind the short limb of the stapes and the membrane of Schrapnell. Pus was visible at this point, and paracentesis was performed at the most prominent spot. The rest of the tympanum was red, but not swollen. Three days later the painful symptoms had abated. The discharge of pus was abundant, but the ocular paralysis was unchanged. There was no vertigo but patient's gait was uncertain and he required to be guided. After 8 days he could see much better with the left eye, though diplopia was still present on looking at anything on the left side. Three weeks later the otitis had

disappeared. The spontaneous diplopia had also disappeared and only returned when the eye was in a very strained position. As the ear improved the ocular symptoms steadily abated and at the end of a month the patient resumed work.

The writers suggest that the ocular paralysis was reflex, and produced through the medium of the vestibular nerve.—[*Rev. Heb. de Laryg. d' Otol., &c.*, July, p. 1.]

### Diseases mistaken for Rheumatism.

BY

WM. HALE WHITE, M.D., F.R.C.P.

Rheumatic fever is so common and as a rule so readily distinguishable, that the error of diagnosing it where it does not exist is easily made. The diagnosis of rheumatic fever should always be withheld so long as only one point is implicated. Early in the disease a single joint may be affected, but a second joint will be affected within 24 hours. The writer has twice known fracture into the knee-joint mistaken for rheumatic fever. A patient had osteo-myelitis of the head of each tibia with effusion into each knee-joint, but rheumatic fever was diagnosed. In a girl acute necrosis of the head of the femur, with effusion of pus into the hip-joint, was regarded as rheumatic fever. A child was suddenly taken ill with pain in hip and fever. He was thought to be suffering from rheumatic fever, and was admitted to the hospital 5 days after the onset of the illness. He was then in the typhoid state, owing to septicæmia, and in spite of cutting down on the diseased hip immediately after admission to the hospital, he died. The writer has known pleurisy or pneumonia to cause such pain in the shoulder on the same side as the disease that the patient has been thought to be suffering from rheumatic fever. Usually the pleurisy or pneumonia was discovered,

but the case has been wrongly regarded as rheumatic fever with rheumatic pleurisy instead of, as it ought to have been, pneumococcic pleurisy or pneumonia with reflex pain in the shoulder. On the other hand, he has once known pneumonia completely missed because attention has been so concentrated on the pain in the shoulder, which was thought to be rheumatic. In these cases the pain is not due to pneumococcic affection of the joint, for no effusion ultimately occurs.

Almost any specific fever may be mistaken for rheumatic fever, because the patient who has fever often complains of pain in the limbs, and if these pains are referred to the joints an erroneous diagnosis may be made. Perhaps the mistake is commonest with influenza. Pyæmia is often mistaken for rheumatic fever. A youth was transferred to the writer's care from a surgical ward where pain and effusion into several joints had led to a diagnosis of rheumatic fever. The discovery of some pneumonia, amongst other reasons, made him doubt this diagnosis. A rectal examination revealed a prostatic abscess, which was the source of pyæmia. A patient was sent to hospital as a case of rheumatic fever, but a careful examination showed pyæmia secondary to a sore on the heel. Rheumatic fever was incorrectly diagnosed in a patient suffering from pyæmia due to suppuration of both middle ears. A patient who was sent in from the surgical out-patients' department as rheumatic fever, after pus had been let out from the shoulder joints he recovered from the pyæmia, from which he was suffering, and which was due to a cut on the hand. The confusion between rheumatic fever and pyæmia is very serious; for if pyæmia is called rheumatic fever, failure to adopt early surgical treatment may cost the patient his life, and hope of recovery may be held out when he is within a few days of his death. When the pyæmia takes the form of malignant endocarditis the diagnosis may be difficult, as in the following case:—

A boy, aged 11, was admitted. He was one of a large family several of whom had had rheumatic fever and chorea, and he had had both 2 years before. There were much pain in both knees, a temperature of 104.4°, and systolic and presystolic mitral murmurs. Rheumatic fever was suspected, but the diagnosis was regarded as doubtful as the skin was dry. In less than 48 hours definite signs of meningitis enabled a diagnosis of malignant endocarditis, with pyæmic infection of the joints and meninges, to be made. He died 6 days after admission. Malignant endocarditis, suppurative meningitis, and pus in both knee-joints were found.

More than once the writer has known syphilitic arthritis to be mistaken for rheumatic fever. The following is an example:—A man, aged 26, was sent into the hospital with a diagnosis of rheumatic fever, which he had had 12 years before. The present illness began 3 weeks before admission, with pain and swelling in the left elbow. A week later the left knee was affected, and soon after the left foot. On admission he had pyrexia, the joints mentioned were swollen, and he was sweating considerably; there was a slight secondary syphilitic rash and a sore throat. He had a hard chancre 10 weeks before. Forty-eight hours treatment by salicylates made no impression on the disease, but he recovered under mercury.

Cerebro-spinal meningitis due to the diplococcus intracellularis may be mistaken for rheumatic fever. Pyrexia with pain and effusion into the joints are early symptoms. The rash may be thought to be a rheumatic erythema, and the pain caused by retraction of the head may be ascribed to rheumatism.

Gonorrhoeal arthritis is frequently mistaken for chronic rheumatism; if severe it often is thought to be rheumatic fever, for the temperature may then be as much as 103°. A patient had pyrexia and was supposed to be suffering from rheumatic fever, but the

facts that the joint trouble had persisted in a few joints for some days, that one knee was enormously swollen, that there was no blush over the joints, and that the skin was dry, made the writer suspicious. He found a slight gleet, and the case ran the course of gonorrhoeal rheumatism. Sometimes help may be obtained from the fact that the effusion is in the sheaths of tendons as well as in the joints, for this is far more common in gonorrhoeal rheumatism than in rheumatic fever. When gonorrhoeal rheumatism occurs in women it is particularly likely to be overlooked.

If the febrile pains of typhoid are referred to the joints rheumatic fever may be suspected. Arthritis is so exceptionally a complication that serious difficulty does not often occur; but the writer saw a child, aged 6, who 8 days before was seized with sudden pain in the right hip and a temperature of  $103^{\circ}$ . The pyrexia persisted; the pain in a few days left the right hip and appeared in the left, and then the knees and ankles were painful and swollen. This led to a diagnosis of rheumatic fever; but when the writer saw the child the tongue, spleen, and some typical rose spots were quite characteristic of typhoid fever. That the disease was not rheumatic fever was proved by the left hip becoming completely disorganised.

Some books mention difficulties of diagnosis between pneumonia and rheumatic fever, but they do not often occur. Pneumococcic arthritis is a rare complication of pneumonia. Glanders has been mistaken for rheumatic fever, but the disease is so rare that the mistake is not common.—[*Bristol Med.-Chirur. Jour.* June, p. 97.]

#### Corrosive Sublimate Poisoning: Delay in Appearance of Symptoms.

BY

DRS. SPILLMANN AND BLUM.

A woman, aged 30, drank a solution containing 46 gr. of corrosive sublimate. For 48

hours she presented no symptoms except almost complete amaurosis, then foetid diarrhoea suddenly began, the motions gradually becoming hæmorrhagic. Salivation with gingivitis and oedema of the face and tongue followed. The oedema gradually increased, and after a lull of 36 hours, convulsions supervened, in which the patient died 12 days after taking the poison. At the necropsy the internal surfaces of the cheeks and gums were found to be gangrenous. There were 2 small ulcers of the oesophagus, oedema of the stomach, intense inflammation of the large intestine, and gangrene of the rectum. There were also vegetations on the mitral valve and softening of the right occipital lobe of the brain. Both kidneys were very large and white, although there was no albuminuria, and death apparently resulted from uræmia. The early amaurosis was probably due to oedema of the retina, although the swelling of the face appeared much later. The softening of the brain was due to embolism from the mitral valve. The delay in the appearance of symptoms is interesting and unusual.—[*La Medicine Moderne*, Mar. 23, p. 93.]

#### Multiple Neuritis in Gonorrhoea.

BY

DR. M. MENETRIER.

A founder, aged 46, was admitted to hospital on Oct. 27, suffering from gonorrhoea and powerlessness in his limbs, which confined him to bed. The gonorrhoea began at the end of April and a month later he commenced to feel weak in the legs, especially at the end of the day, under the influence of fatigue. The weakness increased and at the end of September he had to give up work. At the same time he had pains in the lower limbs which prevented him from sleeping. The pains extended to the upper limbs in which also power was lost but to a less extent than in the lower limbs.

On admission the discharge was still in full activity. The pus contained an abundance of gonococci. The lower limbs were so weak that he could not raise them from the bed, and the muscles, particularly the abductors, the quadriceps, and the muscles of the calf, were atrophied. The sensibility of the lower limbs was blunted and the muscles were tender. Pressure on the nerves was equally painful. There were also spontaneous pains and tingling in the lower limbs. The knee-jerks were absent. In the upper limbs the paralysis was less though the muscular masses of the arm, forearm, and hand were atrophied. Movement of the upper limbs were feeble and inco-ordinate. Sensory troubles were also less severe; cutaneous sensibility was preserved and the muscles were less tender. In the trunk muscular atrophy was less marked but the patient had great difficulty in sitting up. Faradic irritability was entirely lost in the lower limbs; in the upper limbs it was preserved but a strong current was necessary to obtain a reaction. In the forearm the flexors responded more readily than the extensors; the extensor indicis responded feebly, and the common extensor of the fingers not at all.

The paralysis of the upper limbs increased; soon movements of the arms became impossible and those of the forearm became limited to flexion of the fingers. Then the paralysis spread to the trunk and neck; the patient could not sit up or hold his head in position when it had been raised from the bed. He lay inert but always complaining of pains, principally in the upper limbs. His general condition became worse and a bed-sore rapidly formed over the sacrum. Finally he became feverish, the tongue became dry and dirty, the respiration became difficult, and fine subcrepitan rales were heard at a spot at the right base. Death from bronchopneumonia took place on Nov. 13.

NECROPSY.—The lungs were consolidated at the bases. On section a drop of pus trick-

kled from the orifices of the bronchi. The liver was large and yellow and appeared to be fatty. The kidneys were much congested, soft, and tumefied. The urine contained in the bladder was purulent and the mucous membrane was congested. The large nerve trunks (sciatic nerve and brachial plexus) as well as the smaller nerves (branches of the radial and crural nerves) appeared normal to the naked eye but were preserved for histological examination. The muscles of the thigh and forearm, though diminished in volume, were of good colour and showed no changes to the naked eye. Microscopic examination of the brain was negative. In the cord chromatolysis, globular swelling, and vacuolar changes were found in some of the cells of the anterior cornua, principally in the cervical and lumbar regions. In the nerves pronounced changes were found at the peripheral ends which became less marked towards the central end. Not a single fibre in the radial nerve was normal; the myelin was broken up or absent and the axis cylinders were irregularly swollen, fragmented, or destroyed. The lesions were purely degenerative, there being no multiplication of nuclei. A branch of the crural nerve showed similar changes. The fibres of the brachial plexus and sciatic nerve were almost intact, showing only fragmentation of myelin in a few without changes in the axis cylinders.

This case is important not only on account of its severity, but also because it appears to be the only one of gonorrhoeal neuritis in which a necropsy was made. The lesions in the spinal cord may be explained as due to the same toxic cause which produced the neuritis, but possibly they were secondary to the latter. Marinesco has shown that such cellular changes may result from neuritis.—[*Bulletins de la Soc. Med. des Hopitaux*, Jan. 23, p. 678.]

## SURGERY.

## Longitudinal Fracture of the Tibia.

BY

MR. RICKMAN J. GOLDLEE.

A man, aged 46, was admitted to hospital. Whilst getting off an omnibus he struck his left knee forcibly against the mudguard behind the wheel. He was able to stand after the accident, but on attempting to walk fell. On admission the injured leg was so painful that accurate examination was impossible. The leg was swollen and the knee-joint was distended.

Under chloroform the physical signs were as follows: 1. Genu valgum, which could be reduced by extension applied to the foot. 2. Undue lateral mobility of the tibia on the femur but no increased antero-posterior mobility. 3. An increase of the width of the upper end of the tibia; measured with calipers the greatest width of the upper end of the right tibia equalled  $3\frac{1}{2}$  in. and the greatest width on the left side was 4 in. Perhaps some slight allowance should be made for the œdema in the latter case. 4. An undue projection outwards of the external tuberosity of the tibia without an equal displacement of the internal tuberosity. 5. No evidence of a transverse solution of continuity of the femur or the tibia. 6. When the upper end of the tibia was compressed laterally a clicking sensation was felt. There was also some coarse, soft grating when the knee was flexed. 7. Distension of the knee-joint.

The genu valgum was reduced by extension and a Croft's plaster splint was applied. A skiagram showed a longitudinal fissure beginning at the articular surface of the tibia just external to the middle line and extending downwards for 2 in. On the inner side a small, oblique fracture between the

internal tuberosity of the tibia and the shaft could be seen. Ten days after the splint was applied massage and passive movements were used. The swelling of the leg was still considerable. Ten days later the patient got about on crutches, the injured limb being still fixed in the Croft's splint. When the patient left the hospital the width of the tibia was markedly greater than that of the other side. He could bend the knee only through an angle of  $30^\circ$ . Attempts to forcibly bend the knee apparently caused much pain. He was seen 2 months after the accident. He could move the knee through an angle of  $60^\circ$ .

The injury is rare and is imperfectly described in the text-books.—[*Lancet*, Feb. 20, p. 504.]

## Traumatic Gangrene of the Scrotum.

BY

A. G. BISSET, M.B., CH. B.

A man, aged 43, was admitted to Victoria Infirmary, Glasgow, on June 25, 1903. Four days previously he was supporting one of the rear corners of a heavy concrete board which was being carried by six men. The two men in front of him suddenly and without warning let slip their hold. The weight thus all at once devolved on the patient and he made a great effort to support the board at his corner. In this endeavour, the corner must have grazed the front of his trousers, but whether at the same time it caused any injury to the scrotum he could not say. He felt a shock which he compared to that of electricity pervading his whole system. He had to cease work and walked home with difficulty. He went to bed and had a rigor. Severe pain across the lower abdomen came on. For the next 3 days he lay in a half-dazed condition, unable to eat or sleep.

He had the general appearance of collapse. The temperature was  $103^\circ$ , the pulse was

$100^\circ$ . Free stimulation was carried out and 5 gr. of quinine hydrochlorate were given every 4 hours. The whole scrotum was greatly swollen and distended so as to be about the size of a cocconut. It felt boggy and oedematous, pitting deeply on pressure. The skin of the entire scrotum, except of a small area above, just below and by the side of the penis, was a mass of foul-smelling, soft, pulpy, yellow slough. There was a fairly sharply marked-off line of demarcation above, where the slough was separating from the small portion of healthier skin left. Behind and below, the line of separation was at the junction of the scrotum with the thighs. The testicles felt considerably enlarged and somewhat hard. The penis was unaffected. The gangrenous mass of tissue was cut away with scissors along the line of separation, and a large amount of soft yellow sloughy material within was cleared away, exposing the testicle. A wet boric dressing, covered with charcoal to diminish the offensive odour, was applied and changed every 2 hours. A small sloughing patch appeared in the left testicle but did not persist. In about a fortnight the sloughing had almost ceased and the parts began to be covered with a fine granulating surface. The discharge contained the streptococcus brevis.

On Dec. 26 the whole surface was looking clean and granulating rapidly and a plastic operation was performed in two stages. The edges of the three small pieces of the scrotum left were pared and trimmed. An incision was made along the inner aspect of the thigh, commencing a little below the lower extremity of each exposed testicle. The knife was carried upwards towards the pubes, turned outwards and brought back again parallel with the first incision, marking out an elliptical flap of skin. Its lower end was left attached to form a pedicle. The flap was then raised and brought across to cover the testicle. This procedure was carried out on both sides. The two flaps were next uni-

ted in the middle line by horse-hair sutures and joined above to the remnant of the original scrotum by ligatures of fine catgut. The pedicles of the flaps were left adherent to the thigh at their origin, the under portion of the testicles being thus uncovered meantime. The gaps in the thighs where the flaps had been taken from were closed with silkworm gut sutures after undermining the adjacent skin. Finally, the parts were covered with iodoform gauze and aseptic dressings were applied. The grafts took well and on the tenth day after operation the stitches were removed. The flaps of skin were apparently growing downwards and backwards so as partially to cover over the gap that existed below.

On Jan. 19 the second stage of the operation was performed. The pedicles of the flaps were cut through on both sides and brought together so as to cover in the testicles below and behind, the covering being slightly incomplete behind. The edges were refreshed but no stitches were used except to close the wounds in the thighs. The parts were kept apposed, with iodoform gauze wrapped round the new scrotum. The operation was successful, and on Feb. 20 the patient was able to get up. The flaps grew in behind and the scrotum is now quite complete; testicular sensation is apparent and the patient has no discomfort whatever beyond a little stiffness in walking.—[*Lancet*, June 25, p. 1793.]

## Treatment of Pelvic Appendicitis by Rectal or Vaginal Incision.

BY

DRS. TIXIER AND GAUTHIER.

Pelvic appendicitis has received little notice even in recent books, and the treatment of suppurative forms by drainage through the rectum or vagina is little practised, though Goerster opened such a purulent collection by the rectum 14 years ago,

and Jaboulay began his series of cases in 1896. The writer has operated in 4 such cases with satisfactory results.

CASE 1.—A healthy man, aged 44, suffered from colic, loss of appetite, and general malaise for 3 days. On the morning of the fourth day he was suddenly seized with severe pain, extending to both sides of the abdomen. After relief by morphine, the abdomen became tympanitic and no fæces and no flatus were passed and an enema produced no result. The evening temperature was  $102.2^{\circ}$ . On the fifth day there was no localization of the pain and the symptoms continued to point to intestinal obstruction. An injection of oil was followed by the passage of some fæces and slight relief. For 18 days the patient required daily enemata, the constipation being obstinate and accompanied by tenesmus. The abdominal pain was then less acute, and on rectal examination an induration was felt along the prostate. The temperature remained about  $100^{\circ}$ . On examination 24 days after the onset Dr. Tixier found the abdomen distended and painful, especially above the pubes where the movements of coils of intestine were visible. There was frequency of micturition and tenesmus with passage of yellowish blood-stained mucus. Per rectum the prostate was found pushed downwards and above it a mass was felt bulging the anterior wall and soft at one point but without fluctuation. The mucous membrane was thickened and did not move on the deeper tissues. A diagnosis of pelvic abscess being made the patient was anaesthetised, the sphincter dilated, and the rectal wall incised transversely to the extent of 3 finger-breadths. A large glassful of thick foetid pus escaped. The cavity was single and without diverticula. A large drain was inserted coming out through the anus. The evening temperature was  $98.5^{\circ}$ . The drain was removed and the rectum washed out 5 days later. Recovery was rapid.

CASE 2.—A youth, aged 18, suffered from severe vomiting and acute abdominal pain, but was untreated for several days. Dr. Gauthier found him suffering from acute appendicitis with encysted peritonitis, there being a large collection of pus in the right iliac fossa. Next day he was in a grave state, the abdomen was greatly distended with constant vomiting and severe diarrhoea. The pulse was 140, the urine was scanty, and patient cold. Under anaesthesia 35 oz. of foetid pus were evacuated by iliac incision. The appendix was searched for but not found. Two large drainage tubes were inserted, one into the pelvis. They were removed 4 days later. The patient improved rapidly, but a fortnight later the temperature rose and a collection of pus was found bulging into the rectum. The patient was again anaesthetised, the sphincter dilated, and the abscess drained by a large tube through the anus. Rapid recovery followed.

CASE 3.—A lad, aged 17, who had suffered from appendicitis a year previously, was seized with vomiting, fever, and pain in the abdomen, at first in the right iliac fossa, and later in the pelvis, where it was less acute. From the third or fourth day he suffered from glairy diarrhoea with tenesmus and painful and difficult micturition. A tumour as large as a walnut was with difficulty felt in the lowest part of the right iliac fossa, which was slightly painful. Per rectum a mass as large as a foetal head could be felt, chiefly on the right side of the pelvis, and evidently continuous with the nodule in the abdomen. The mass projected into the pelvis above the prostate, pushing the bladder downwards and forwards and the rectum backwards into the hollow of the sacrum. The rectal mucous membrane was thickened and oedematous for a height of about 4 in. and covered with whitish glairy discharge. The anus was dilated, the anterior rectal wall was retracted with a speculum, when the bulging was apparent to the eye, and was incised for about

2 in. vertically in the middle line and 2 in. above the prostate. After incising the rectum a hard mass about  $\frac{3}{4}$  in. thick was encountered, which the scissors penetrated with difficulty. A glassful of foetid pus escaped, but the appendix was not found. A drainage tube was inserted in the abscess and secured by a silk ligature which passed out by the anus. Next day the patient could micturate easily and without pain. Low diet was given at first, but no opium and no enemata, till after the fifth day when the first motion took place, which displaced the drainage tube. After this a daily injection under low pressure was ordered. The abscess had diminished by a third, and the temperature had fallen to normal. A week later he was allowed to leave his bed, the drainage tube being retained for another week. In spite of the enemata and resulting motions no trouble was experienced with the tube, which had been *in situ* for 3 weeks. The thickening had diminished to the size of a small apple in front of the rectum. Three months later he had gained weight, and presented no sign of pelvic abscess or operation, the rectal mucous membrane being normal.

CASE 4.—A girl, aged 14, had suffered for 8 days from pain in the lower abdomen and vomiting. On admission the temperature was  $101.5^{\circ}$ . Pulse 140. She was in a state of extreme agitation and with difficulty it was ascertained that the abdomen was fixed on respiration, and that there was an area of dulness filling the right iliac fossa and extending to the left side. The area was resistant to palpation and somewhat tender. Rectal and vaginal examination disclosed a hard mass in the pouch of Douglas. The incision for posterior colpotomy was made and about 35 oz. of foetid pus were evacuated. The abscess cavity was then ascertained to be unilocular and a body was felt, probably the appendix, but it was not removed. As a large tube gave sufficient drainage no iliac

incision was made. Five days later the temperature had fallen to normal and the pain had completely disappeared. The functions of the bowel and bladder were naturally performed. After 4 days of satisfactory progress the temperature rose and the drainage tube was missing and could not be found. It was replaced by another, but though the temperature fell and the abscess diminished during the following 10 days it was decided to explore the incision under an anaesthetic. The tube was found in the pouch of Douglas and the abscess cavity presented the form of an hour-glass, the upper part being in the iliac fossa and of the size of a small orange, communicating by a sinus as large as the little finger with a smaller cavity behind the uterus. On the removal of the lost drainage tube the temperature rapidly fell and drainage was discontinued 26 days after the operation. Ten days later the patient was allowed to go about, there being only a slight oozing from the vulva, which soon ceased. The patient made a good recovery. On discharge there was some dilatation of the vagina.

The writers prefer a vertical incision of the rectum as less likely to injure the vessels. They abstain from repeated injections into the bowel, which they believe to be useless. The drainage tubes recommended were of rubber "en croix," which were found less apt to be displaced or to slip into the abdomen as in the last case. The possibility of effectually treating a pelvic abscess without weakening the abdominal wall, and the better drainage obtained by rectal incision combined with the usual iliac operation renders this method of great value in suitable cases.—[See also "REVIEW," Vol. VI., p. 643-*Archiv. Gen. de Med.*, May 10, p. 1153.]

## OBSTETRICS AND GYNÆCOLOGY.

### Extra-Uterine Pregnancy: Rupture of the Sac: Living Child.

BY  
K. FRANZE.

A woman, aged 32, was admitted to hospital on June 13, 1903. At 21 she became pregnant for the first time and had a normal labour. She conceived 18 months later, but after 3 months there was an abortion, which was followed by a long pyrexial illness. She had then continued weak and had a purulent vaginal discharge until 3 years before admission, when, after prolonged treatment, her health was restored. She missed a menstrual period on Nov. 14, 1902. Three months later she had abdominal pain. At the seventh month of pregnancy labour-like pains appeared, but did not long persist. For 4 weeks before admission there had been constant labour-like pains, and pains in the groins and during micturition.

There was an abdominal tumour slightly larger than an eight months pregnant uterus, which extended upwards to within 3 finger-breadths of the ensiform process, and could be felt to contract rhythmically. A foetus could be felt and the foetal heart was audible. Slightly to the right above the pubes was a lump which extended upwards 3 finger-breadths above the right ramus of the pubes, and could be felt to harden and relax. Per vaginam the cervix was found to be elongated. It was continuous with the swelling above the right pubic ramus. The cervical canal admitted the finger as far as the internal os, where no foetal parts could be felt. Douglas's pouch was displaced downwards and forwards by a hard swelling, which compressed the vagina and cervix against the posterior surface of the pubes. This was diagnosed as the bag of membranes in an extra-uterine

pregnancy. On July 17 the tumour was lower, and did not extend beyond the umbilicus. The foetal head could be felt to the left of the umbilicus.

An incision was made from the pubes to 2 finger-breadths above the umbilicus. A quantity of serous fluid escaped mixed with vernix caseosa and meconium. Between the coils of intestine were the child's head and shoulders: the remainder of the body was still in the sac. After division of the umbilical cord the child was removed. It immediately screamed. The omentum and intestine were pushed aside in Trendelenburg's posture, so as to expose the upper wall of the sac. There were scarcely any adhesions. The left broad ligament was seized with pressure forceps close to the uterus. The sac was connected with the left Fallopian tube, which became lost in its walls. Evidently it was a tubal pregnancy. The sac was freed manually from the posterior surface of the left broad ligament and from Douglas's pouch. The placenta, which was partially situated in the latter, was removed piecemeal, and some small pieces were unavoidably left behind. Severe hæmorrhage resulted, but was arrested by ligature and tamponades. The pedicle was ligatured and the sac was removed. The uterus, which was of the size of a fist, was raised to its normal position. The right appendages were imbedded in adhesions. Douglas's pouch was packed with iodoform gauze the ends of which were conducted through an incision into the vagina. The abdominal wound was closed and subcutaneous injections of normal saline solution were given.

During the night of July 16 there was severe abdominal pain. Evidently rupture of the sac occurred about this time, a fact which accounted for the altered physical signs noted immediately before the operation. It was remarkable that rupture had occurred without the escape of a drop of

blood and without collapse. Although the placenta occupied the greater part of the sac-wall it did not encroach on the part in which the laceration occurred. The child, which was a male, weighed 5½ lb.

Convalescence was uneventful and the temperature, except on the day following the operation, was normal. The extra-peritoneal strip of gauze was finally removed on July 27. The remaining placental fragments were not extruded. The mother and child were discharged on Aug. 10.—[*Wien. Klin. Woch.*, May 12, p. 530.]

### Extra-Uterine Pregnancy at Term: Living Child.

BY  
H. PERHAM.

The continuance of extra-uterine pregnancy to term is rare. Since Breisky published a case in 1887 only 4 cases have occurred in Prof. Chrobak's clinic in Vienna. In only 1 case was a full-term living child obtained by operation; an intra-uterine twin also lived. In all 148 cases have been reported which approached full term. But excluding those anterior to the thirty-second week of pregnancy this total is reduced to 114, and only 25 cases are known in which a full term child survived.

A woman, aged 34, was admitted to hospital at 7 a.m. on Nov. 17, 1903. Three days previously there had been labour pains with uterine hæmorrhage. A practitioner diagnosed placenta prævia and attempted version. This caused great abdominal pain, which had since persisted, and cessation of foetal movements. She had last menstruated about the middle of Feb., though slight hæmorrhage occurred on Mar. 12. To reach the hospital a 5 hours' railway journey was necessary. On the way there was an attack of eclampsia.

At 8 A.M. there were extreme dyspnoea and constant, violent, cramp-like abdominal pains. The urine contained albumin, granular casts, and red corpuscles. The abdomen was distended, but there was no tympanites. Two finger-breadths below the xiphoid process was part of a foetus, but the exact position could not be determined owing to abdominal tenderness. The foetal heart was inaudible. The vaginal mucosa was livid. The cervix was displaced forwards and upwards against the pubes by a tumour behind, and slightly to the left of the uterus. The cervical canal was slightly more than 1 in. long, and easily admitted two fingers. But no foetal parts could be felt beyond the internal os, and the uterus, which was of the size of a foetal head and could be felt to the right of the hypogastric region, appeared to be empty. Through the posterior vaginal wall could be felt a foetal suture and a fontanelle. The diagnosis oscillated between extra-uterine gestation and complete rupture of the uterus with the child in the abdominal cavity.

An incision was made beginning 3 finger-breadths above the pubes and ending 4 finger-breadths above the umbilicus. A bluish, transparent tumour was exposed after pushing aside the omentum and coils of intestine. At the upper end it compressed the descending colon and sigmoid flexure. The mesocolon, which was stretched across its anterior wall, was divided, and the tumour was manipulated through the abdominal wound. The uterus, which corresponded in size to that of a 4 months' pregnancy, lay in front and to the right of the tumour. The right adnexa were adherent to the tumour, and the left were indistinguishable from it, except that about 2 in. of the left tube could be traced in its wall. It was easily freed from the uterus, but on separating lateral adhesions it was ruptured. The ruptured wound was prolonged, and a female child, weighing nearly 6½ lb., was extracted. The heart still beat, and it soon revived.



The placenta was inserted to the left of the sac, and consisted of two portions (placenta succenturiata). It was removed, pressure forceps being placed on several spurting vessels. The bag of membranes was rapidly freed from its connections. Pressure forceps were placed on the left broad ligament close to the insertion of the Fallopian tube. The left ovary was not seen. The superficial layer of the mesentery of the sigmoid flexure was then seen to be widely perforated, and it was assumed that the sac had partially developed between the peritoneal layers. The perforation was closed by a number of silk sutures. The right ovary and tube were removed owing to operative exigencies. The field of operation was loosely packed with iodoform gauze, the ends of which were conducted through the vagina, and the abdominal wound was closed in 3 layers. During the operation the woman frequently became collapsed, but revived with injections of camphor, normal saline solution, and wine enemata. For some days there were disturbing symptoms of peritonitis. But on the fifth day, after an injection of atropine ("REVIEW," Vol. IV., p. 223), the bowels acted. Convalescence was prolonged by right parotitis, lobular pneumonia, and transient elevations of temperature. The laparotomy wound healed by first intention, and she was discharged cured 6 weeks after the operation. The child was thriving in April, 1904, when last heard of.

The prognosis appeared almost hopeless, for apart from the continuation of extra-uterine pregnancy to term, labour pains had continued for 2 days before the operation, a long railway journey had been undertaken, and puerperal eclampsia existed. Recovery was thus remarkable. The pregnancy was probably ovarian, though the proof demanded by Werth, that the Fallopian tube should be traceable intact from the fimbriated extremity to its uterine insertion was not forthcoming, owing to the sac having been par-

tially destroyed during separation of adhesions. Ovarian tissue could not be found in any part examined microscopically.

Formerly, owing to fear of hæmorrhage, it was recommended in advanced extra-uterine pregnancy with a living child, to await signs of the death of the child, or even to hasten its death by injections of morphine or puncture of the sac. The writer would operate in every case immediately, whether the child is viable or not, as it is impossible to say when rupture of the sac may occur.

See also "REVIEW," p. 316 (Extra-uterine pregnancy; child saved, but not mother). [*Wien. Klin. Woch.*, May 12, p. 527.]

### Puerperal Hæmatoma: the Tardy Development of a Fatal Case of the Vagino-Vulvo-Perineal Type.

By

DORLAND (W. A. NEWMAN).

The patient was 28 years of age and suffered for 19 years from mitral regurgitation following upon an attack of acute rheumatism. In August, 1903, she became pregnant for the second time, and soon developed albuminuria and other symptoms of Bright's disease. Labour occurred spontaneously on April 3, 1904, and a still-born male child of eight months' development was expelled; the placenta and membranes came away naturally, there were no symptoms of internal hæmorrhage or collapse, and the after-pains were not marked.

On April 5th the patient began to bleed from the uterus, and at the same time a dark spot was seen on the right labium majus, which gradually increased in size. "This was associated with severe pain in the right ovarian region and with abdominal distension, which soon assumed the proportions of marked tympanites. The pulse at this time was 100, the temperature 98.4, and the

respirations 24. By the morning of April 6th the dark swelling on the labium had extended into the vagina and back on the external perineal surface as far as the rectum, which became patulous. The tumour was tense to the feel but palpation did not elicit tenderness. At noon of this day the patient experienced a sinking spell, attended by a tingling sensation in the right hand and arm. Her speech became thick, and finally there was inability to speak at all. Oxygen by inhalation produced reaction, but it was noticed that the movements of the entire right side were limited. The mind was clear, there were no signs of facial paralysis, no did the tongue deviate to the side of the mouth. The pulse that night registered 80 beats, the temperature was 98° and the respirations were 26, the patient, however, appeared very weak. The right side was now lifeless. After a restless night the patient entered the morning of the seventh of April in an exceedingly weakened condition—the temperature was kept up by the application of external heat. At noon unconsciousness supervened and death ensued at six o'clock in the evening, seventy-six hours after the birth of the child."

The abdomen and pelvis only were examined *post-mortem*. The peritoneal cavity was free from blood and there was no hæmatoma in either broad ligament. "Examination of the hæmatomatous mass showed that the boggy tumour began at the upper right side of the vagina and extended outwards and downwards to lose itself below in the pelvic structures. Examined from within the clot was found to extend from the right iliac ramus back to the coccyx and outwards towards the obturator foramen. The mass was apparently thoroughly encapsuled and tightly adherent to the walls of the sac. It was in size 7 in. by 3½ in. by 1 in. The uterus was opened and found to be normal in every respect. The placental site was at the fundus, anteriorly and to the right."

It would be interesting to know in these rare cases of puerperal hæmatoma whether or not there always pre-exists, as in the present case, a chronic valvular lesion or some chronic renal affection. It is well-known that both of these conditions predispose to a varicose state of the vessels of the lower portion of the body, and this, together with the physiological thinning of the venous walls in gestation, would strongly predispose to rupture and hæmatoma formation. A common cause of death in puerperal hæmatoma is cerebral embolism. This was the primary cause of the fatal termination in the case reported in this paper. The total amount of blood lost was not sufficient to cause death. Whether the embolus comes from the hæmatoma or the placental site is another question extremely difficult of solution.—*Amer. Jour. of Obstet.*, June, 1904.

HERBERT WILLIAMSON.

### Adrenalin in Gynæcological Practice.

By

PETERS.

The writer remarks that the use of adrenalin has received very little mention in gynæcological literature.

Cramer states that he has used the English preparation with favourable hæmostatic results after curettage for inoperable carcinoma. In cases of cervical catarrh, and in one case of pruritus and caruncle of the urethra, the same writer reports favourably upon its use. Peters finds no difference in the use of Parke Davis's preparation and that of Freund and Redlich, which they call *renoform*. He has employed these agents in strengths of 1—2,000 and 1—3,000 in salt solution applied for two minutes to the cavity of the uterus, and in strength of 1—1,000 to 1—3,000 for 2—5 minutes to the vulva as a corrosive. In the treatment of cervical

and uterine catarrh after using a 30 per cent. solution of formalin, the employment of adrenalin has been found by Peters to produce a deeper penetration of the corrosive, by rendering the tissues more anæmic. The number of applications of the corrosive is thereby lessened, and its action accelerated. Only twice had the writer noted recurrent hæmorrhage after this intra-uterine therapy. In one case the bleeding lasted for a day and was followed by a watery mucous discharge. Adrenalin is the best agent to check hæmorrhage before commencing the operation of atmocausis.

Metrorrhagia is not a suitable test, but Rhodes and Scott met with success in using adrenalin for this type of hæmorrhage after douching, curettage, ergotin, and liquor ferri had failed. A good result was obtained in chronic gonorrhoeal urethritis, after 1 per cent. silver nitrate had failed.

The author claims that the greatest use for adrenalin is in the treatment of vulvitis and pruritus. The more intense the inflammation, he says, the more rapid and certain the result, and he cites the details of two cases—both non-diabetic—in support of his statement.—[*Zeits. fur Gynakol.*, 1904. No. 27.]

CUTHBERT LOCKYER.

### Placenta Prævia.

BY

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No case in obstetrics, except perhaps puerperal eclampsia, presents so much difficulty and causes so much anxiety as placenta prævia. I shall in this paper discuss chiefly the etiology and the treatment of this abnormality.

During the seven years ending 1903, we have had 34 cases of placenta prævia in the lying-in Home, of which 1 was central, 3

partial, 20 marginal, 3 lateral and 7 unknown. This classification only refers to the condition before labour, as a central one may become converted into partial, partial into a marginal, and marginal into a lateral after dilatation of the os.

*Etiology*—Hofmeier, supported by Kaltendach, advanced the theory that under certain abnormal conditions the villi of the chorion læve, which atrophy during normal course of pregnancy, become functionally active and develop a placenta of reflexal origin continuous with the placenta of serotinal origin. Peters' description of the formation of the decidua reflexa is, I believe, universally accepted. The ovum when it reaches the uterine cavity rapidly works its way into the compact layer of the uterine decidua by the phagocytic action of the trophoblast. It not only makes an excavation deeply, but also laterally. The deeper the excavation the thicker is the reflexa, especially the basal portion. It is believed that the functional activity of the villi of the chorion depends upon the vascularity and thickness of the decidua that surround it. If the lower reflexa fulfils this function a reflexal placenta results, which finally becomes united with the decidua vera of the cervical zone, unless rupture and hæmorrhage provoke premature expulsion of the ovum. Several specimens illustrating this condition have been recorded, and the last one by Clarence Webster is worthy of note.

That this is not the only mode of formation of the placenta prævia has been admitted by all. Specimens of placenta prævia of serotinal origin have been exhibited by Webster and others. Webster, commenting on his specimens, draws the conclusion that a low implantation of the ovum could only explain the serotinal origin of a prævia placenta. While this is true in a good number of cases where the placenta is entirely serotinal and is wholly implanted in the lower segment, it cannot be so in cases having

the characteristics of Webster's specimen. This specimen shows not only placenta of serotinal origin, but also that of reflexal origin. The serotinal portion extends almost from the fundus. In my opinion this can only be explained by the ovum having entered the compacta in the usual manner, and worked its way downwards between its layers until it reached the lower zone. In these cases the serotinal surface being extensive, the placenta becomes equally so, even extending to the reflexa; as a result the placenta is thin as is usual in these cases. If the specimen is one of low implantation it is not likely that the placenta will extend from the fundus to the os internum and to the decidua reflexa.

If you examine the placenta in this abnormality you find it generally thin, spreading over a large area. Sometimes you find it oval, reniform or bilobed with succenturiate formations. The cord is usually attached eccentrically at the border, or has a velamentous insertion. The ovum is usually fertilised in the Fallopian tubes, and by the time it reaches the uterus its trophoblast becomes functionally active, and it at once burrows into the mucous membrane of the fundal portion of the uterus. But should the functional activity of the trophoblast be delayed until the ovum reaches the lower uterine segment owing to late fertilisation, it is not unlikely that the ovum would attach itself in that zone with the formation of a serotinal placenta prævia. The youngest human ovum known is the one described by Peters, which was found in the uterus of a woman who died three days after missing her menstrual period. In this specimen the primitive ectoderm representing the trophoblast has been demonstrated to invade the decidual tissue by phagocytic action and to open out blood-spaces. An ovum devoid of trophoblast cannot attach itself, and will be carried away by the ciliary current in the absence of any intrinsic motile powers of its own,

from the Fallopian tubes down to the cervix. Therefore arrest and implantation of the ovum depend on the functional activity of the trophoblast, and may occur in any part of the genital tract, from the ovary down to the cervix. Should the attachment take place in the Fallopian tubes ectopic gestation results. Should it occur in the upper or middle zone normal pregnancy results, whilst should it occur in the cervical zone placenta prævia results.

In a case of tubal gestation associated with twin pregnancy in uterus, reported by Balfour Marshall in the November number of this journal, in which the twins, which are probably homologous, and the foetus in the tubal sac are reported to be of the same age, the interesting question arises, how is it that one ovum is arrested in the tube and the other finds its way into the uterus. In this case there cannot be any question of obstruction in the tube. It exactly fits in with the views herein enunciated. The first ovum foecundated in the usual way develops its trophoblast by the time it enters the uterus. The second ovum, foecundated earlier than the first, is arrested in the tube owing to early development of the trophoblast.

*Source of hæmorrhage.* In the reflexal variety the growth of the ovum stretches the reflexa, which may give way and produce hæmorrhage and abortion, or the accident may be produced by the chorionic villi becoming very active and rendering the reflexa weak and liable to rupture as in the case of tubal gestation. This accident generally occurs before the fourth month, that is, before the reflexa meets the vera. If the reflexa escapes this accident it becomes blended with the vera, which may be partial or complete. In the former condition (that is, if there is no complete blending of the reflexa and vera) the reflexa may give way and produce hæmorrhage any time between the fourth month and full time. In the latter

pregnancy may go on until interrupted by the separation of the placenta consequent on the canalisation of the cervical canal and descent of the ovum. In the serotinal variety the hæmorrhage is due to the separation of the placenta during dilatation of cervix. Hæmorrhage then from placenta prævia may occur any time during the course of pregnancy, and some of the unrecognised cases of abortion and accidental hæmorrhage are due to this abnormality.

*Treatment.* There is no fixed line of treatment applicable to all cases, but it must be prompt, and the life of the mother cannot be considered safe until delivery is effected. The maternal mortality in the Guy's Hospital Charity is 16.1 per cent. In some institutions it is as high as 30 or 40 per cent. (Muller). The mortality to children, according to Galabin, is 60 to 75 per cent. In the treatment of placenta prævia the following objects should be attained:—(1) Preventing and counteracting shock; (2) checking hæmorrhage; (3) promoting uterine contractions; (4) facilitating dilatation of the cervix; (5) expediting delivery after sufficient dilatation of the cervix. Unfortunately in this country we seldom or never see patients with this abnormality in the early stages. In the type of cases seen in hospitals the os is sufficiently dilated to admit one or two fingers or more at least sufficiently large to put in a Champetier de Ribes' bag. If the os admits two fingers this bag is introduced at once after rupturing the membranes, which ought to be done without exception. If this precaution is not taken the arrest of the hæmorrhage is not complete and there is always a tendency for further separation of the placenta resulting in asphyxia of the child. This is produced by the bag lifting up the membranes and effecting a separation of the placenta which, when the membranes are ruptured, will retract with the dilating cervix and thereby ensuring a complete compression by the bag. If the placenta is marginal or lateral the

membranes can be easily reached, but if central the placenta should be pierced through before reaching the membranes. In the incomplete variety the edge may be reached by pushing the finger towards the side of the uterus corresponding to the abdomen of the child. In this way I have nearly always succeeded. The bag may be left alone, if the pains are strong and if there is no bleeding, until expelled by natural means when forceps may be applied and delivery effected. If there is slight oozing, traction or a weight may be applied to the bag, supplemented by a firm abdominal binder. If the case is seen before a diagnosis can be made Herman's recommendation of puncturing the membranes and introducing a tent into the cervix, or the American method of plugging the cervix and vagina with antiseptic gauze also after puncturing may be tried. A firm abdominal binder should be put on in any case. I have had no experience of these methods of treatment and therefore cannot speak with any authority.

I have reserved to the last the discussion of the sheet anchor in the treatment of placenta prævia, viz., saline transfusions. One often gets a case in which there has been a good deal of hæmorrhage, the os half dilated; the hæmorrhage absent and the placenta partially detached, pulse feeble and frequent. Your first impulse is to deliver the patient at once by the traditional treatment of version and if you do so the result will be disastrous. At least such has been my first experience. This has made a great impression on me. Sudden emptying of the uterus after severe hæmorrhage produces such a severe shock as to defy all known restoratives. I now counteract this fatal collapse by early saline rectal injections or transfusions under the armpit, according to circumstances. My matron has instructions to promptly wash out the bowels and give a saline rectal injection in every case of hæmorrhage without waiting for me. Nearly four pints of salines are generally given, two per rectum and two

under the cellular tissue. During the seven years ended 1903 we have had 34 cases of placenta prævia with seven deaths, and during the last three years, 1901, 1902 and 1903, when the treatment above detailed has been strictly carried out, we have had 22 cases with no death, and the key to our success has been early saline transfusions, Champetier's bag and patience.—[*Journal of Obstetrics and Gynaecology.*]

### Three Attacks of Eclampsia occurring in a Multipara.

BY

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MRS. W., an Eurasian, commenced to menstruate in her 15th year, and was always regular, the flow lasting four or five days, attended with pain in the lower abdomen on the first day. Discharge sometimes profuse. Micturition normal; said to be scanty during the pregnant state. Was married in her 19th year, and was admitted to the hospital in her 20th year, pregnant with her first child in May, 1893. The membranes were ruptured artificially, and on the 23rd she was delivered of a live female child. She progressed favourably, and left the hospital on the 3rd of June.

She was re-admitted in August, 1895, pregnant for the second time, aged 22 years, in a semi-conscious state and in the ninth month of pregnancy. No uterine souffle, legs swollen; 16 ounces of urine were drawn by catheter and found to be loaded with albumen. She was apparently quite well when she went to bed, but had a fit during the evening and another this morning; before she could be removed from the carriage she had a third fit. This fit was followed by two others, which were mitigated by the use of chloroform. The cervix was dilated by means of Champetier de Ribes' bag, and as the patient

was very weak, the head was perforated and crushed with the cephalotribe. The foetal heart was doubtful on admission. The records are very deficient and only go as far as 5.45 p.m. on the day of delivery. During this time she had three more fits, and ether 3ss was injected fourteen times owing to her weak condition. She recovered and left the hospital on the 14th of September. The third and fourth confinements were natural in the hospital.

She was admitted on the 14th of January, 1901, at 2.30 a.m., with a history of having had one fit at home and another on the way to the hospital. Labour commenced at midnight. She was about eight months pregnant; foetal heart doubtful; feet and hands very oedematous; urine loaded with albumen. At 4 a.m. she had an injection of morphia gr.  $\frac{1}{4}$ , having had two fits. At 9 a.m. a female child was still born, weighing 3 lbs 10 ozs. She had eight fits before delivery and six after. At 10.45 a.m. she had an injection of morphia gr.  $\frac{1}{4}$ . On the 15th she had two more fits; albumen  $1\frac{1}{2}$  th; was very restless during the night; frequent [twitchings of the hands and face; temperature 102° F. Morphia gr.  $\frac{1}{4}$  was repeated, and she was ordered a mixture of acetate and citrate of potash. On the 16th the urine was free from albumen; she passed a good night. The note made on the 17th is: "Restless; slept very little during the night, shouting and trying to get out of bed; complains of headache." On the 18th a trace of albumen was again noticed, but after this it quite disappeared; a mixture of chloral and bromide was given at bedtime. On the 22nd it is noted that she was quite sensible and able to answer questions. She continued to improve, and left the hospital on the 6th of February. The sixth confinement was also in the hospital, and was natural.

On the 12th of March, 1904, she was admitted for albuminuria, pregnant with her

seventh child. The urine was found to be very scanty and loaded with albumen; both feet were oedematous. She was placed on a milk diet and given thyroid extract gr. 5 three times a day, and under this treatment the albumen quite disappeared and also the headache from which she at first suffered. She was advised to remain under observation until such time as labour set in, but she refused to stay in hospital, and left on the 21st of March. She was re-admitted on the 2nd of April of this year at 4-30 a.m., with a history of having had one fit at home, another on the way to the hospital and the third at the gate. Foetal heart audible; uterus corresponds to seven months; her upper garments were saturated with blood, due to her having bitten her tongue severely. Urine very scanty and loaded with albumen. On admission morphia gr.  $\frac{1}{2}$  was injected, and shortly after thyroid extract gr. 10 was also administered, gr. 35 were subsequently given in divided doses. She had therefore in twelve hours 45 grains of thyroid. Saline injection under the breast one pint and acetate and citrate of potash mixture were also given. She had in all thirteen fits before delivery and none after. The cervix was dilated with a Barnes' bag, which was expelled as soon as it was put in. A male child was stillborn, weighing 3 lb. 12 oz. On the day after delivery 46 ounces of urine were passed, containing about one-twelfth albumen. Her face was considerably more swollen on the second day, but after this the oedema rapidly disappeared. She complained of headache up to the sixth day after delivery. The urine was examined on several occasions, but no casts were ever found. She left the hospital on the 21st April, the nineteenth day after delivery, apparently quite well.

*Remarks.* In our experience of eclampsia two attacks occurring in the same patient are unknown. In the last ten years there have come under treatment 271 cases of eclampsia and in no single instance among

these, except this case, has eclampsia occurred twice. Cases of recurrent eclampsia are not unknown in literature, but I imagine three attacks in the same individual are without record. The present case is a good example of the fact that the affection is not due to disease of the kidney. The microscopical and chemical examination of the urine show that when she left the hospital after her third attack there was no disease of the kidney, and if previous disease had been present it would in all probability have been accentuated. The swelling of the face after the disappearance of the fits has been noticed here in other cases, but why the face should swell, whilst the oedema of the extremities disappears I cannot say. In this case the swelling of the face was very much more marked on the second day, and the oedema of the lower extremities was fast disappearing.

*Journal of Obstetrics and Gynaecology.*

## OPHTHALMOLOGY.

### Congenital Word-Blindness.<sup>1</sup>

BY

SYDNEY STEPHENSON, M.B., C.M., F.R.C.S.

EDIN., *Ophthalmic Surgeon to the Evelina Hospital. &c.*

That some children are much slower than others in learning to read must be an observation as old as the art of reading itself. It is, however, only within the last few years that such tardiness in otherwise bright children has been recognised by a special name and studied with some approach to scientific accuracy. The first writer to describe the condition was Dr. W. Pringle Morgan.<sup>2</sup> His patient was a lad, 14 years old, who, although intelligent in every other way, experienced the utmost difficulty in learning how to read. The defect was so marked

<sup>1</sup> A communication presented to the Society for the Study of Disease in Children, Session 1903-04.

<sup>2</sup> Morgan: Brit. Med. Jour., Nov. 7th, 1896.

that, despite seven years' constant application, he was able to spell out only monosyllabic words. Figures, curiously enough, he could read fluently and simple arithmetical sums were done fairly well. A couple of years after the publication of Dr. Morgan's modest communication Dr. H. C. Bastian<sup>1</sup> described a similar case in a young man, aged 18 years. This patient was so extremely slow in learning to read that his tutor almost despaired of ever being able to teach him. Dr. James Hinshelwood<sup>2</sup> of Glasgow next took up the subject, analysed the cases previously reported, and added two new examples to the growing list. To Dr. Hinshelwood undoubtedly belongs the credit of having been the first to describe the condition scientifically, to assign it to a defect in the visual memory centre for words and letters, and to name it "congenital word-blindness." It is highly probable that but for Dr. Hinshelwood's article the two previous communications would have failed to attract the attention they have since received. Mr. Nettleship<sup>3</sup> next described five cases and in doing so spoke of having been familiar with the condition for many years, thinking and speaking of it as a congenital want of power to acquire knowledge by printed signs. In the year 1902 Dr. Hinshelwood<sup>4</sup> reported two further cases and took the opportunity of elaborating several of his previous arguments with regard to the essential nature and characteristic symptoms of the condition. The other reported cases up to the date of writing include one by Lechner<sup>5</sup> and two by Wernicke<sup>6</sup>.

So far, then, 14 cases of congenital word-blindness have been reported by six authors.

<sup>1</sup> Bastian: Aphasia and other Speech Defects, London, 1898.

<sup>2</sup> Hinshelwood: THE LANCET, May 26th, 1900, p. 1506.

<sup>3</sup> Nettleship: Ophthalmic Review, 1901, p. 61.

<sup>4</sup> Hinshelwood: Ophthalmic Review, 1902, p. 91.

<sup>5</sup> Lechner: Ned. Tijd. voor Geneeskunde, 1903, No. 5.

<sup>6</sup> Wernicke: Centralblatt für Praktische Augenheilkunde, September, 1903.

To conclude, nevertheless, that this congenital defect is rare on account of the small number of cases reported in literature would be to commit a logical fallacy. Almost everybody who has written on the subject, notably Dr. Hinshelwood, has commented upon the fact that cases are not so rare as the scarcity of records might lead one to infer. Slight cases are almost certain to be overlooked in the hospital out-patient room where surgeons are busily occupied and parents seldom capable of giving a clear account of their children's ailments. On the other hand, congenital world-blindness, especially when of slight degree, is much more likely to be recognized in the consulting-room and as a matter of fact most of the cases appear to have been met with in that way. At the same time, there is no present ground for the belief that the condition is commoner in children of the poorer classes. One point should be mentioned—namely, that 85 per cent. of the cases have been reported by ophthalmic surgeons, an observation that goes to show that patients, in the first instance at any rate, usually seek special rather than general medical advice.

The subject of word-blindness is interesting both from the medical and from the educational standpoint, a fact that leads me to place on record two instances—one slight and the other severe—that have fallen under my notice. The facts are as follows.

CASE I.—The patient, a boy, aged nine years, was seen on Dec. 10th, 1898. Although a painstaking boy he had experienced unusual difficulty in learning to spell and to read. Arithmetic also caused him difficulty. He complained that his eyes got sore after doing his lessons. He had considerable powers of observation and of insight. For example, he could carry in his mind the details of a machine or of a building and could reproduce them on paper. He reasoned well. In disposition he was considerate and sympathetic. His

father, an exceptionally cultured man, believed that his son's failure to read was due not to a mental but to a developmental defect. The boy was of a nervous temperament but was tolerably well-grown for his age and apparently in good health. His relative

visual acuity was almost normal ( $V. \frac{6}{6iii}$  and No. 1 Jaeger), but he deciphered the letters on the Snellen distant type in a curiously hesitating way, a difficulty that extended both to the large and small letters. The small types of Jaeger were read slowly and with many mistakes, but what struck me as peculiar was that the larger type on the same test was read with just as much difficulty. Under a cycloplegic: R. V. =  $\frac{6}{18} + 1.50 = \frac{6}{9}$ ; L. V. =  $\frac{6}{12} + 1.50 = \frac{6}{6}$ . The fundi were normal; the fields of vision for white were full; the colour sense was not noted. Spectacles (+1.0 D. spherical) were prescribed for reading and the father was advised to educate the lad privately. When I saw the patient again, some six months later, I found that he had made considerable progress with his reading. The boy died from influenza peritonitis on Jan. 15th, 1904, that is to say, some five years after he first came under my notice. According to information kindly furnished by his father distinct progress had been made in the last year of life. His spelling had improved, especially of Latin words, a language that is more phonetic than English. The improvement had extended to reading and to arithmetic. He was learning to draw from the solid and was doing it well. "I am exceedingly glad," the father wrote, "that, following your advice, I did not send him to school. Now that the little fellow is gone it would have been a life-long regret to me if I had embittered his last year of life by placing him where he could not have learned without pain."

CASE 2.—The patient, a boy, aged ten years, was seen by me on Jan. 15th, 1903. This excitable lad had been affected for about

five years with spasmodic movements of the face, eyelids, mouth, and neck, especially marked when under the influence of emotion with a so-called "habit spasm," in fact. He was brought because he had experienced great difficulty in learning to read and was believed on that account to be "short-sighted." He had never suffered from scarlet fever, rheumatism, or "growing pains." His heart sounds were normal and he was not subject to sore throats, such as many rheumatic children are affected with. He is deaf (=watch close to ear) on the right side, owing to long-standing otorrhoea. The family history was as follows. His great-grandmother died at the age of 75 years from a third stroke and she was paralysed down one side from many years before her death. His mother, maternal grandmother and younger sister had all been affected with rheumatism, the last-named after an attack of scarlet fever. His eldest sister, now 13 years of age, read well when she was eight years old. His father and mother both come from large families, but no reading defect amongst the members had ever been heard of. There were no insanity or hysteria or "fits" and no miscarriages or stillbirths. Upon examining the lad's sight was found to be R. =  $\frac{6}{18}$ ; L. =  $\frac{6}{12}$ . Atropine was prescribed and a few days later refraction was estimated with the

following results: R. V. =  $\frac{6}{18} + \frac{+1.50}{+3.5000} = \frac{6}{12}$ ; L. V. =  $\frac{6}{12} + 4.0000 = \frac{6}{6}$ . The fundi were normal. Glasses were prescribed for constant wear. About a year later (Jan. 13th, 1904) I obtained a much more complete account of the patient's tastes, peculiarities, and defects. He was described as being "as bright as a lark and as sharp as a needle." He pondered over books but did not enjoy them owing to the difficulty of reading them. Hand-writing was read as badly as printed matter and figures were read as imperfectly as either. Dictation was badly done. Although unable to express himself in writing yet he could copy sentences from a printed

book correctly. He was almost unable to learn by heart from a printed page but he could memorise quickly and retain tenaciously anything told or read to him. Thus he learned by rote 14 verses, each containing four lines, in two days and repeated them to me without hesitation or mistake. His memory was excellent. At such games as cricket, football, draughts, and dominoes he could play well. The lad, before he came under my notice, was educated at a boarding-school at the seaside and an inspection of his term reports brought to light certain interesting points. From the earlier reports it seemed evident that his teachers had no idea of the lad's peculiarity, for they characterised him as "inclined to be idle" (Christmas, 1901). In summer, 1902, we find that "he has made especial progress in arithmetic," although it is to be noted that he obtained only 20 per cent. of the total available marks in that subject. A similar comment with regard to arithmetic is made in the report for the term ended Dec. 17th, 1903. In short, the boy's strong subjects were divinity, history, and geography, in all of which he learned the work presumably by the exercise of a very active auditory memory.

It cannot be doubted, then, that there exists a congenital condition not necessarily associated with any other defect (mental or physical) where the learning of letters or of words from printed or written characters is difficult or, it may be, even impossible. This congenital letter or word-blindness may be due, as Dr. Hinshelwood and Dr. Lechner surmise, to a congenital defect in the visual memory centre for words and letters. The fact is probably not without significance that of the total number of cases 13—that is, 82.25 per cent.—have been met with in males. The ages of the patients (given in 15 instances) ranged from seven to 23 years and averaged 13 years. In other words, they usually fell under notice at an age when the nature of their peculiarity would be forced upon the attention of parents

and teachers. A neuropathic family history was forthcoming once only—viz., in one of Wernicke's cases—where the father, an intemperate man, died insane and the patient's elder brother was weak-minded. It may be noted in passing that another brother could play several games of chess simultaneously and also without seeing the chess-board. The two brothers of one of Mr. Nettleship's patients were stammerers. Some of the sufferers from alexia have evidently been of a nervous temperament, as witness one of Wernicke's patients, a female, 19 years of age, said to be hysterical; Lechner's case, a boy, 13 years of age, said to be "very nervous"; and in the two cases described in the present communication. The previous illnesses of the patients offer nothing calling for particular remark. As a rule they enjoyed good health.

Vision was recorded in ten of the cases and was normal in all except two. Refraction, specifically mentioned ten times, was emmetropic once and hypermetropic with or without astigmatism in the remaining nine cases. The fundus oculi was examined in six patients with negative results. The fields of vision and the colour sense were normal in the two cases in which they were investigated.

General intelligence was good in 13 of the 16 cases and may well have been so in the other three cases, but no definite note was made with regard to the point. The ability to read figures existed in seven of the cases, was not noted in seven cases, and was poor in my own cases. In this connexion I may just say that several years ago I saw a lad, aged ten years, who experienced extraordinary difficulty in reading figures without any corresponding difficulty in regard to letters and words. There was a trifling amount of hypermetropia (0.75 D.) but his eyes were otherwise normal. Unfortunately, I saw the patient once only and have failed to trace him since. As to music, mentioned twice only in the series, it was stated that



patients experienced no trouble in that respect. The auditory memory appears to have been developed highly in most of the patients. Thus, one of Wernicke's patients could speak two languages correctly; one of Hinshelwood's patients concealed his difficulty in reading for a time by learning his primer off by heart; Lechner's patient is stated to have known the contents of his school books by rote; and my second patient could memorise well and quickly anything told or read to him.

What improvement can be expected in these cases? It will naturally vary according to the original severity of the case and the educational means adopted. It may be considerable. It may, furthermore, take place comparatively quickly, as shown by one of Hinshelwood's cases, where a boy who had not been able to read after upwards of four years at school made very considerable progress in recognising letters by dint of constant practice during seven weeks." The improvement in these cases is usually described as "slow but satisfactory." Perhaps the most striking case is one mentioned by Nettleship, where a boy who suffered from a marked degree of alexia eventually learned to read easily and 19 years after he was first examined had become a lawyer. It may be concluded therefore that with special training even severe cases of congenital word-blindness are capable of considerable improvement. It is clear, moreover, that the earlier such training is begun the better are the results likely to be. Hence the importance of recognising the defect at as early an age as possible.

The diagnosis offers few difficulties if once the fact be firmly grasped that there is such a thing as congenital inability to read. At least, difficulty would be likely to arise only when the word-blindness co-existed, as in my second case, with a considerable error of refraction. Even in those circumstances the history should guard one against error, while the fact that the patient experienced exactly the same difficulty in reading large

as he did small print would strongly suggest the presence of this curious congenital defect. It is interesting to add that more than one of the case-histories comment upon the fact that the patient never read for pleasure. In view of the particular attention now being paid to degeneracy amongst our poorer school children it is pretty safe to predict that congenital alexia will be found to be commoner than hitherto suspected, even by the medical profession.—*The Lancet*.

## THERAPEUTICS.

### Treatment of Warts with Magnesium Salt

BY

ARTHUR HALL, M.A., M.B., F.R.C.P.

The treatment of multiple warts with magnesium sulphate was originally suggested by Colrat, of Lyons. In dermatological works it is, with a few exceptions, described as of doubtful value. In the following case, the benefit was striking:—

A man, aged 27, had extensive warts of the scalp and forehead. They first appeared 2 years previously and had steadily increased in number. During the last few weeks they had extended from the scalp to the forehead. The whole of the top of the head was thickly covered with warts, some flat or rounded, others large and digitate. Over the affected part the hair was scanty, and there was marked sweating. Besides these there were 2 areas of flat warts over the forehead, situated about each frontal eminence. The local application of salicylic acid and ether had produced little or no effect. In consequence of the great number of warts, and the necessarily tedious process of destroying each separately, the writer suggested the internal administration of magnesium sulphate, but with some scepticism. On Mar. 26 the patient began to take *mistura alba* (magnesium sulphatis dr. i, magnes. carb. gr. xv, sp. chloroform. et aq. menth. pip.) thrice daily.

He found the *mist. alba* somewhat drastic, so took it less frequently. On April 13 not a single wart was left.

It is generally admitted that multiple warts of the hands, or face, or head, in children or young adults, are infectious, and that if the patient pulls the top off a wart and it bleeds, they are liable to spread. Unna writes, "Their frequent rapid spread amongst servants and children, and their equally sudden disappearance make their infectious nature probable." The sudden disappearance of the warts under various conditions, sometimes on the administration of drugs so diverse as magnesium sulphate (Colrat), nitro-hydrochloric acid (Crocker), liquor arsenicalis (Muller, Sympson, and others), thyroid extract, tuberculin and revaccination (quoted by Crocker), seems to point to the disease being due to a microbe, which is comparatively a poor parasite. The slight alteration of the soil produced by these drugs prevents its further growth. A similar result is observed in other parasitic diseases. Actinomyces cannot live in a soil permeated with iodide of potassium, *Brit. Jour. of Dermatol.*, July p. 262].

### The Treatment of Chronic Arthritis with Injections of Vaseline.

BY

KONRAD BUDINGER.

Konrad Budinger injects vase line into joints affected with chronic arthritis in order to alleviate the symptoms due to roughness of the articular surface and to render harmless the synovial excrescences, which by irritation directly contribute to the advance of the disease. Slight cases of arthritis are usually much improved. Severe cases in which there is no prospect of cure are often relieved. In cases of chronic stiffness, "oiling" the joint with vaseline is a useful adjunct to massage and passive movements. Excellent results were obtained after forcible

breaking down of adhesions under an anæsthetic. Frequently these manipulations produce pain or light up an old inflammatory process, so that a result which appeared excellent under the anæsthetic in a few days is only moderate. The loud crackling sounds produced on moving the joints indicate deficiency of synovial fluid, for which vaseline is a good substitute. Suspected tuberculosis is a contra-indication to the method, and it is not without danger during subacute exacerbations of chronic arthritis especially if of gonorrhoeal origin.

Oil or glycerine is rapidly absorbed if introduced into a joint, but vaseline and paraffin remain as when injected subcutaneously. The writer at first employed warm sterile white vaseline, but later found ordinary yellow vaseline, warmed and sterilised, to be more suitable as it has a slightly lower melting point, is more easily manipulated, and acts equally well. The most generally suitable quantities for injection are 4 c.c. for the knee-joint and 1 or 2 c.c. for smaller articulations. If the arthritic changes are advanced larger quantities may be required. After the injection the joint should be moved freely so as to spread the vaseline uniformly over the articular surfaces. The majority of patients treated were out-patients. The injections usually produce pain which appears in from half an hour to 2 hours, and may persist for from 2 to 6 days. Sometimes it is severe. Occasionally they are followed by a sensation of numbness in the limb. "The limb felt as though it did not belong to them," was the complaint of many. Usually there was slight synovitis of a few days' duration; and it was sometimes necessary to immobilise the joints and apply fomentations. In these cases the beneficial effect of the injections was not apparent until the inflammatory reaction had subsided.—*Wien. Klin. Woch.*, April 28, p. 470.

### The treatment of Gonorrhœa in the Female with Yeast.

BY

OTTO ABRAHAM.

Otto Abraham has obtained excellent results in chronic cervical catarrh of gonorrhœal origin with yeast. The most satisfactory form is that contained in "Rheol" cervical bougies made by Hirschfeld of Berlin, which contain yeast combined with asparagin as nourishment. Sterilised yeast ("REVIEW," Vol. IV., p. 575) has no bactericidal action unless sugar is added. Of 27 cases of chronic cervical catarrh 20 were completely cured by "Rheol" bougies in from 5 to 20 days. In one case violent uterine colic followed the introduction of the bougie and ceased only with the extraction of the half-melted mass. The seven cases in which no cure was obtained were either complicated by old-standing disease of the appendages, from which a descending reinfection occurred, or were not of gonorrhœal origin. The treatment is safe in chronic cases of cervical catarrh but should not be applied in the acute stage. Acute cervical gonorrhœa is best untreated, as there is grave danger of causing slight solutions of continuity through which infection is carried to the uterus and adnexa. The bad results obtained by some writers with yeast appear to depend invariably on its ap-

plication in acute cervicitis. But though yeast is inapplicable in acute cervical gonorrhœa it may safely be used in acute gonorrhœa of the vagina. The more acute and recent the case is, the better it acts; in very acute cases both discharge and gonococci may disappear within 3 days. It not only cures vulvitis and vaginitis, but prevents the occurrence of ascending infection. A "Rheol-vaginal ball" should be introduced through a speculum into the posterior vaginal *cul-de-sac* and retained there by a tampon. In cervical catarrh if there is any suspicion of recent injection it is well to begin with vaginal applications of yeast either in the form of "Rheol" or injections of beer yeast as proposed by Landall ("REVIEW," Vol. II. p. 296). The majority of cases of cervical catarrh are cured by the introduction of yeast into the vagina, probably because the yeast cells multiply in the cervical secretion. If no improvement is noted within a fortnight, intra-cervical treatment may safely be begun.

Experiments show that the action of yeast on the gonococcus is not specific as it will also destroy the streptococcus, staphylococcus and proteus, though less rapidly. Thus the gonococcus is destroyed in 6 hours, the proteus in 16 hours, the streptococcus in 32 hours, and the staphylococcus in 40 hours.—*Zentralbl f. Gyn.* Feb. 27, p. 249.



### A NEW SCIENTIFIC OBSERVATION.

[Just at the moment of our going to press we received the following communication from Dr. A. J. Atkins, M. D., of California. As the matter relates to an exceedingly interesting scientific observation we lose no time in publishing it. Our comments on this we reserve for our next issue. Ed. A.]

To

THE EDITOR OF THE ANTISEPTIC.

Dear Sir,

For the benefit of scientific research, I wish to announce to you, the result of my latest experiment, which led me to the discovery and proof of the electrical action of the life principle in the living lungs.

On Thursday morning, Sep. 22, 1904, I performed an experiment on the lungs of a living animal, at the slaughter pens of Messrs. Clayberg and George, South San Francisco, Cal.

Tracheotomy was performed on a living sheep, two especially prepared, small platinum electrodes were inserted, through the opening, into the cavity of each lung; these platinum electrodes were attached, by about thirty feet of insulated copper wire, to a Weston galvanometer. The instant the electrodes reached the air-chambers of the lungs, the needle of the galvanometer moved from zero point, alternately to the right and to the left, the full length of the scale, at each breath of the animal. This action proves conclusively that there is an electrical current in the living lungs, also, that the current alternates from positive to negative, with perfect rhythm, at each breath of the animal.

The introduction of oxygen gas into the lungs, during inspiration, accelerated the action of the needle, thereby showing that oxygen increases the electrical action taking place.

In this experiment I was assisted by Drs. H. W. Hunsaker and E. A. Lewis, also by Mr. E. H. Forst, an electrical expert, all of whom reside in this city. Numerous others witnessed the experiment, and all are willing to bear witness to the details herein described.

I am earnestly yours,

ALBERT J. ATKINS, M. D.,

*Prof. of Physiology, Cal. Medical College,**President of S. F. County Society of Physicians and Surgeons.**Member of Astronomical Society of The Pacific Coast, etc.*

# The Antiseptic.

Vol. I.]

DECEMBER, 1904.

No. 8.  
Annual Sub-  
scription Rs. 5

## Original Articles.

### \* ANÆSTHESIA FOR ADENOID OPERATIONS,

BY

THOMAS D. LUKE, M.B., F.R.C.S., EDIN.,  
*Instructor in Anæsthetics (University  
Wards), Royal Infirmary, Edinburgh.*

The choice of the anæsthetic in operations for removal of adenoid vegetations in the naso-pharynx is a matter of very considerable moment both to throat surgeons and to the general practitioner. The removal of these growths under a general anæsthetic is fraught with more than ordinary risk, owing to the free hæmorrhage which usually takes place, necessitating special posture of the patient and careful sponging in order to avoid the entrance of blood into the respiratory passages, which might lead to immediate symptoms of asphyxia or to the subsequent supervention of bronchitis or pneumonia. Difficulties have occurred from time to time also from the curette breaking and portions of it and the adenoid growth causing respiratory obstruction. In short, there is throughout the operation, from the moment at which the anæsthetic is commenced to the ultimate return of consciousness and voluntary coughing and

vomiting of the patient, a tendency towards respiratory obstruction, greater in some cases than others. Now, one of the worst possible combination of anæsthetics is chloroform and  $\text{CO}_2$  (carbonic acid gas), so that when chloroform is used for this operation its ordinary risks are considerably enhanced.

Authorities differ very widely both as to the best position for carrying out the operation, and, further, as to the best anæsthetic agent.

As regards *position* there are four which are rivals for the throat surgeon's favour.

1. **The lateral posture** is that which finds most favour with London surgeons. In this the patient lies on his side with his knees flexed, and the upper limb slightly in front of the lower; by this means the patient is kept from rolling on to his back, and a slightly forward inclination is given to the whole body. As far as the anæsthetic is concerned this posture is distinctly the most advantageous, since any embarrassment of the breathing from presence of blood in the throat is prevented, as the blood gravitates on to the dependent cheek, and can readily be removed.

2. **The dorsal posture**, with the head extended over the end of the operating

\* Specially contributed to "The Antiseptic."

table. This is commonly known as "Rose's position," but attention was first drawn to the advantages of it in throat surgery by Professor Annandale in 1878.\* This position has been very widely used, and next to the lateral posture is most advantageous as regards the anæsthetic, which many operators do not consider so convenient. The risk of blood or portions of the adenoid growth falling into the larynx are really infinitesimal. If the operator is reasonably dexterous and sponging is carefully and thoroughly carried out (this being an essential factor for safety) time is not afforded for sufficient blood to accumulate to reach "the high water mark," so to speak, of the rima glottidis and fill up the whole naso-pharynx. Before this can occur the patient is drawn up on the table and his face turned to the left or right, with the head somewhat raised, so that ample drainage is provided, as in cases where the lateral position is adopted in the first place. The chief disadvantage of this position is that some obstruction to the venous return is produced, if the head be hyperextended and the bleeding, in any case sufficiently profuse, increased. To prevent this it is advisable for the anæsthetist to support the occiput slightly with one hand or to have a little rest clamped on to the end of the table for the purpose, as Dr Nyulasy of Melbourne has suggested.

3. **The dorsal posture.** The head but not the shoulders is slightly raised by means of a small cushion or pillow. The objection to this position is that no provision is made for the escape of blood by gravitation, and it is absolutely of vital importance that the most assiduous sponging be kept up throughout, by the

anæsthetist. The head must never be allowed to become extended, and if the hæmorrhage is unusually free should be turned to one side.

4. **The sitting up posture.** If gas and ether or ethyl bromide be used this position is commonly adopted and finds favour with a number of surgeons. It is of course quite unsafe to administer chloroform in this position unless preceded by a full dose of ether, and even so is undesirable.

With regard to the anæsthetic used authorities differ very much.

**British:**—Sir Felix Semon, Greville McDonald (except in adults) Barr, Walker, Downie, prefer chloroform.

Watson Williams prefers it in the longer cases.

For the shorter cases he finds nitrous oxide answer, as did the late Lennox Browne, who was a very strong opponent of chloroform for this purpose.

In most of the London throat hospitals nitrous oxide alone or followed by ether has been used as a matter of routine for many years.

In Edinburgh McBride has entirely abandoned chloroform in favour of chloride of ethyl for this operation, so also has Logan Turner, while Browne Kelly\* of Glasgow uses bromide of ethyl almost exclusively and has employed it on nearly two thousand occasions.

**American:**—Coakley uses ether for patients over six years of age and chloroform for those under six years.

Grayson does not employ general anæsthesia in all cases, but if he considers it

\* See "B. M. Journal," Oct '02.

advisable he prefers ether to the point of insensibility to pain, preserving the laryngeal reflex.

Birkett always uses ether, and prefers to have general anæsthesia.

Roe prefers chloroform or Scleich's mixture.

Kyle prefers chloroform, as does Ingall.

Bishop uses ethyl bromide, which Price-Brown speaks favourably of also.

**European.**—In Germany many cases are operated on without a general anæsthetic, but chloroform and ethyl bromide are largely used.

In France chloroform is the favourite anæsthetic but is now being displaced by ethyl chloride.

My own opinion is that for the very large majority of adenoid operations the best anæsthetic which we possess at the present time is chloride of ethyl. I have never used nitrous oxide for the purpose, and think it is quite unsuitable, as the available anæsthesia is much too short, while the bulky apparatus necessary renders it unsuitable for private practice. Gas and ether have been found of great service but ethyl chloride and ether is a much better and much more portable combination. Ethyl bromide is convenient, if it be possible to obtain the drug from an undoubtedly reliable source, but the method of producing narcosis is somewhat brutal and alarming to nervous patients.

In view of the comparatively high death rate under chloroform its use is not to be encouraged in this field, for, since the introduction of ethyl chloride, it is quite uncalled for if not unjustifiable.

**Ethyl chloride.** The chief advantages which can be claimed for this anæsthetic

are the following:—

1. Its rapidity of action. Only 45 to 75 seconds required to obtain full anæsthesia.

2. The duration of the anæsthesia compares very favourably with that obtainable by means of any other anæsthetic, particularly nitrous oxide or chloroform, from one administration, and it may be considerably increased when the administrator is skilled and experienced.

3. It causes no change of colour nor cyanosis under ordinary conditions.

4. The administration is extremely simple in technique.

5. The drug is extremely portable and will stand variations of climate well, owing to its being stored in what are practically hermetically sealed flasks.

6. Compared with other anæsthetics it is by no means costly.

7. The after effects are very slight, patients usually making a quick and good recovery.

8. It is a very safe anæsthetic when administered with ordinary prudence and precaution.

The comparative death rate of anaesthetics is as follows:—

Ethyl chloride 1-16,000, Ether 1-12,000, Ethyl bromide 1-4,000, Chloroform 1-2,000, Nitrous oxide, impossible to calculate.

Ethyl chloride as employed for general anæsthesia is identical with the drug which has been used for nearly twenty years to produce local anæsthesia by freezing, only additional precautions are taken to insure absolute purity during its manufacture.

\* "Lancet," Nov. 1878.

There are a number of reliable brands on the market, one of the best being that prepared by a well-known firm of Edinburgh chemists, long famous for their anæsthetic products. The drug keeps well when properly stored and has no tendency to undergo decomposition. It is usually put up in 60 c. c. flasks with automatic stoppers, but also in sealed capsules containing 3 c. c. and 5 c. c., which are particularly handy and to be recommended for the use of beginners, as there is no risk of giving an overdose when one of these is used.

**The administration.** All that is necessary for the administration, as regards inhalers, is the face-piece of a Clover's ether inhaler, with an angle tube junction, having a small opening about  $\frac{1}{8}$  of an inch in diameter on the upper side of its horizontal arm and fitted with a stopper. Attached to this must be a one gallon rubber bag, just as used with a Clover or, what is better, one made of the material known as "Mosetig Battist" or "Bill-roth."\*. This is best adapted for tropical climates and can also be easily sterilised, which is a desideratum in hospital practice particularly. One yard of Battist is sufficient to make four bags of the proper size.

The material is taken and laid out flat, doubled, so that the shiny surface is on the inside. Place the pattern on it (using no pins), cut the bag out and then stitch around it, leaving a margin of  $\frac{1}{8}$  to  $\frac{1}{4}$  of an inch, keeping the shiny sides together. Turn inside out, and stitch round again, making a flat seam. The bag is then inverted and ready for use, being air and water tight, just like the rubber ones.

The neck of the bag requires to be wider than that of a rubber one, as it will not

stretch but must be tied on to the angle tube with a piece of twine, or rubber ring.

The patient requires no special preparation beyond not having taken solid food for about 3 or four hours.

He should be laid in the supine position at the start, and if the head is to be lowered this should be done only after anæsthesia is induced. The face piece is carefully adapted to his face and about 3 c. c. of the anæsthetic sprayed into the bag through the hole in the angle tube, before mentioned, the patient being instructed to take quiet, even respirations. In about half a minute other 2 c. c. may be added. The respirations rapidly deepen and increase in rapidity, and the patient's face flushes somewhat. In about 50 to 60 seconds commencing stertor will be noticed with moderately dilated pupils. The inhaler may then be removed and the operation proceeded with. Where a long anæsthesia is needed the inhalation may be kept up for 90 seconds or more if there be no indication to the contrary in the patient's symptoms.

McCardie, to whom great credit is due for bringing this anæsthetic prominently before the notice of the profession in Great Britain, finds the average period of induction is 50.9 seconds and the average duration of anæsthesia 71.3 seconds; but both will vary at the will of the administrator, the age of the patient and the amount of the anæsthetic used.

One drawback which this anæsthetic has, is that there is no relaxation of the jaw present, practically, although the anæsthesia may be fairly deep; indeed with deepening anæsthesia there is a tendency to muscular spasm throughout the body, which becomes marked if the drug

be unduly pushed. Accordingly some care is needed to arrange that the mouth be easily opened and no time be wasted just before the operation. With very young children a Croft's gag with closely adjusted levers which can be easily slipped in between the teeth will be sufficient and the resistance of the masseter easily overcome. With older children who can be expected to act more or less intelligently a small dental mouth prop may be inserted at the commencement, before starting the anæsthetic, on the opposite side from that which the gag is to be put in. When the patient is anæsthetised, a gag, and for this purpose Doyen's is the best, is slipped between the slightly separated jaws and opened up, the dental prop being allowed to fall out. In well-developed young adults the resistance offered the masseter is sometimes very great, and some time may be wasted in getting the jaws properly separated. Where any difficulty like this is anticipated the inhalation of ethyl chloride should be supplemented by a few breaths of ether, which will be sufficient to relax the jaw and prolong the period of available anæsthesia for at least a minute. Where both tonsils and adenoids are to be removed this will be very useful.

The use of the gag in young children occasionally displaces some of the loose temporary teeth, and I have known three or four fall out in one case. This is of no moment if the operation is being done in Rose's position and the operator notices the accident, as he will see they are removed from the naso-pharynx (where they will in all probability be lying) before the patient is restored to the horizontal position, but in the third and fourth postures which we have described it may give rise to serious trouble.

Immediately at the conclusion of the operation raising of the patient's head both lessens the bleeding and aids the expulsion of the blood lying around the back of the pharynx and glottis by making the patient cough.

In conclusion then:—

1. For all ordinary adenoid cases, especially in young children, ethyl chloride seems the best possible anaesthetic.
2. For adenoids complicated with large tonsils it is also well adapted, but in certain cases it will be advantageous to supplement it with a few inhalations of ether.

If ethyl chloride is not available a mixture containing one part of chloroform with two parts of ether administered very carefully up to the abolition of the cough reflex recommends itself as the best alternative.

#### Illustrative Cases.

1. Male, aet. 2½ years. Adenoids and tonsils. Ethyl chloride 5 c. c. was used. Induction 75 seconds. Available anæsthesia 120 seconds. Pupils well dilated. Not enough sponges provided.
2. Male, aet. 10 years. Adenoids 5 c. c. of ethyl chloride used. Induction 65 seconds. Available anæsthesia 120 seconds. A mouth prop inserted at the start.
3. Male, aet. 5 years. Adenoids. 10 c. c. Ethyl chloride used on a Breuer mask (without bag). Induction 45 seconds. Available anæsthesia 105 seconds. (Note waste on anæsthetic.)
4. Female, aet. 5 years. Adenoids. 3 c. c. Ethyl chloride sprinkled on a handkerchief and inhaled long enough to make the child—a very nervous one—drowsy, when 3 c. c.

\* McCardie—"Lancet," April '04.



more was introduced into bag and inhaled to produce full anæsthesia.

5. Male, aet. 7 years. Adenoids. 5 c. c. Ethyl chloride. Induction 2 minutes and same duration of anæsthesia.

6. Female, aet. 9 years. Adenoids. Only 5 c. c. ethyl chloride inhaled for 120 seconds. Available anæsthesia 2½ minutes.

7. Male, aet. 12 years. Adenoids and tonsils. 5 c. c. ethyl chloride. Induction 2 minutes. Anæsthesia 150 seconds. Some vomiting.

8. Male, aet. 4 years. Adenoids 6 c. c. Ethyl chloride used. Induction 2 minutes. Anæsthesia 3 minutes. Child very drowsy afterwards.

9. Male, aet. 17 years. Adenoids and tonsils. A strongly built youth. 4 c. c. Ethyl chloride inhaled for one minute and followed by 6 to 8 breaths of ether from a Clover. Good anæsthesia for 2½ minutes, with completely relaxed jaw. No sickness.

10. Female, aet. 22 years. Adenoids and tonsils. 5 c. c. ethyl chloride given and followed by two minutes' inhalation of C.E. mixture on a cone. 3 minutes' good anæsthesia; very free bleeding. No vomiting or discomfort afterwards.

### PATENT MEDICINES.\*

BY  
Surgeon-Major R. E. Wrafter, B. M. S.  
(Retired), Dehra Dun.

There are few medical men in India who have not met with instances where there was a serious abuse of the use of patent medicines of unknown composition, and it should be equally evident that the popular idea of this medicine for that disease must be erroneous, and hence that patent medicament, vaunted to cure all or

even many maladies in all persons, must be unequal to so desirable a result. Under any circumstances, only drugs of great reputation with the medical profession should be prescribed with absolute safety. It must never be forgotten that children are very susceptible to the influence of opiates; on this account, the greatest caution is required in prescribing patent or other medicines which contain opium and its alkaloids, for them, and the dose must be very minute. As a rule, they should never be ordered by any one but a medical man, and their action should be carefully watched. Taking the community generally we will therefore only quote from Dr. Hutchison's valuable lecture his statements as to the ingredients of several very popular and well-known "proprietary preparations" mostly in request, which can be procured from local chemists, who deal largely in patent medicines. Very many of these, however, deteriorate by climate, and the adulterations of the various excellent formularies, ever have to be remembered. It has been said, could all the people be restored to life who have been hastened to the grave by strong drugs and quack doctors, we should not have standing-room for those now living. There are few persons but what are not ailing in some way or another. Experience has taught us that the old way of doctoring with all sorts of powerful drugs and deadly nostrums is wrong, still there are some ignorant people who believe in the doctrine. If grown persons will only understand that the hand scythe has given way to the modern mowing machine, stage coaches to the steam cars, the tallow dip to the electric light, so it must be with medicine—big doses of calomel, quinine, etc., must step aside for more

humane, gentle, and effective treatment. Our present law of cure is based upon new and scientific principles, which is rapidly superseding all ancient schools of medicine, now almost extinct. Beecham's Pills, now advertised in all languages in our Indian Railway Stations, consist of soap, aloes and ginger; Carter's Little Liver Pills contain podophyllin  $\frac{1}{8}$  grain and aloes  $\frac{1}{4}$  grain in each pill; Holloway's Pills are made of aloes, rhubarb, saffron, Glauber's salts, and pepper; Eno's Fruit Salt consists of bicarbonate of soda, tartaric and citric acid; Abbey's Effervescent Salt and Lamplough's Pyretic Saline are very similar; Keating's Cough Lozenges are made of ipecacuanha squills, lactucaria, liquorice and sugar. In two preparations for gout, colchicum is the active ingredient; meadow saffron is a useful remedy in gout and rheumatism, but requires to be watched, as it often produces pain in the bowels. Antikamnia consists of bicarbonate of sodium, antifebrin and probably, caffeine; Bunter's Nervine is made up of creosote, chloroform, camphor, tolu and alcohol; Mrs. Allen's Hair Restorer consists of acetate of lead, milk of sulphur, scented with oil of cinnamon; Tacho, it is well known is made of purified oil of paraffin and oil of lemon; Koko is merely borax, glycerine and rose water. The remedies for obesity are many, among them we find Trilene Tablets to consist of sugar and an unknown vegetable constituent, all fat people can be cured by taking them; Russell's "Cure" is citric acid (40 gr. to 1 oz.), glycerine and water; Californian Syrup of Figs (The Family Laxative) is senna, fig and cinnamon, the active ingredient being senna; Doane's Backache Pills are oil of juniper and a resinous constituent like copaiba; Guy's Tonic is no more than phosphoric acid dilute, cochineal, gentian,

and chloroform water. To trace the history of Guy's Tonic from its inception, to the prominent position it now occupies, is to record a career of success without parallel in the annals of medical research. The active constituent of Clarke's "Blood Mixture" is iodide of potash; "Pink Pills" consist of sulphate of iron, liquorice and an alkaline carbonate, coloured with carmine; Seigel's Syrup contains aloes, capsicum, treacle and liquorice; Warner's "Safe Cure" is nitrate of potash (10 gr. to 1 oz.) and various diuretic herbs; Antidipso is chlorate of potash and sugar. The run on quinine is very heavy. Procurable in the Indian bazaars, are various other drugs, simples, musty seeds, such as the apothecary in "Romeo and Juliet" dealt in, also alum, borax, camphor, catechu, chiretta, copper, sulphate of galls, ginger, nitre, pomegranate, poppy-heads senna, sulphur, likewise mustard, poppy, linseed, castor, lemon-grass and omum oils. It will be admitted that in most of the above patent preparations the activity is largely due to some aperient substance, especially those containing aloes, and certainly many of them are elegant examples of pharmacy. Why then, as these preparations contain nothing new, and nothing mysterious, are they so popular that the revenue from the stamp duty on their sale amounts to no less a sum than £300,000? Dr. Hutchison thinks this is partly due to the existence of a large amount of minor ailments, which people do not consider it worth while consulting a medical man about; but there is more, there is a subtle physiological reason for their success. None of us like to confess to failure in the treatment of a case, and this is specially true of the man who tries to cure himself. The man who buys a bottle of patent medicine becomes his own doctor, and if he gets well he thinks much of himself and tells

\* Specially contributed to "The Antiseptic."

his friends what a clever fellow he is. Hence the successes are talked about and the failures buried in obscurity.

**Portable Medicines.** The following medicines are manufactured into a very portable and a palatable form termed tabloids by Messrs. B. W. & Co. These compressed tablets may be conveniently substituted for the ordinary remedies for use on emergencies.

Bromide of Potassium 5 and 10 grain tablets.

Chloral Hydras 5 grain tabloids.

Dover's Powder 5 grain tabloids.

Ipecacuanha Powder 5 grain tabloids; for infants,  $\frac{1}{16}$  grain

Opium, Camphorated

Tincture of (Paregoric) 15 minim tabloids.

Podophyllum Resin

Pills Compound in tabloid form.

Quinine 1, 2, 3, and 5 grain tabloids.

Sal-Volatile tabloids of carbonate of ammonia equivalent to 1 drachm of sal-volatile.

Ammonium Chloride 3, 5, and 10 grain tabloids.

Iron, Sulphate of 3 grain tabloids.

Potash, Nitrate of 5 grain tabloids.

Soda, Sulphate of half-drachm tabloids.

## \* SURGICAL APHORISMS,

BY

DR. RUTHERFORD MORISON, M.B. (EDIN.),  
F.R.C.S. (Eng.),

Surgeon, Newcastle-upon-Tyne  
Royal Infirmary.

LIP.

A hard crack on the lip of an elderly person, which does not heal after one

\* Specially contributed to "The Antiseptic."

week of careful treatment, should be excised

### TONGUE.

A "plastered" tongue indicates fever.

A moist brown tongue suggests loaded bowels.

A dry brown tongue suggests failing circulation.

A moist scarlet red tongue suggests pus.

A dry red tongue suggests failing assimilation.

An ulcer on the tongue which does not heal immediately after all visible causes of irritation have been removed should be regarded with grave suspicion. Nitrate of silver can do it no good. Under cocaine, remove a bit of it for immediate microscopic examination.

In a subject past middle age, cotton wool in the ear and an ulcer on the tongue, suggest cancer.

### THROAT.

An "attack" of hoarseness which does not pass off demands in the middle aged laryngoscopic examination. It suggests cancer of the larynx.

At least nineteen of twenty strictures of the œsophagus are malignant.

An œsophageal stricture low down produces regurgitation of food, which the patient usually describes as vomiting. If the food returned is acid in reaction, it has come from the stomach.

### STOMACH.

Do not decide upon "cancer" as the diagnosis unless there are unmistakable physical signs of it.

A simple chronic ulcer at the pylorus causes severe pain, coffee-ground vomit-

ing, a tumour resembling cancer and anæmia with debility.

Tuberculous tumours of the pylorus are indistinguishable from cancer except by the microscope.

A large sudden hæmatemesis without other stomach symptoms seldom recurs. After one outburst the bleeding ceases.

\* Hæmatemesis occurring in the course of a chronic ulcer recurs again and again. It requires surgical consideration.

\* Hæmatemesis unaccompanied by mælæna points definitely to stomach as distinguished from duodenal ulcer.

Perforating duodenal ulcer is a disease of dyspeptic males between twenty and forty.

Perforating gastric ulcer is a disease of anæmic females from eighteen to thirty.

An emaciated chronic dyspeptic who vomits a large quantity of foul yeasty matter at night, has a dilated stomach due to simple stricture of the pylorus, and requires operation.

In every abdominal case attended by pain and vomiting, first *examine the hernial sites*.

### ABDOMINAL TUMOURS.

In men nine out of ten abdominal are malignant.

In women nine out of ten abdominal swellings are the pregnant uterus.

In women, before concluding that any abdominal tumour requires operation, exclude the possibility of pregnancy or of distended bladder.

Tubercle is the most common cause of indefinite pelvic and abdominal swellings which do not conform to the ordinary types of tumour.

Stony, hard, tender nodules on any tumour suggest cancer.

Ballottement suggests pregnancy or cancerous peritonitis; very rarely it may be caused by an ovarian or uterine tumour surrounded by free fluid.

### LIVER.

A very large painless tumour in the right hypochondrium suggests hydatid of the liver.

Severe spasmodic gastric pain followed by jaundice suggests gall-stones.

A hard round tumour under the right costal margin, preceded by a history of "spasms," is likely to be an enlarged gall-bladder with a stone blocking its neck or the cystic duct.

Violent attacks of "spasms," followed by jaundice and with no swelling of the gall-bladder, suggests that a stone has lodged in the common duct.

A gall-stone in the cystic duct causes gall-bladder tumour and no jaundice; in the common duct, jaundice and no gall-bladder tumour.

Jaundice and a gall-bladder tumour suggest malignant disease blocking the common duct.

Jaundice and an enlarged nodular liver suggest secondary cancer of the liver.

The indications for operations in gall-stone cases are:—

Repeated attacks of gall-stone colic.

Distension of the gall-bladder.

Persistent jaundice.

The ascites of liver cirrhosis is often preceded by marked tympanitic distension of the abdomen.

### INTESTINES.

Inability to pass flatus and severe rumbling pains in the abdomen are reliable symptoms of intestinal obstruction.

The most reliable sign is visible or palpable increase of peristalsis.

In adults the most common cause of acute intestinal obstruction is tubercle (adhesions), of chronic obstruction is cancer (stricture).

Acute obstruction is usually due to a lesion of the small intestine; chronic, to lesion of the large one.

Not less than 90 *per cent.* of the most acute cases of intestinal obstruction die if treated by opium. Immediate operation is the only satisfactory treatment. Delay of a few hours may mean death.

In the less acute cases, if a single good dose of opium fails to give relief—operate.

After a single dose of opium which has relieved give one ounce of castor oil and an enema. If these cause a return of the symptoms—operate.

Rumbling pains of some duration and increasing difficulty with the bowels, in a stout patient over 45, suggest malignant stricture of the sigmoid.

A hard nodular tumour in the course of the colon, associated with rumbling pains, alternating constipation and diarrhoea, difficulty in voiding flatus and occasional blood in the stools, is a malignant tumour of the colon.

Both require early operation.

Chronic obstruction of either small or large intestine causes hypertrophy of the gut.

Forcible contraction of the hypertrophied coils of small intestine causes a ladder-like pattern; of the large intestine, prominence of and succession in the caecum.

Examine the rectum in every case of "diarrhoea" in persons past middle age.

"Diarrhoea" and "sciatica" are symptoms of cancer of the rectum.

A growth in the rectum resembling a hard and nodular uterine cervix is a cancer of the rectum.

Uncomplicated "piles" are painless. Examine the rectum if pain is a symptom.

In hæmorrhoid cases, examine the abdomen for tumour, the liver for cirrhosis, the heart for valvular disease, and the rectum for cancer.

A "sentinel" pile marks the outer end of a fissure; a small polypus, its inner limit.

A fistula may sometimes be felt though not seen. From the rectum it appears as an induration in the ischio-rectal fossa. Its inner opening is never more than "three-quarters of an inch above the anus.

#### PERITONITIS.

Tenderness and rigidity of the abdominal wall are the most reliable signs of peritonitis.

Appendicitis is the most common cause of acute peritonitis.

The other causes are gross lesions, producing acute sepsis.

The treatment of all is removal of the cause before sepsis has diffused widely over the peritoneum.

Operation can, by removing the cause early enough, prevent dangerous peritonitis in the majority of instances.

Operation is usually too late if deferred till the diagnosis of general peritonitis is assured.

Cancer and tubercle are the common causes of chronic peritonitis.

Tuberculous and malignant peritonitis often present the same physical signs.

Victims to tubercle are often pallid; to cancer, often florid.

#### APPENDICITIS.

When acute, commences with sudden abdominal pain, attended by sickness, rise of temperature, and rigidity and tenderness in the right iliac fossa.

If the pain is severe enough to entirely prevent sleep for a night, if vomiting is repeated, or if the pulse is over 100—operate.

If a sudden severe pain follows two or three days of aching and malaise, the appendix is gangrenous and perforated—operate.

If a tender definite iliac swelling is found after the third day of the attack, there is an appendicular abscess—operate.

If a tender spot or a tender nodule, or pains on exertion, or uneasiness, or constipation and dyspepsia are left after recovery from an attack—operate.

After two definite attacks, however mild—operate.

#### THE SPLEEN.

A very large spleen, with no evidence of illness, suggests a fatal blood disease.

Think of alcohol in cases of morning sickness, morning diarrhoea, morning cough, and restlessness to the extent of inability to lie in bed till a reasonable hour in the morning.

The first signs of *waxy disease* are diarrhoea, albumen in the urine, and epistaxis.

#### DISEASES OF WOMEN.

Never neglect the history of a missed menstrual period.

A healthy woman previously regular whose period has been missed for a week is probably pregnant. If she is attacked by sudden severe abdominal pain, followed

by fainting or collapse, suspect ruptured ectopic gestation.

Amenorrhoea, with increasing monthly attacks of pain, suggests mechanical obstruction to the escape of menstrual products.

Uterine hæmorrhage in a woman beyond the menopause suggests cancer of the uterus, and demands immediate investigation.

A sloughing polypus of the uterus will cause foetid discharge, profuse hæmorrhage, and the "cancerous cachexia."

Think of alcohol as a possible explanation of uterine hæmorrhage when no satisfactory local cause is discoverable.

Uncomplicated simple ovarian and uterine tumours are unattended by pain. Pain suggests complications or malignancy.

If a tumour has been recognised and sudden abdominal pain develops, followed by vomiting, tenderness and swelling of the tumour, perhaps some uterine hæmorrhage, and peritonitis commences, an ovarian cyst has twisted its pedicle.

Beware of surgical interference with the young woman who has been ministered to by charitable ladies and the clergy, whose "agonising suffering" has been so patiently borne that she deserves the crown of martyrdom, and who tolerates rectal and vaginal examination without a groan.

#### IN ALL CASES

Beware of the diagnosis of hysteria, neurosis or neuralgia, unless organic disease can be excluded with certainty.

Remember that exploratory incisions should not be made a cloak for diagnostic incompetence.

## Cases and Comments.

### Treatment of Aneurisms with Collodion,

By

TARAKNATH ROY,  
Medical Officer, Police Hospital, Calcutta.

I have used, in some cases, a method of treatment which is not explained anywhere; but which is so simple and efficient that it is surely worthy of consideration. As we shall see later, this method cannot be practised in the treatment of large aneurisms, but it is extremely useful in cases of small ones, which are of such frequent occurrence about the temporal and frontal regions of the head. The treatment consists simply in making use of collodion to act as a pressure over the part.

Collodion produces pressure by its contractile power. It can readily be demonstrated by painting a thick coating of it on any smooth surface of the body. As soon as this coating becomes dry, a depression in the centre of the painted area will show that the pressure is being made at that point.

In order to show that this pressure is real and not apparent, we may select some large superficial veins in the fore-arm or any place and carefully paint collodion along its course. When this coating becomes dry, we shall see that the vessel below the lower margin of the collodion is swollen, very much as if a finger were pressed upon it above; shewing us that actual pressure is being made by the collodion. So these facts readily show how this pressure may be utilized in obliteration of small aneurisms.

My first case in which a trial of the collodion was made, will prove a good instance as to the efficacy of this method of treatment.

A strong young man, aged 25, one day came to me with a tumor about the size of a hickory-nut (*akkrote*) in the region that corresponds to a branch of the anterior temporal artery. The history of the case was that, about a few weeks previously while he was playing with an Indian club or *lathia*, he had accidentally struck his head on the spot where the tumor now existed. A small tumor developed almost immediately, and had been slowly enlarging ever since that time. This tumor disappeared when pressure was made upon it, but only to return as soon as the pressure was removed. Pulsation could be felt, as well as seen, shewing the tumor to be nothing but an aneurism.

Having somewhat experimented with collodion, in cases of Varicose Vein, I determined to try it in this case; as an operation would not be submitted to, and pressure on the part by a bandage produced intolerable pain. With a swab of cotton wool I painted on a coating of collodion over the aneurism; and for a space of about a quarter of an inch around the sides. I then blew lightly upon it, to dry the surface, and made a pressure with my finger upon the centre of the painted area.

Now, on removing my finger, I found that a small mass, the size of a small pea, was still to be seen in the centre; proving that the layer of collodion was not quite sufficient to produce all the necessary pressure. Another coating was then, therefore, painted on, and digital pressure was again made till dry; when, again on removing the pressure, a flat surface, covered

with dried collodion, was seen, with the pulsating tumor entirely obliterated.

After this, two or three more coatings were painted on, until the region of the aneurism was covered and an actual depression existed, showing the strong pressure being made by the collodion. The coating of collodion thus formed was allowed to remain as it was, for five days, till it was loosened and peeled itself up around the margins. It was at once separated, and a coating similar to the first again applied; and when this showed signs of loosening, a third coating was similarly painted on. This last peeling-up of the coating was removed exactly two weeks from the time that the first was painted on; and it was found that the aneurism had nearly disappeared; a small mass half the size of a pea being all that remained. This small mass also disappeared without treatment in a few weeks' time.

Since this case I have tried collodion with equally satisfactory results in several other cases of aneurisms and varix, where pressure was needed. The only care that need be used is that the collodion must be of good quality; for poor collodion has no contractile power.

### A Case of Fever Controlled by Mercury and Iodine,

BY

JAMES HARRIS, L. M. & S.,  
Broadway, Madras.

A lad, Natarajen, *æet* 8, after being attended to some days by a few *Vythians* was brought into my consulting room for examination. A history of fever of a regular intermittent type was given. A mild

purgative, however, with Santonine produced a few offensive motions with two large round worms. I was glad to hear of the report of the appearance of the worms and expected a speedy recovery. There was a cure and it was temporary. The fever started again. The morning, or rather diurnal, temperature was normal and the exacerbation reading 105° was always nocturnal, with a general rise with or without rigors, if at all with a slight chilliness of the extremities. There was enlarged spleen, liver, a few moist rales of the lungs, duplication of the heart sound at the apex, with a revolting stomach—all indicating stagnant circulation of the mesenteric portal and pulmonary organs, against which the heart seemed to struggle. Quinine checked the symptoms for a while, only to reappear in a day or two. A change was recommended and he was benefited only as regards the temperature, which went down from 105° to 100°. The lad was reported to lose flesh rapidly, and as I could not afford to visit him at a distance of 7 miles from the city his return was advised and he was brought back to Madras. On examination the lad was found to be very thin. The spleen was only slightly enlarged. The liver could not be felt beyond its normal position. There was a little cough without physical symptoms of any importance. The heart was weak but regular. The old story recurred. The temperature in the morning became normal and it gradually rose towards the evening, culminating in 105° at 9 P. M., and went down with equal regularity towards the morning. Nitric Acid and Cinchona were then tried with marvellously good results for about seven days, only to be followed by a further relapse.

His urine was then examined and revealed a large quantity of Peptone, a trace

of Albumen precipitated only by Tauret's Solution and a marked quantity of Indicin. Carbolic Acid 2 grs., three times a day, removed the Peptone in 24 hrs., but the fever pursued the former course with the usual regularity, in a milder form. I was very much puzzled and the examination of the blood under the microscope was made with a negative result for malaria, as none of those extraordinary sporocytes, microgametes, zygotes were discovered. The patient began to complain of severe nocturnal pains in the limbs, sternum and the scalp; and meteoric swellings on the sternum, then on the cervical region with the inflammation of a few glands of that region, and general cellulites of the face, almost jeopardising life, appeared in turn, the temperature remaining the same with an unremitting regularity. Icthyol and Glycerine when applied suppressed the swellings.

I read somewhere (I do not remember the author) in fevers of the type alluded to, syphilis should be suspected. So a careful examination revealed serrated incisors, small ulcers at the mucocutaneous junction of the oral region, fissures in the tongue with the characteristic appearance of the symptoms of syphilis in the anus. The following mixture was prescribed:—

|                         |          |
|-------------------------|----------|
| R. Liq. Hydrarg. Perch. | m. v.    |
| „ Pot. Iod.             | gr. iii. |
| „ Tinct. Gentian        | m. xx.   |
| „ Aqua                  | oz. ss.  |

Make one dose, to be taken thrice daily.

To my great satisfaction there was no rise of temperature in the evening. A steady and uninterrupted improvement

followed and the patient is now convalescent, the mixture being still continued.

## Two Cases of General Paralysis of the Insane,

BY

M. G. NAIDU, M.B.,  
*Hyderabad, Deccan.*

### CASE No. 1.

**A. N. B.**—aged 45—a high caste Brahmin gentleman of literary tastes, at one time sub-Editor of an influential Indian newspaper, and author of several social and political pamphlets—was noticed by his friends, early in 1902, to behave in an eccentric manner. He was engaged at the time on some historical work, but his ideas and statements were distinctly megalomaniacal. His friends passed over it with a laugh, putting it down to the influence of morphia, to which he had become addicted recently. He was a free-liver, and at one time indulged in alcoholic and sexual excesses, to which an enlarged liver, and scars of tertiary syphilides bore eloquent testimony. For a whole year, though his mental condition steadily grew worse, and probably because of it, he was treated more as a butt for his friends' practical jokes than as a patient with a serious disease. It was not until March 1903, when his speech grew thick, and his memory for faces and localities became dim that his friends were alarmed and called in medical aid. He would go about with an open letter to the Viceroy, or an address to the King-Emperor, pass friends on the road without recognizing them, and speak to a stranger in a most confidential manner. On one

occasion, he wandered about the streets for whole night, because he could not find his own house. About this time also his movements became slow, his gait halting, and he began to drag his legs in walking. But there was no distinct paralysis.

He was advised to go away for a change, and was given Potassium Iodide in large doses. His means did not permit of his leaving the station, and the Iodide did not in the least affect the progress of the disease. On the 10th of May 1903, he had an attack of fever which rose rapidly to 106° F, and was accompanied with apoplectiform convulsions, with dilated pupils, and stertorous breathing, which lasted, with intermissions, for eleven hours, and ended in death.

### CASE No. 2.

**S. B. B.**—a tall, well-built man of 41 years, of irreproachable character—a devout churchman and an enthusiastic social reformer, without any history of syphilis or alcoholism, was admitted into hospital on the 19th of August 1903, for 'weakness of mind and body.' About 8 months previous to his admission, he was forced to resign a lucrative appointment. He put this down to the machinations of his enemies, and the injustice of his official superiors. He keenly felt the mental shock at the time and became depressed and excited alternately. From this period was also noticed a change in his character and conduct. A true and loving husband he became openly unfaithful. An affectionate parent, he became careless of his children. He would one day indict a defiant note to the Viceroy, and the next become extremely despondent, and refused to be comforted by his friends. His memory failed by degrees; and though his general health remained good, he grew

weak and childish in his movements. His friends also noticed tremors of the lips, tongue and hand. Within the last two months he had had three fits of convulsions, accompanied with fever and unconsciousness, lasting for a few hours, each of which left him helplessly weak for several days after.

On admission, his mental condition was one of extreme depression and apathy alternating with violent restlessness, almost amounting to delirium. In the former condition he would sit for hours without talking or answering questions or even recognizing friends, while in the latter condition he would talk and talk, vaguely and incoherently it is true, but volubly and by the hour, and chiefly about himself. He could not however follow any one train of thought or argument. His speech was slow, thick and blurred, some syllables being dropped while others were doubled. His handwriting resembled his speech, as can be seen by the accompanying specimen.

Some letters and even words are dropped out and others are doubled. The lines are not straight, and the letters run one into the other. At one time his handwriting was beautiful. His hand was shaky and slow in moving.

The deep and superficial reflexes were exaggerated, and he passed his urine and faeces in bed. His gait was unsteady and swaying and there was a certain amount of spastic rigidity in the left leg. Coarse tremors of the hand, lips and tongue were present. Electrical reactions normal. The other systems were all found normal.

He was given Bromide of Potassium whenever he became restless, and was discharged from the hospital on the 26th of August, 1903, because his friends wished



to take him to the seaside for a change and rest. Here under Ayurvedic treatment—or in spite of it—there was for a time a slight remission, but in November his mental and physical failure became marked, and early in December of last year he died in a fit of convulsions, accompanied with high fever.

NOTE:—I believe—and my belief is corroborated by the experience of other medical men—that general paralysis of the insane is not so often met with in this country as it is in Europe. At all events, as a student of medicine of about twenty year's standing, I have come across but two undoubted cases of this disease amongst Indians in India. We may not be far wrong in attributing the rarity of this, as well as other nervous diseases in this country, and its prevalence in European countries to the difference in the modes of life, and the diet of the Eastern and Western peoples. Climate alone can have little to do with it, because arctic cold and equatorial heat with all intermediate gradations can be had in this immense peninsula with its high hills and low plains. Syphilis, though acknowledged to be often a coincident of this disease, cannot be regarded as having a causal relation; for, not only do cases of General Paralysis occur in which there is not the slightest suspicion of syphilis, but persistent antisyphilitic treatment does not produce any impression on the course of the disease, both of which points are illustrated in the above records. Besides, syphilis would appear to be as prevalent in India as in Europe.

On the other hand, both the above cases show that intense mental activity, and unbounded ambition, which in the first case took the form of historical studies and

political distinction, and in the second case of religious excitement, and social success, are at least two of the factors which bring the Indian in line with his brother of the West, in his proclivities to nervous disease. Life lived at fever heat as it is in Europe and America is bound to tell on the nervous system. All fevers produce degeneration of tissues if sufficiently severe or long continued, and mental or physical excitement, which is a special fever of a special part of the nervous system, is bound to produce in the long run a degeneration of the nervous system, of which General Paralysis of the Insane may be regarded as one form of expression:

Add to this, as in the first case, Alcohol and Morphia, the one a Nervine Stimulant, and the other a Nervine Sedative, but both of them Nervine Poisons, and we have the materials to produce a complete picture of a nervous break-down on the physical as well as on the mental side. Verily, Civilisation hath its evils. When one sees the havoc that the stress and strain of modern life as lived in the large cities of the West produce on the Nervous System, and the material shortening of life caused thereby, one ceases to wonder at the records of long life amongst the ancients of all races.

That mental strain is one, if not the chief, of the causes of General Paralysis is further exemplified by the fact that rest and change invariably lead to a mitigation of the symptoms, even sometimes to a temporary arrest of the progress of the disease.

I do not for a moment question the prevalent impression that Paralytic Dementia and other allied diseases are due to some poison, probably antogenitic, inducing degeneration of the Nervous System. Nor

do I wish to belittle the influence of heredity in their incidence. But making all allowances for these side issues, the part played by mental and physical excesses as a cause of General Paralysis remains a large one.

We have as yet no specific for the disease under review, and *a priori* reasoning would lead us to hope that apart from the question of prevention, if the disease is recognised early enough, a system of complete mental and physical rest—a modified Weir Mitchell treatment—may, if it does not save life, at least prolong it.

## THE ANTISEPTIC.

December, 1904.

### Post-partum hæmorrhage and its treatment.

There are few more alarming or dangerous conditions which call for the ready resource and the calm judgment of the medical practitioner than post-partum hæmorrhage. And in the October number of "The Practitioner" there are published three articles from three leading British obstetricians on the treatment of this highly important complication of parturition. No better representatives of the English, Scottish and Irish obstetric schools can be named than Dr. John Phillips, of King's College Hospital, London; Dr. Berry Hart, of the Edinburgh Royal Infirmary; and Dr. Henry Jellet, ex-Asst. Master of

Rotunda Hospital, Dublin. These three leading authorities in obstetrics each deals in his own way with the subject of the treatment of post-partum hæmorrhage.

Of the three Dr. Phillips of London is the only one who deals with the prophylactic treatment of post-partum hæmorrhage. "It has often occurred to me to be asked," says Dr. Phillips, "whether, as a certain patient had a hæmorrhage after the first confinement, something could not be done to prevent a recurrence of it at ensuing confinements. Such cases I should be inclined to treat for some weeks before the expected labour by means of digitalis and iron; and a month before confinement is expected a prescription containing solution of chloride of calcium (3ss to 3 i) and ammoniated tincture of ergot (m x—m xx) should be given regularly three times a day." Dr. Berry Hart and Dr. Jellet, however, do not recommend any such prophylactic measures. We may mention in passing that there is a good deal of difference of opinion among obstetricians as to the advisability of administering ergot before labour in those cases where post-partum hæmorrhage is expected.

Passing now to the subject of hæmorrhage itself, we notice in Dr. Berry Hart's article an excellent classification of the different classes of post-partum hæmorrhage. Dr. Hart classifies them as follows:—

I. Hæmorrhage from the genital tract *below* the retraction ring.

II. Hæmorrhage from the genital tract *above* the retraction ring, which may be subdivided into :—

(a) Hæmorrhage during the third stage of labour.

(b) Hæmorrhage after the third stage of labour.

(c) Hæmorrhage associated with adherent placenta.

(d) Hæmorrhage associated with adherent membranes.

The cases comprised under Class I. are all more or less produced by vaginal or cervical lacerations, and writing about them Dr. Hart says that "such cases are often produced by practitioners' errors, *viz.*, the use of forceps when the cervix is imperfectly dilated, or by the completion of turning under the same conditions; by too rapid extractions of the head at the outlet or even by a too vigorous support of the perineum grinding the head against the soft tissues below the pubic arch, and thus indirectly lacerating them there." The diagnosis of this class of hæmorrhage from real uterine hæmorrhage is made from the fact that when the practitioner's hand is on the uterus and feels it firm, the hæmorrhage still goes on, and the treatment is the detection of the laceration and the application of a proper suture.

Before we discuss the treatment of hæmorrhages under Class. II. it will

be useful if we detail the preparations to be made in order to meet an expected case of post-partum hæmorrhage. Here are the necessary preparations as suggested by Dr. Phillips:—"While the second stages are going on, all preparations should be made for the possibility of hæmorrhage, that is to say, a subcutaneous syringe should be filled with a solution of ergotinine citrate (gr.  $\frac{1}{10}$ ) and strychnia sulphate (gr.  $\frac{1}{60}$ ), and an intra-uterine glass tube, "a trochar for intra-venous injection, and a long pair of forceps, for gauze packing, should be sterilised and laid in a weak antiseptic solution. Saline (1 dr. to the pint) and adrenaline solutions should be at hand, if possible." Having made these preparations the practitioner awaits the development of events. Let us assume that the child is born and immediately after some hæmorrhage is noticed. The first step that the practitioner is advised to take under such circumstances is to stimulate uterine contraction by massage of the fundus.\* If this is of no avail and the hæmorrhage still goes on the uterus must be emptied artificially, if possible, by expression. "The fundus of the uterus is grasped in the right hand, and compressed both antero-posteriorly and laterally, in such a manner as to squeeze the placenta downward through the uterine orifice." If, however, expression fails then the placenta must be removed. "With the left hand outside, the cleansed right hand, cone shaped, is passed into the

vaginal axis and carefully carried up until the uterus is entered in the axis of the pelvic brim. The separated portion of the placenta (when below) is felt and a sweeping motion of the fingers from side to side and up soon breaks through the remaining adhesions."

\* Presuming now that the placenta has been delivered and that even after that the bleeding continues profusely, under these conditions Dr. Phillips recommends *bimanual pressure* after cleaning out any clots in the uterine cavity. "The right fist is pushed up into the anterior *cul de sac* against the anterior uterine wall; the left hand is placed flat upon the posterior part of the fundus, and presses it directly downwards on to the right hand." This bimanual pressure may be supplemented by an injection of ergot and strychnia. The administration of a hot intra-uterine douche at a temperature of 110—115° F. is strongly recommended by all three writers, failing which the plugging of the utero-vaginal canal by iodoform gauze is also unanimously recommended by all the three authorities. We are glad to see this unanimity of opinion on this last point, for there are a good many obstetricians who are even now against the use of the gauze tampon.

The treatment of the patient after the arrest of a severe hæmorrhage by the subcutaneous injection into the cellular tissue about the breasts of a saline solution, is well known and is

recommended by all the three writers under review.

The subject of atonic post-partum hæmorrhage is of special interest to practitioners in India, because we have heard it stated that women, and especially European women, in India are specially prone to such attacks. Some of our medical friends in Madras who have had large obstetric experience in this city do not however support this theory of the special proneness of the European women in India to post-partum hæmorrhage. In the Government Maternity Hospital, Madras, in the year 1903, out of 2000 cases of labour there were only 51 cases of post-partum hæmorrhage, and out of these 51 cases only in 11 cases was the hæmorrhage at all severe enough to affect the mother's pulse. There were only 2 deaths from post-partum hæmorrhage and they were both cases which were admitted into the Hospital in a moribund condition. Careful management of the third stage of labour, no doubt, has considerable influence in reducing the number of cases of post-partum hæmorrhage, and there is considerable truth in the statement that a practitioner who is constantly meeting with post-partum hæmorrhage cannot manage the third stage of labour on the best principles.

#### General Paralysis of the Insane.

WE beg to draw the attention of our readers to two extremely interesting cases

of General Paralysis of the Insane, which we publish under our "Cases and Comments" in this issue of "The Antiseptic," and especially to the note which Dr. Naidu of Hyderabad appends to the report of his two cases. Dr. Naidu directs his investigation towards finding a satisfactory explanation for the fact—the undoubted fact—that General Paralysis of the Insane is less common in India than it is in Europe. We quite agree with his remarks that "intense mental activity and unbounded ambition, religious excitement, and the desire for social success are some of the factors which bring the Indian in line with his brother of the West, in his proclivities to nervous disease." We also agree with him in thinking that "mental strain is one, if not the chief, of the causes of General Paralysis of the Insane."

Please notice that it is mental *strain* and not mere overwork that is productive of General Paralysis. Writing on this point Dr. Savage says:—"I do not look upon General Paralysis as the disease of overwork, and although it seems steadily to increase with the increase of civilization and with higher education, and although it appears now among women who are struggling to take the places of men, yet my experience is that the relationship is not with work but with worry. General Paralysis occurs mostly among the anxious-minded, conscientious men, and as far as my experience among the middle classes is concerned, it is rather due to *overstrain* than overwork."

Among the causes of General Paralysis all authorities place sexual excesses in the very first place. "There are two causes," says Dr. Clouston, "that singly or combined, above all others cause the disease *viz.*, sexual excess, especially if indulged

in at or after middle life, and alcoholic intemperance, especially if impure and bad drinks are used." Dr. Maudsley, more than any one else has been instrumental in establishing the belief that sexual excess is the chief cause of General Paralysis. Dr. Savage does not go so far as Dr. Maudsley, but he also accepts sexual excess as an important factor in the production of General Paralysis. "Undoubtedly," says Dr. Savage, "sexual excess may be a cause of General Paralysis; it is certainly a very exhausting cause, but such excess is difficult to determine, for I suppose it is rare to find two individuals who are similarly liable to exhaustion from this or any one cause. There are patients admitted yearly into Bethlem whose disease I believe to be chiefly produced by sexual excess; but such men are generally not only living lives of general excitement, but are wedded to women of a specially amatory nature; and although it would be unscientific to connote excess as necessarily associated with certain types of women, I have been struck by the frequency of the occurrence of General Paralysis in the husbands of some women of voluptuous physique."

Besides sexual excess and alcoholism syphilis has been put forward as a cause of General Paralysis. But although in a certain number of cases syphilis has been found to coexist with General Paralysis, it is not generally accepted as an etiological factor of the latter disease. Some have claimed an hereditary predisposition as an essential condition for the causation of General Paralysis, and of late years proofs in support of this hypothesis have been increasing. Not only an hereditary predisposition but also a special "diathesis" and "temperament" is supposed to assist in the development of General Paralysis-

"General intelligence, ambition and energy, sociability and a large capacity for enjoyment, a firm belief in oneself, and a preference for handsome women, are the good and sane characteristics of this diathesis, while a lack of the higher control, tendencies to excess, especially sexual excess, selfishness, vanity and restlessness are its weak points." So says Dr. Clouston. But all these do not answer the question suggested by Dr. Naidu, why there should be less of General Paralysis in India than in Europe? If sexual excess is such a potent factor in the development of General Paralysis, why, Black Town, Madras, ought to be a big hospital for General Paralysis. If alcohol is an important agent in the causation of General Paralysis, Calcutta ought to be competing with London for the possession of the largest number of general paralytics. No. These are only the accessory causes. General Paralysis of the Insane is a disease of the cortical portion of the grey substance of the convolutions of the human brain. This is what Dr. Clouston calls the mind tissue. This is the tissue "towards which the whole of the rest of the nervous system tends, and in which it ends, which controls and regulates it all, which is its crown and highest development, being in fact the highest and dominating centre of the organism." A degeneration of this mind tissue gradually brings about a progressive degeneration and death of the rest of the nervous system, and that is what actually takes place in General Paralysis of the Insane. It is in civilized Europe—and especially in the large towns of civilized Europe—that the struggle for existence is keenest and the highest mental activities of the individual are called forth. The cortical grey matter in the brain of the active European living in

busy towns, subjected to abuses by "alcoholic and other poisons, by overstrain, through violent energising stimulated by continuous strong mental and other stimuli up to the point of exhaustion," gives way under the severe strain and starts a process of descending degeneration. "I look upon General Paralysis," says Dr. Clouston "as being equivalent to a premature and sudden senile condition, senility being the slow physiological process of ending, General Paralysis the quick, pathological one." If the people of Europe have a greater share of General Paralysis than we in India have, it is a penalty they pay for their too rapid intellectual advancement, for the high pressure at which they live, for their so-called civilization. Our lawyers and politicians, and social reformers and religious revivalists have only to go some distance further along the lines indicated to them by their Western leaders and they will get into the realms of the degenerative lesions of the higher nervous structures and be welcomed by General Paralysis of the Insane itself, as its possible victims.

#### Anæsthetics in Adenoid Operations.

Dr. THOMAS LUKE, of Edinburgh, contributes to our pages an article on the choice of an anæsthetic in operations for adenoids in the naso-pharynx. A similar article from his pen will be found published in the "Edinburgh Medical Journal" for July 1904. With a good deal of what Dr. Luke says in his excellent article we are in entire agreement. But we cannot help thinking that Dr. Luke unduly exaggerates the dangers of chloroform anæsthesia in adenoid operations. He proves from statistics that there is a good deal of danger

in the use of chloroform in operations on the naso-pharynx. Statistics may be utilized to prove almost anything. There is a very old classification of untruths into lies, *d—n* lies, and statistics. Statistics apart, we feel more confidence in relying on what our own experience has taught us. We have notes of 134 operations we have performed in private practice, for adenoids, under chloroform. *Not in a single one* of those cases have we had any difficulty with chloroform. During the time that we were House Surgeon at the Throat and Ear Hospital at Brighton, we administered chloroform in a large number of cases of adenoids which were operated on by Mr. Cresswell Baker and Mr. Edward Treves. We have never had any "accident" even there. We use the dorsal posture (Rose's position) and we must confess that we have not had even a case of dangerous hæmorrhage. Of late we have used ethyl chloride in a number of cases. Unless the gag is applied before the administration of the anæsthetic we found that the duration of the ethyl chloride anæsthesia was not enough for the insertion of the gag and for the complete clearing of the naso-pharynx. On account of the absence of muscular relaxation the insertion of the gag under ethyl chloride anæsthesia is peculiarly difficult. And the insertion of the gag before the administration of the anæsthetic is out of the question in a large majority of cases, as they are children who are frightened by the gag as much as by the curette. Dr. Madhava Menon, of the Madras Government Maternity Hospital, who administered chloroform in a large number of our cases, and a safer and more experienced anæsthetist than whom it is difficult to find in this country, tells us that he infinitely prefers chloroform to

any other anæsthetic in operations in the naso-pharynx. After he had administered ethyl chloride in a number of our adenoid operations, the other day we left to him the choice of the anæsthetic. Without the slightest hesitation he selected chloroform.

Writing on this subject Sir Felix Semon says:—"The desirable thoroughness" I have in view can only be obtained, as far as I see, by the operator not being unduly hurried by the brief duration of the anæsthesia, nor by the fear of anything untoward during the operation itself. If chloroform be selected as the anæsthetic, and quietly and slowly administered by a competent anæsthetist, and never pushed beyond the abolition of the cough reflex, it introduces, to the best of my knowledge and experience, no amount of danger into the operation." With that opinion we entirely agree, and we intend to continue the use of chloroform in all our future adenoid operations in spite of any statistics that may be brought forward against chloroform. A sort of chloroformophobia, if we may use such an expression, has been prevalent in England for some years past. We are sorry to see that the disease is spreading into Scotland also.

### Our Contemporaries.

#### Japanese Advances in Bacteriology and Serum Therapeutics.

At the annual meeting of the American Medical Association, Dr. Miajama of Tokio read an interesting paper on recent work done by Professor Kitasato and his pupils in serum therapeutics. The foremost position of Japan in the arts of peace and war is once more shown. Kitasato, a pupil of Koch, has by his numerous and valuable researches achiev-

ed a leading place amongst the bacteriologists of the world. Only the isolation of the bacillus of tetanus and the discovery of the bacillus of plague need be mentioned. There are now in Japan three allied institutes, namely, the Institute for Infectious Diseases, the Serum Institute, and the Lymph Institute. There is a special laboratory for the study of plague, where the preparation of a serum and vaccine was begun in 1901. The death-rate of cases treated with the serum was only 9 *per cent.*, in contrast to 60 *per cent.* in cases in which it was not used. The plague vaccine is prepared for prophylactic purposes. In Osaka and Formosa, where the disease is rife, no fewer than 200,000 persons have been injected and very few of them have contracted the disease. When cholera broke out in Japan, in 1895, as a consequence of the Chinese war, Kitasato undertook charge of the special hospital and tried the inoculation of serum, with the result that the death-rate was reduced from 70 to 33 *per cent.* He also prepared a cholera vaccine, inoculation of which produces only slight lassitude and fever and undoubtedly lessens the number of victims of the disease.

For hydrophobia prophylactic inoculations are made in accordance with Pasteur's method. Dr. Oshida improved the method of injecting the virus into a rabbit. The injection is made through the optic foramen beneath the dura mater. He also simplified the method of extracting the spinal cord, by opening the spinal canal in 2 places, in the neck and loin. The cord extractor, a long metal rod with an olive point, is inserted through the lumbar opening, and the severed portion of the spinal cord is pushed out through the cervical opening. 428 persons have been treated by Pasteur's method during the last 7 years, of whom only 2 died from the disease.

Dysentery is very prevalent in Japan. Its bacillus was discovered in 1897 by Shiga.

Antitoxic serum made from this bacillus has reduced the death rate from 30 or 40 to 2½ *per cent.* A vaccine has also been prepared for prophylaxis and given encouraging results. In 1900, for example, dysentery broke out in a little village in Kanagwa, and 28 persons fell sick in the course of a month. All persons in the village above the age of 4 were inoculated: the result was marvellous. Except 2 persons who contracted this disease on the day after the first inoculation, all escaped the infection. A serum and vaccine for typhoid fever were also prepared and have given satisfaction. The vaccine has checked outbreaks of the disease. The difference between human and bovine tuberculosis and the value of an antitoxic serum are at present under investigation.

Only one kind of malaria and anopheles seem to exist in Japan proper, while in Formosa 3 well-defined kinds of malaria and at least 6 distinct species of anopheles are found. In a recent research Dr. Miajama proved that certain kinds of malaria are propagated by certain species of anopheles. Thus anopheles sinensis is the host of certain malaria parasite, plasmodium vivax, but not of the malignant malaria parasite, plasmodium precix. This explains why malignant malaria is restricted only to Formosa, notwithstanding anopheles sinensis is most abundant in Japan proper.—*The Medical Review.*

### MEDICINE.

#### Family Locomotor Ataxy of Syphilitic Origin,

BY

DR. M. NONNE.

Erb has lately called attention to the occurrence of syphilis, tabes, paralysis, and syphilitic diseases of the nervous system in several members of one family. In the following history a mother and 2 daughters were affected with locomotor ataxy

A girl, aged 20, was admitted to hospital on Feb. 27, with pain in the thighs and legs, ataxia, and failing sight. She was born at term, and presented no signs of syphilis. She learned to walk before 3. At 13 she began to squint with the left eye. Vision deteriorated at 10 and had slowly continued to do so since. For 2 years there had been almost complete amaurosis. She became unsteady on the legs at 8, and lightning pains in the legs appeared about the same time. Since 14 she had suffered from constipation, dysuria, and occasional incontinence of urine. Menstruation began at 19.

She was poorly nourished and anæmic (hæmoglobin 70 per cent. There were no obvious signs of syphilis, the internal organs appeared to be normal, and there were no Hutchinson's teeth. The right pupil was smaller than the left, and reacted neither to light nor accommodation. There were bilateral optic atrophy and old corneal opacities on the left side. Romberg's sign was present, and there was a moderate amount of ataxia. There were hypalgesia, retardation of painful impressions in the feet and legs, and hyperæsthesia for cold over the back. The patellar and Achilles reflexes were absent. At 13 she had been in hospital for what was diagnosed as eczematous conjunctivitis; the inequality and rigidity of pupils existed even then. At first no history of syphilis could be elicited. But the mother stated that her husband used secretly to take pills and medicine 5 years before the girl was born. The first pregnancy terminated prematurely at 8 months. The child was born with an eruption and died shortly of what was said to be smallpox, though at that time and subsequently there were no cases in the neighbourhood. The second child was also premature, and died of debility. The third and fourth children were alive and healthy. The fifth pregnancy terminated with abortion, and the present patient was born 4 years later. For about 20 years the

mother had suffered from dysuria with occasional attacks of lightning pains. About the same time her gait became unsteady, so that walking for any distance was not possible.

The mother's right pupil was twice as large as the left. Reaction to light was absent on both sides, and to accommodation was sluggish. The patellar and Achilles reflexes were absent on both sides, and there was distinct, though slight, ataxia. Romberg's sign was positive. There were patches of hypalgesia and retardation of conduction for painful impressions in the feet and legs, with hyperæsthesia for cold over the abdomen. There were no signs of past syphilis.

Of the 2 elder children, the son, aged 25, was perfectly healthy. The eldest daughter, aged 29, was married, had 2 healthy children, and presented no signs of congenital syphilis. But since the age of 16 she occasionally suffered from attacks of lightning pains, was somewhat unsteady on the legs, and for 7 or 8 years had suffered from weak sight. The right pupil was larger than the left; both pupils were completely immobile, and convergence was sluggish. The knee-jerk was absent on the right side, and the Achilles reflex on both sides. There was slight ataxia and hypalgesia of the lower limbs. There were bilateral choroiditis and corneal opacities. The optic discs were pale and blurred, and the retinal vessels were narrow. An ophthalmic surgeon diagnosed old syphilitic interstitial keratitis and choroiditis, with optic atrophy. At 7 years she was said to have suffered for 12 months with her eyes, and to have been blind for 4 weeks. After mydriasis, in both sisters a deep network of vessels was seen to penetrate the cornea from all directions—a condition which is probably pathognomonic of congenital syphilitic keratitis.

The fact that females were affected rather than males, and that there were optic atrophy and only, slight ataxia, are characteristic of

the juvenile acquired and hereditary forms of locomotor ataxy. In both daughters the ocular signs were indicative of congenital syphilis, and as would be expected in congenital cases the ataxic symptoms began early. It was of interest that a perfectly healthy child was born between the 2 affected daughters.

The writer has recently published a case in which a child was infected with syphilis extra-genitally, and then infected the mother and father. All 3 members of the family became tabetic. In another case a man acquired syphilis. He became "tabo-paralytic," his wife tabetic and his child (begotten 5 years after infection) at 12 became imbecile, and developed tabes. In certain cases there appears to be a family predisposition for syphilis to attack the nervous system. Thus a man, aged 44, had syphilis at 24, and was treated with mercurial inunctions and injections, and later with iodides. For 2 years he had had typical locomotor ataxy. His brother, aged 42, who lived in another house, was infected from another source at 27, and had had locomotor ataxy for 4 years. In another case twins, aged 26, had had syphilis, acquired from different sources, the one for 6 the other for 5½ years. In spite of thorough anti-syphilitic treatment, the one became paralytic 4 years and the other 3 years later. —*The Medical Review*.

### Paralysis from Lesion of the Upper Part of the Brachial Plexus,

BY

R. T. WILLIAMSON, M. D., F. R. C. P.

Two forms of combined paralysis of the muscles of the arm from lesions of the nerve roots of the brachial plexus are well known. In one form, Erb's paralysis (or the upper arm form), the muscles paralysed are the deltoid, biceps, brachialis anticus, and supinator longus; sometimes also the supinator

brevis, infraspinatus and subscapularis. In the other, the lower arm form (or Klumpke's paralysis), the small muscles of the hand and the flexors of the fingers and wrist are paralysed. The writer records 2 cases of a third form of paralysis of the arm muscles in which there is paralysis of all the muscles affected in Erb's paralysis and, in addition, of the triceps and of the extensor muscles of the wrist and fingers.

CASE 1.—A woman, aged 50, was knocked down by a bicycle and thrown on the right shoulder. About 5 or 10 minutes afterwards she noticed loss of power in the right arm. When first seen, 4 days later, the deltoid, biceps, brachialis anticus, supinator longus, triceps, and extensors of the wrist and fingers were paralysed. There was difficulty in rotating the humerus outwards and in writing (especially towards the end of the line). Probably the infraspinatus was also paralysed. Sensibility was normal. Electrical examination a few days later showed that the complete reaction of degeneration was absent in the affected muscles. The direct application of the weak faradic current to the paralysed muscles caused marked contraction in all, but not so powerful as on the left side. To galvanism all the muscles contracted fairly well and the contractions were sharp, as in the normal condition—"normal lightning contraction." Also the K.C.C. was greater than the A.C.C. Indirect stimulation of the right deltoid, biceps and supinator longus, through application of the weak faradic current to the combined fifth and sixth cervical nerve roots at Erb's point in the posterior triangle of the neck, caused a well-marked contraction of the muscles. Galvanic stimulation of the same nerve roots caused contraction of the muscles just mentioned, and the K.C.C. was greater than the A.C.C. Four weeks after the accident the deltoid and supinator longus were still completely paralysed; on attempting voluntary movements the biceps, triceps, and the extensors of the fingers and



wrist contracted slightly, but the loss of power in these muscles was still marked. Seven weeks after the accident there was marked improvement. In time complete recovery occurred. Treatment consisted of galvanism (stable method) daily for 10 minutes.

CASE 2.—A boy, aged 1 year and 8 months, was taken to hospital. One month before he was suddenly lifted up by the left arm from the floor. A few minutes afterwards there was pain in the left arm and a few days later it was noticed that the left arm was helpless. The deltoid, biceps, brachialis anticus, supinator longus, triceps and the extensors of the wrist and fingers were completely paralysed. There did not appear to be any affection of sensation. Five months later, when again examined, the paralysis was unaltered. Electrical treatment was recommended but the mother brought him only once.

In Erb's paralysis the lesion is in the trunk formed by the union of the fifth and sixth cervical nerve roots (the "upper trunk" of the brachial plexus). In Klumpke's paralysis the lesion is in the eighth cervical and first dorsal nerve roots or the nerve trunk formed by their union ("lower trunk"). By many writers the triceps and the extensors of the wrist and fingers are stated to be supplied by the seventh cervical nerve root. If this be correct the paralysis in the 2 cases here described could be explained by a lesion of either the upper cord of the brachial plexus formed by the union of the fifth, sixth, and seventh cervical nerve roots or of all these nerve roots separately before their union. The causation of the paralysis is probably similar to that in many cases of Erb's paralysis—compression or laceration of the nerve cord or roots between the clavicle and the posterior part of the first rib, owing to the clavicle being pushed or drawn suddenly upwards and backwards.—*Lancet*, Aug. 13, p. 447.

### Facial Paralysis due to Digestive Disorders,

BY

DR. F. ROSSI.

An infant suffered from abdominal pains and high fever. Seven days later he awoke at night with pain in the head and clonic and tonic convulsions of the limbs, which lasted about a quarter of an hour. Five days later (on Sept. 26), he was seized with vomiting, painful mucous diarrhoea, and headache and was taken to hospital. Examination showed right facial paralysis and a very painful abdomen. Under aperients he improved and the fever had disappeared on Oct. 3. On the 8th he ate sweets and again suffered from headache, abdominal pains and relapse of the facial paralysis. Under castor oil he again improved. While in hospital indigestion and facial paralysis were again twice produced by his parents secretly giving him sweets, and the symptoms again yielded to aperients. On the 31st he was discharged, but not until two months later had the facial paralysis completely disappeared. The writer thinks that the paralysis and other nervous symptoms were due to the action on the brain of toxins generated in the intestine.—*La Pedatria*, No. 5, 1904.

### Primary Pneumococcic Nephritis followed by Pneumonia,

BY

DR. P. GALLEGA.

A man, aged 26, came under observation. At the age of 13 he suffered from pneumonia and hæmorrhagic nephritis, from which he completely recovered. His present illness began with chills, fever, and pains in the loins. The urine contained blood, albumin, epithelial and granular casts, and renal cells. After 3 days he again had chills which were accompanied by cough and stinging pain in the right chest. Examination showed all

the signs of pneumonia of the right inferior lobe. Pneumococci were found in the urine and sputum. The pneumonia was followed by empyema, which was treated by thoracotomy. Recovery followed.

The writer relates another case in a youth aged 19, which differs from the preceding one only in the absence of empyema.—*Archivio Italiano di Clinica Medica*, Mo. 8.

### Cysticercus Cellulosæ of the Tongue,

BY

DR. DE GAETAO.

A child, aged 10, came under observation. Two years before he noticed a nodule in the left border of the tongue, of the size of a grain of millet. It remained indolent until 3 months before, when it attained the size of a pea and impeded the movements of the tongue. On examination it projected a little and was covered by normal mucous membrane, which intimately adhered to its centre. It was freely movable in every direction. There was no history of tape-worm; therefore diagnosis was doubtful. The tumour was easily removed, and found to have all the characters, macroscopic and microscopic, of cysticercus cellulosæ, including the hooklets of the scolex.—*Associazione Chirurgica Italiana. Congresso di Roma*, Mar. 1904.

### SURGERY.

#### Internal Urethrotomy for Chronic Urethral Stricture,

BY

REGINALD HARRISON, F.R.C.S.

In this case, Mr. Harrison pointed out that, by an internal urethrotomy, a life of misery

arising out of frequent attacks of urinary retention, and the constant forcing of small metal bougies and catheters to keep the passage open, had been exchanged for one of great comfort. The patient, a man of 50 years, had frequently been advised to submit to this operation, but had gone on indefinitely postponing it till his life was threatened by nephritis. Fourteen days' treatment in hospital had effected this change. Mr. Harrison thought the risks connected with this class of operations were greatly exaggerated. Antiseptics and improved methods of operating and after-treatment had rendered internal urethrotomy a safe and efficient operation. It had many advantages over the older methods of gradual and continuous dilatation by bougies and catheters, and the area of the operation had been greatly extended. He laid considerable stress on the importance—or rather the necessity—immediately after the division of the stricture of leaving the bladder fairly distended with a solution of boracic acid. Thus the first urine passed was greatly diluted and sterilized, and this could subsequently be maintained, together with a low specific gravity of the urine, by diluents, of which that containing borocitrate of magnesia was probably the best. He constantly pointed out that this seemed to prevent rigors, or to modify them. The rigors and fever which occur in the first twenty-four hours after urethral interferences, are those which are to be feared; after this period they are of little account. Since he had adopted this kind of after-treatment, though rigors and fever sometimes followed, they have ceased to cause him any anxiety. A considerable number of the cases, however, entirely escaped even this temporary inconvenience. He rarely tied a catheter in after the operation, and invariably took care to make a free division of the stricture, and to satisfy himself at the time of operation that the urethra would readily receive a bougie over and above its normal dimensions, as Otis so strongly insisted upon. This meant that a No. 14 or

15 English gauge (26 to 28 French) could be passed. He spoke from the observation of a very large number of cases of internal urethrotomy which he had treated on these lines during the last few years. He would add that he hardly ever now passed a bougie, catheter or sound, or interfered instrumentally with the urethra without adopting this simple precaution of leaving in the bladder some boric acid solution—*The Polyclinic*.

### Parotitis in Appendicitis,

BY

F. E. BUNTS, M.D.

CASE 1.—A man, aged 29, was admitted to hospital on May 12, 1902, with a severe attack of appendicitis. He declined operation and a large mass formed in the abdomen. After a week, when the symptoms were improving, though the tongue remained dry and hard, he developed tenderness over the right parotid gland. Inflammation and suppuration followed and the abscess was opened on May 24. A few days later the left parotid became inflamed. It also suppurated and was incised. The mass in the abdomen disappeared and he was discharged well on June 27.

CASE 2.—A man, aged 29, was admitted to hospital on Jan. 28, 1903, with acute appendicitis, the fifth attack in the past year. There was a mass on the right side and severe vomiting. An abscess was present and a gangrenous appendix was removed. On Feb. 6 he developed right parotitis. This terminated in an abscess, which was incised. Two or 3 days later the left parotid was involved, but though greatly swollen it did not suppurate. The appendicular abscess yielded a pure culture of the bacillus coli and the parotid abscess the staphylococcus pyogenes aureus. Recovery followed.

CASE 3.—A woman, aged 62, who had had symptoms of appendicitis for a week, had a large mass in the right iliac region. She was allowed by the mouth only water and

was fed by the rectum. The temperature gradually fell until July 22, when it reached normal. On the 26th it rose to 100.4°, and the left parotid was tender and swollen. The tongue was very dry and hard. Five days later a little thick pus was evacuated after incision. On the 30th the temperature was again normal but on Aug. 2 it rose to 100° and right parotitis was beginning. This subsided without suppuration. Death, apparently from slow sepsis and exhaustion, occurred on Aug. 21.

In none of the cases did the parotitis appear to be a serious complication. Several explanations of secondary parotitis have been given. It has been attributed to some nervous influence exerted on the gland by the affected abdominal organs, to metastasis, septicæmia and to an ascending infection of Stenson's duct, to which the dryness of the mouth prevailing in the primary condition is a predisposing cause. The cases related above support the last view. The fact that different organisms were found in the appendicular and parotid pus in the second case is opposed to the view that the parotitis was metastatic.

The prognosis of cases in which parotitis follows appendicitis does not appear to be worse than that of cases in which it does not occur, excepting rare cases in which the parotitis is a manifestation of pyæmia.

The treatment consists in frequent cleansing of the teeth, washing out the mouth with antiseptics, and removing the foul deposit from the tongue. When feeding by the mouth is forbidden the patient may be given something to chew so as to facilitate evacuation of Stenson's duct by the action of the masticatory muscles. For this purpose the writer recommends "chewing gum." Heat or cold may be applied to check the inflammation. When pus forms it should be evacuated.—(*American Jour. of the Med. Sciences, May*.)

### Floating Kidney with Intermittent Hydronephrosis, and Crises of Muco-Membranous Enteritis,

BY

PROF. DEBOVE.

Floating kidney may cause great pain, or give rise to fatal complications. It is often associated with muco-membranous enteritis.

CASE.—A domestic servant, aged 32, had a floating right kidney. For about 3 years she had severe pain over the kidneys, following normal labour. In Sept. 1902, the pain became so severe that she entered hospital. The urine was found to be sometimes very copious, and sometimes very scanty. She was advised to wear a belt, and the attacks of pain became less frequent, but they reappeared in the form of crises, and in Jan., 1904, the crises became so frequent and severe that she again entered hospital. The day after admission she had violent abdominal and lumbar pain with obstinate vomiting. The right kidney was enormously enlarged, and felt like a round tumour, the lower convex border of which extended below the level of the umbilicus, while the upper was lost under the false ribs. On bimanual examination the tumour was found to be fluctuating, slightly movable from side to side and capable of being pushed high up in the hypochondriac region. Next day the tumour had disappeared, and on bimanual examination the lower edge of the immovable kidney could be made out, with difficulty, just below the false ribs. From time to time the tumour reappeared, being accompanied by severe pain, tenderness and sickness. When it disappeared the pain and sickness vanished. When the tumour was large the patient would pass about half a pint of urine daily. During the subsidence of the swelling the urinary output was enormous.

The case was characteristic of floating kidney with intermittent hydronephrosis. All cases are not so typical. Some give rise to

so little trouble that they remain unrecognised. In others there is definite renal pain, so violent as to suggest renal colic. Again, the pain may be abdominal, situated in the right inguinal region and suggesting appendicitis or volvulus. More often the pain is concentrated in the right hypochondrium and suggests biliary colic. The writer has seen several cases treated for years for gall-stones, which recovered completely after a displaced kidney had been stitched down. Sometimes the pain is epigastric and accompanied by vomiting, which simulates acute dyspepsia. In the present case the diagnosis was easy. During examination the patient stated that for some years she had suffered from painful recurrent attacks of diarrhoea, consisting of watery stools mixed with glairy mucous and false membrane. The writer believes this enteritis to have been produced by the floating kidney, and quotes a case of Weber's in which a girl, aged 18, who had sustained a shock in stepping out of a carriage, felt a violent pain in the right kidney. For 5 years after she had occasional crises of pain, accompanied by a diminution in the quantity of urine, and when the pain subsided there was great polyuria. Coincidentally there was loss of appetite, and dyspepsia, and the patient noticed that her motions contained shreds of membrane. Each evacuation was preceded by pain commencing in the epigastrium, and travelling along the alimentary canal till it reached the rectum. Tuffier performed nephropexy, and 10 days after the operation the appetite was normal, the gastric trouble and the pain ceased, and since then there have been no more attacks of muco-membranous enteritis. Debove believes that in his case also the enteritis was due to the floating kidney, and recommended the patient to have an operation performed. He promises to publish the results.—*Presse. Med.*, May, p. 289.

### Self-Inflicted Avulsion of the Tongue,

BY  
BROUARDEL.

A woman was brought to hospital one morning carrying her tongue in her handkerchief. Her husband stated that the previous evening he found her attending to her household duties, but she told him that during the day she had had a violent nervous attack, and so great was the feeling of suffocation that she had inserted her hand to the back of her throat and pulled out her tongue, which was lying on the table. There had been but little bleeding. The patient was examined by Dr. Marchand, who found that the throat was anæsthetic and the reflex was abolished. The severed tongue showed a clean line of section behind the circumvallate papillæ, and about the level of upper border of the epiglottis. Speech was almost completely retained, and even on the first examination the patient made herself completely understood. Mastication was not much interfered with. The wound healed rapidly.

The writer has not found a similar case recorded but there are several in which the tongue has been completely severed by the teeth, either during epileptic attacks or as the result of a blow on the chin, while the tongue was protruded. Rapid recovery is the rule.—*Jour. de Med. de Paris*, June 12, p. 242.

### The Dangers of Valsalva's Experiment.

BY  
M. NEU.

During the execution of Valsalva's experiment a deep inspiration is taken and a powerful expiratory movement is made with closed glottis, so that the abdominal and thoracic cavities are compressed. This invariably produces a considerable rise of blood pressure,

which in predisposed subjects with arteriosclerosis, aneurisms, or hæmophilic might be followed by hæmorrhage. Coughing, laughing, and straining at stool are merely modifications of the mechanism involved in Valsalva's experiment, and may have the same consequences. Thus a man, aged 54, who had long had symptoms of a gastric ulcer, saved a boy, aged 15, from drowning. During the necessarily violent efforts he for some time held his breath, thus imitating Valsalva's experiment. The consequent rise of blood pressure was followed by copious hæmatemesis.—(*Munch. Med. Woch.*, April 19, p. 708).

### MIDWIFERY.

#### Pelvic Hæmatoma following Labour simulating Rupture of the Uterus,

BY  
DR. WILLIAMS.

I was called to a primipara, aged 33, who had been delivered a few hours previously. The labour was slow and terminated by an easy low forceps operation. The placenta was soon expelled. Almost immediately she complained of a tearing pain about the rectum, which was so severe as to require the injection of morphine. She said that the pain was more intense than any felt during labour. Her general condition was good when the accoucheur left at the end of an hour. After his departure the pain became more severe and she became collapsed. Three hours after delivery she was seen by a neighbouring practitioner, who found her in a condition of shock with a pulse of 160-70. After the subcutaneous injection of normal saline solution and the administration of strychnia and whisky, her condition improved somewhat but soon changed for the worse. Internal hæmorrhage was diagnosed.

When the writer saw the patient the face was pallid and the pulse 160 and thready.

The lower abdomen was filled by a rounded fluctuating tumour of the size of a man's head, reaching to the umbilicus. At first it seemed to be the enormously distended bladder, but only a few drops of bloody urine could be obtained on catheterization, while the tumour maintained its size. It was surmounted by a hard, rounded body about the size of two closed fists, which was clearly the contracted body of the uterus. On vaginal examination, the posterior and left vaginal fornices bulged markedly, and through them a wave of fluctuation could be transmitted to the abdominal tumour. The cervix showed no signs of a tear, and was displaced upward and backward, so that the external os lay to the right of and just in front of the sacral promontory. In the absence of external bleeding in a patient presenting the symptoms of acute anæmia the only possible diagnosis was internal hæmorrhage, which was supposed to be due to an incomplete rupture of the uterus, with escape of blood between the folds of the broad ligament. As the patient's condition became worse the writer recommended immediate operation. Preparations were made for laparotomy.

When the operation was begun the patient was practically pulseless at the wrist, though the heart could be distinctly heard on auscultation. Only a minimum amount of ether was necessary to anæsthetize her. On cutting through the fascia the ordinary components of the abdominal wall could not be distinguished, and loose blood-stained tissue came into view, which was readily broken down by the fingers. Then, instead of reaching the peritoneum, the fingers passed directly into a large cavity, filled with partially clotted blood, situated between the symphysis pubis and the anterior and inferior wall of the bladder, and extended between the folds of the broad ligament to the left wall of the pelvis. It was bounded below by the pelvic floor, so that the fingers emerged beneath the ascending ramus of the ischium

anteriorly, while laterally they came in contact with the tuber ischii. Being still under the impression that he had to deal with ruptured uterus, the writer extended the abdominal incision upward and exposed the body of the uterus, which was perfectly normal, except for its unusual position. To make sure he requested an assistant to pass his finger through the cervix, which showed that there was no communication between the uterine canal and the cavity just described. The peritoneum above the hæmatoma was then closed, so as to prevent contamination of the abdominal cavity. The source of the hæmorrhage was found to be an oozing surface upon the anterior and inferior surface of the bladder, no large vessels being involved. As it was impossible to apply ligatures, the only means of checking the hæmorrhage seemed to be in packing the cavity with iodoform gauze. This was accordingly done, the vagina being tightly packed at the same time, so as to afford counter pressure. The abdominal wound was then closed to within 5 cm. of the symphysis, a tight abdominal bandage was applied and the patient put to bed in slightly better condition than at the beginning of the operation. During the night she rallied and by the following morning was practically out of danger. The dressings were so soaked with bloody discharge that it was necessary to renew them, though the packing was allowed to remain *in situ* for days before it was replaced. A sound introduced into the wound extended downward and backward on the left side of the pelvis for a distance of 10 in. The wound rapidly closed.

Pelvic hæmatoma following labour is extremely rare, hardly more than 20 cases being reported. Most of them were fatal. This appears to be the first case in which an operation has been done. The cause of the hæmorrhage probably was tearing of the ante-vesical plexus of veins during the forceps operation, although it was not necessarily responsible, as several cases have followed normal and spontaneous delivery. It seems

to be impossible to differentiate between the condition and incomplete rupture of the uterus.—*Johns Hopkins Hospital Bulletin*, May p. 173.

### Parturition complicated by Carcinoma in a Young Woman,

BY

A. VEITCH.

On the voyage from New York to Hamburg a woman, aged 26, who had previously been delivered of 3 living children, was, on Oct. 7, seized with labour pains and profuse hæmorrhage in the seventh month of pregnancy. The vaginal portion of the cervix could not be felt. In its place was an ulcerated, cauliflower-like tumour of cartilaginous hardness, which distended the vagina. The foetal head could be felt from the rectum freely movable above the growth. The pains and hæmorrhage increased. Under chloroform a finger penetrated through the tumour, probably at the remains of the external os, into a narrow, unyielding, cervical canal. The head presented and the membranes were intact. The cervical canal and the vagina were packed with iodoform gauze. During the night of Oct. 8, the tampon was extruded. The pains and hæmorrhage completely ceased, until on the night of Oct. 9 the violent jerk of a rough sea caused the liquor amnii to escape. In the afternoon of Oct. 10 labour pains reappeared, and towards the evening became severe. The cervical canal was softer. During an examination fragments of the growth were broken off. During the following day the pains again subsided almost completely. At 11 a.m. on Oct. 12, there was a sudden strong pain and a piece of the growth of the size of a pigeon's egg was delivered. Two more pains occurred and the child was born. It weighed only 3 lb. and died shortly after. Fifteen minutes later the

placenta followed. The uterus contracted well and there was scarcely any hæmorrhage. During the puer perium, which was practically a febrile, two smaller pieces of the growth were extruded. The lochia were scanty. On arrival in Hamburg she was admitted to hospital, where carcinoma of the cervix was diagnosed. It was too advanced for a radical operation, and the growth was merely scraped and cauterised.

The woman had had a yellow gonorrhoeal discharge and endometritis. After the birth of her third child, in Jan., 1903, the yellow discharge became blood-stained and foetid, and occasionally contained clots. There was constantly increasing sacral pain. Evidently the growth dated from that time. The remarkable points are:—(1) the early age at which carcinoma developed; (2) the occurrence of conception and the continuation of pregnancy until the seventh month in spite of the presence of a malignant growth and chronic endometritis; (3) the success of expectant treatment.—*Munch. Med. Woch.*, April 19, p. 711.)

### THERAPEUTICS.

#### The Diagnosis and Treatment of Cardiac Insomnia,

BY

L. FEILCHENFELD.

The recognition of the cause of insomnia is essential for successful treatment. The 3 most common varieties are the cerebral, cardiac and intestinal. Complete insomnia is rare, and a few hours sleep are usually obtained. In insomnia of cerebral origin, such as occurs in neurasthenia, sleep is not obtained for hours after retiring to bed, but is then usually sound. The opposite is common in old age, viz., sleep appears rapidly but lasts only 2 to 5 hours. But even this short time usually suffices and the practitioner is seldom consulted. The insomnia which depends on intestinal and gastric

disorders is not characteristic. Sleep may be delayed at first, or interrupted later by tympanites, pressure on the heart, cerebral congestion, or lively peristaltic movements. Cure is obtained by regulation of the diet and purgatives.

The symptoms of the cardiac form of insomnia are characteristic. Sound sleep appears rapidly, but lasts only an hour or two. The awakening is sudden and is almost always accompanied by palpitation. A sense of anxiety and slight precordial oppression are commonly present. The patients do not fall asleep again till early morning. In such cases some signs of myocarditis can usually be detected. The insomnia indicates some degree of failure of compensation, and is never found in valvular disease, if compensation is thorough. It is of interest that in cardiac cases sleep appears more rapidly if the patient lies on the left side than if he lies on the right, but is of shorter duration than if he lies on the right. The writer has repeatedly found that after prolonged lying on the left side the apex beat is diffuse and displaced towards the axilla, the pulse is small and frequent, and there is slight dyspnoea. Evidently there is temporary cardiac dilation, which probably depends on obstruction to the circulation by the position assumed on the left side. A dorsal position is often sufficient to produce cardiac insomnia. Probably in both positions the heart becomes displaced owing to its relaxed and flabby walls, in such a way that the emptying of the ventricles is impeded. In the right-lateral position and during sitting and standing the work of the left ventricle, the long axis of which is directed from the left and below upwards slightly to the right, is unimpeded. Further, while standing and walking the cardiac muscle is supported by the muscles of respiration and stimulated by the transmission of vibrations of the body.

In the treatment of insomnia a healthy mode of life is of first importance. Hydro-

therapeutics are useful; drugs should be avoided if possible. The patients go to bed more or less tired, the smallest dose which will convert this tiredness into sleepiness and sleepiness into sound sleep should be chosen. Unless the first effect of the drug is excitation, extremely small doses of morphine, codeine, sulphonal, or other hypnotic suffice. In cases of cardiac insomnia excellent results are obtained by a combination of morphine with digitalis, for instance, 0.0025 gm. (about  $\frac{1}{8}$  gr.) of morphine hydrochloride and 0.015 gm. (about  $\frac{1}{4}$  gr.) of powdered digitalis to be taken at bedtime. If sleep is inhibited by intestinal rather than cardiac stimuli small doses of sulphonal, such as 0.25 gm. (about 4 gr.) repeated twice or thrice in the afternoon often act most satisfactorily. Even when large doses of hypnotics have failed, small doses frequently succeed, especially if the exact source of the sleep inhibiting stimuli is discovered and removed.—*Berlin. Klin. Woch.*, Mar. 14, p. 282.

### Radio Therapeutics.

BY

O. LASSAR.

Radium rays properly applied are harmless. One mgm. of radium bromide enclosed in a small capsule may be applied to the diseased surface with strapping for 30 minutes daily without producing inflammation or necrosis. But extensive cutaneous necrosis may follow the prolonged application of larger quantities. The writer has treated a number of cases of rodent ulcer ("cancroid") and melanoma by radium. The growth shrinks, becomes ulcerated, and is finally absorbed. An epithelioma of the lip has almost disappeared. Several cases were shown before the Berlin Medical Society in which, after some weeks' treatment, a smooth cicatrix was substituted for the growth. The capsules in which radium is usually enclosed are too large to

apply satisfactorily to mucous membranes or parts not easily accessible. It is a good plan to enclose it in flexible, probe-like lead tubes, which can be inserted wherever required. The price of radium is high, but is much lower than that of an X-ray apparatus and its energy is practically inexhaustible.

To obtain good results with Röntgen rays constant medical supervision is essential, and the treatment should not be entrusted to subordinates. With thousands of applications the writer has never had an accident. This he attributes to the fact that he interrupts the treatment at the slightest sign of cutaneous inflammation or pigmentation. Röntgen rays give good results in chronic infiltrated dermatitis, and especially in psoriasis, rodent ulcer, and recurrent carcinoma of the breast, in which the growth is situated superficially in the skin. A gangrenous, foetid, recurrent carcinoma of the breast was cured by 2 months' treatment. In a woman with a recurrent growth which was considered inoperable owing to enlarged cervical glands, which were adherent to the great vessels, a complete cure was apparently obtained by the X-rays, but now there are a few suspicious glands which require further treatment. In another case, a recurrent malignant ulcer of the breast which was in Oct. pronounced inoperable owing to glandular involvement, completely disappeared, and there is now no indication for an operation. The woman has gained 11 lb.—*Berlin. Klin. Woch.*, May 16, p. 534.

### Medicinal Treatment of Cholelithiasis,

BY

W. BAUERMEISTER.

In an acute attack of biliary colic the injection of a combination of atropine with morphine is more successful than morphine

alone—(0.015 gm., or about  $\frac{1}{4}$  gr. of morphine and 0.001 gm. or  $\frac{1}{80}$  gr. of atropine). The atropine overcomes the obstinate constipation which so closely resembles intestinal obstruction and lessens the sepsation of abdominal distention. In chronic biliary lithiasis the most effectual disinfectant of the gall-bladder and the biliary passages is a combination of acid oleate of sodium with salicylic acid in the form of pills: acid oleate of sodium and salicylic acid, of each 0.1 gm. ( $\frac{1}{4}$  gr.), to which may be added advantageously menthol and phenolphthalein. Three or four pills should be taken before breakfast and again before bedtime, with about a teaspoonful of hot water, continuously for 3 weeks with a fortnight's interval before resuming the course. This may be combined with abdominal massage for constipation, massage of the region of the gall-bladder, if possible during the application of the rays of an electric arclight, and faradisation of the gall-bladder. In about 60 or 70 cases seen during the last 18 months these measures either cured by causing the evacuation of calculi or converted an active into a latent process.—*Therapeut. Monatshefte*, May p. 241.

### OPHTHALMOLOGY.

#### A New Method of Skiakinescopy: Estimating Ocular Refraction,

BY

S. HOLTH (CHRISTIANIA).

THIS method, which the author has called Skiakinescopy, is conducted as follows:—At a minimum distance of 4 metres the patient is asked to look at a circular point of light 5 to 10 millimetres in diameter having an opal glass disc in front of it. The trial frames are put on, and the eye which it not being examined is generally excluded, though this is not absolutely necessary. If no astigmatism has been shown by a previous examination with Placido's disc or the

ophthalmometer the surgeon takes a darning needle of 1 to 2 mm. in diameter in one hand, and holding it horizontally before the eye, moves it from below upwards across the pupil. If ametropic the patient sees a distinct horizontal shadow across the light and this shadow moves upwards (*with* the needle) in myopia and downwards (*against* the needle) in hypermetropia. When the ametropia has been corrected by the insertion of the correct glass in the trial frame, the shadow disappears. If the patient is unobservant or lets his accommodation come into play, several glasses may seem to cause the disappearance of the shadow. Under these circumstances the strongest convex and the weakest concave glass indicate the correction. In some cases an ill-defined movement is noticeable even with the proper correction. In such a case the last glass which the patient recognises as giving a distinct shadow *with* and the first which produces a shadow *against* in myopia (and the reverse in hypermetropia) are noted. Then the intermediate glass between the two indicates the refraction. The author regards this method as quick and accurate and applicable to all sorts of people over the age of seven years.

In cases of astigmatism the process is not so simple, as it is indispensable that the needle be moved parallel with the principal meridians. These meridians must be found by means of retinoscopy, the ophthalmometer or Placido's disc, or by means of the author's "*cherche-meridien*" (axis-finder). This instrument consists of a slightly reddened tube 1 to 2 mm. in diameter—a vaccine tube will do—mounted in a disc with a central circular aperture across which the tube extends. When the astigmatic patient looks through this hole and tube at the source of light—preferably without the intervening opal glass—he sees it elliptical and a thin red streak forms a prolongation of its long axis, if the tube is at right angles to the meridian of greatest ametropia. In all other positions

the streak will form a variable angle with the long axis of the ellipse. In a slightly modified form the *cherche-meridien* is used in the author's skiakinescope—an apparatus by means of which, in addition to skiakinescopy, kinesiography, Scheiner's test, and the prismometry of Culbertson can be applied. For a full description of the skiakinescope the original paper must be consulted.

The phenomena mentioned above are easy to observe when the astigmatism is equal to or more than 1.5°. In lesser degrees it is necessary to determine the principal meridians by some other method, e.g., retinoscopy, ophthalmometer or the fan. To be successful, skiakinescopy presupposes tolerably good vision, and a fair amount of intelligence on the part of the patient. It is not applicable in severe diseases of the macula and optic nerve, in toxic amblyopia, etc. It is sometimes of considerable value in estimating refraction in case of keratitis and irregular astigmatism, and applied with both eyes open it may help in exposing malingering.—*Annales d'Oculistique*, June 1904.

J. JAMESON EVANS.

### DERMATOLOGY.

#### Three Cases of Skin Disease,

BY

ROBERT SAUNDY, M.D., (EDIN.),  
F.R.C.P. (LOND.),

Professor of Medicine, University of Birmingham; Senior Physician to the Birmingham General Hospital, &c.

The three following cases of somewhat uncommon diseases of the skin occurred during the current year in patients under my charge at the Birmingham General Hospital.

Case I.—*Acute pemphigus in a butcher's boy, resulting in recovery.*—The patient, aged 14 years, was admitted into the General



Hospital on March 3rd, 1904, complaining of an eruption on his skin, sore-throat, and headache of 11 days' duration. His family and previous history were unimportant. Three weeks previously he cut his finger at his work; the wound did not heal and was poulticed by his mother. Eleven days previously, ten days after the wound to his finger, the patient felt too ill to go to work, and a bullous eruption broke out, the first bleb being below the left eye. On admission his finger was practically healed but there was a small granulating surface still to be seen. The eruption covered the face and head and involved the mouth and tongue. His lips and tongue were so swollen that it was not possible to see exactly the distance to which the eruption extended to the back of the cavity. There was a similar eruption around the anus, but the epidermis had in places been rubbed off, leaving a raw ulcerated surface. The eruption on the face consisted of oval bullæ from a half to two-thirds of an inch in their longest diameter, containing sero-purulent fluid and surrounded by a pink areola; where the epidermis was detached there was a raw granulating surface. His temperature on admission was 100.4°F. and his pulse was 84. His urine contained a haze of albumin. Examination of the blood was normal. There was no eosinophilia. Cultivations of the fluid from the blebs produced only the bacillus coli. His temperature became normal on the fourth day after admission and his general condition was quite satisfactory. The rash was treated by dusting powder containing one part of boric acid, one part of glutol, and eight parts of kaolin; but as after five days there seemed to be no change he was given in addition by the mouth five minims of liquor arsenicalis three times a day and on the 11th this was increased to ten minims. Improvement commenced at once and by March 25th he was nearly well. The albumin disappeared from his urine and he was discharged quite cured on April 5th.

During the last few years a good deal of attention has been drawn to a form of psoriasis which occurs in butchers or those handling animal tissues. Our knowledge of it is chiefly due to Pernet and Bulloch, but the case under consideration differs from this classical description in certain respects: (1) the mildness of the constitutional disturbance; (2) absence of the diplococcus described by Demme and confirmed by Bleibtreu and Bulloch; and (3) the good effect of arsenic. The case is of importance as tending to modify the grave prognosis of these cases. It is evident that the infection is not always virulent.

Case 2.—*Occupation rash caused by bichromate of potassium*.—The patient, a man, aged 33 years, came to the out-patient department on Jan. 12th, 1904, complaining of a skin eruption on both forearms. He had been under my care in December, 1901, suffering from phthisis, and in February, 1902, was admitted into the hospital and underwent a course of treatment by Koch's tuberculin-R. As the result he gained nine pounds in weight, there was a diminution of all symptoms, and he had been able to work up to the time of his reappearance at the hospital. There was a marked family history of consumption, one brother and two uncles having died from that disease. According to the notes taken during his former stay in hospital the apices of both lungs were involved and tubercle bacilli were present. He was treated with injections of tuberculin-R, commencing with  $\frac{1}{16}$ th of a milligramme and increased until 20 milligrammes were given. After his discharge he continued to attend for some time to receive injections. As these injections had been made chiefly in the forearm he suspected that the eruption of which he complained might have something to do with them. The eruption when seen consisted of round or oval elevated purplish-red patches with some slight scaliness. He was told that the eruption was probably due to something which he

handled, and on inquiry it was found that he was a warehouseman engaged in handling upholstery materials, and on a future visit he brought to the hospital some scraps of cotton velvet, which were examined by Dr. W. H. Wynn, pathologist to the hospital. Dr. Wynn found that the velvet contained potassium bichromate, alum, and a salt of iron, and that the bichromate was present in sufficient quantities to account for the rash. The patient had not improved but he had not given up work and the eruption spread over his face, body, and lower extremities, so he was admitted into the General Hospital, where the treatment consisted of cleanliness by means of baths and the application of boric acid ointment to the skin. Under these means he made a complete recovery and was discharged on March 2nd cured.

This is a very good example of a bichromate of potassium eruption. Successful treatment of occupation rashes depends entirely on a correct diagnosis; when that is made the rest is perfectly easy and merely involves the application of the principle *causa sublata tollitur effectus*. We are led to suspect an occupation rash when it commences upon the hands or forearms; in all such cases this possibility should be taken into account and no routine diagnosis of eczema accepted as satisfactory.

Case 3. *Orthostatic purpura*.—The patient, a man, aged 43 years, was admitted into the General Hospital on Feb. 12th, 1904, complaining of swelling of the legs and a rash all over the lower extremities, of two days' duration. There was no history in the family of tubercle or rheumatic fever. The patient said that he was well until 20 years of age, when he suffered from enteric fever in Bengal; three or four years later he had intermittent malarial fever in Lower Burma and the attacks continued until after his return home. Two years previously he had pleurisy and was ill in bed for a month. Since then he had always suffered from a cough, and some few months after the attack

of pleurisy he coughed up from a pint to one and a half pints of blood. During the last two years he had lost 3 stones 4 pounds; 18 months previously he began to suffer with pain in the back radiating around his thorax. On examination the patient looked pale and thin; there was marked angular curvature of the spine, beginning at the eighth dorsal vertebra and involving the following two segments. There was dulness at both apices, especially on the left side, while the right base behind was dull below the level of the seventh rib. Over the dull areas bronchial breathing and moist sounds could be heard. The swelling of the legs disappeared after his admission, but both lower extremities were covered with a purpuric eruption extending up to the buttocks but most marked from the ankles to the knees. There was also a slight eruption of the same kind on the upper surface of the forearms. The liver and spleen were normal. The urine contained a trace of albumin. The blood was quite sterile. An attempt to support the spine by a Sayre's jacket failed as it made his back sore and the patient refused to allow another trial to be made. After resting in bed until the 29th the rash had entirely disappeared, so that he was allowed up for two and a half hours, with the result that the next day the eruption had returned and was as extensive as before. A week later the same result followed a similar experiment. By March 14th the spots had gone but as the jacket had to be taken off he could not be allowed to get up. He remained in hospital until March 19th when he left at his own request. The treatment, which seemed to have no effect, consisted of at first lemon juice, half-ounce doses taken in soda-water three times a day; secondly, ten-minim doses of turpentine three times a day; and lastly, 15 grains of calcium chloride in water three times a day. The effect of the last remedy is not known, as the patient had to be kept in a recumbent position owing to the state of his spine.

This is a well-marked case of orthostatic purpura, such as is commonly seen after acute rheumatism where the eruption comes out as soon as the patient is allowed to get up and disappears when he resumes a horizontal position. It is apparently due to the state of the blood and usually passes off in a few weeks. The blood condition is not known. It might be suggested that the condition in this case was due to the lesion in the cord, the injury there setting up vasomotor paralysis, but it seems unnecessary to adopt such a hypothesis in view of the fact that the disease often occurs in condition where the spinal cord is quite healthy. In using the name "orthostatic purpura" it is not intended to make a fresh subdivision but merely to direct attention to this peculiarity. In 1881 it was suggested by Ceci of Prague that purpura might be caused by the action of an organism which he believed he had isolated, and which, when injected into the veins of animals, caused hæmorrhages. These statements have never been confirmed but micro-organisms have been found by one or two other observers. On the other hand, I have had all my cases examined systematically and the blood has in every case been found sterile. It is therefore fair to assume that organisms are not necessarily present, and possibly when they have been found the result has been due to defective methods. Birmingham.—*The Lancet*.

#### Diseases of the Throat,

BY

ST. CLAIR THOMSON, M.D., F.R.C.S.

*Functional Aphonia.* A YOUNG woman was brought for consultation by Dr. A. K. Barrett, of Kensington. There was a history of pleurisy some six months ago, but with rest and change complete recovery appeared to have taken place. Latterly the patient had become hoarse and almost aphonic. With this history it was highly important

to determine whether there was any organic disease in the larynx. Dr St Clair Thomson pointed out that the patient spoke freely in a hollow whisper, without any evidence of pain or strain. Inspection of the larynx at once revealed that, except for anæmia, the air passages were quite healthy, and the larynx entirely normal. The vocal cords during phonation failed to meet, owing to paresis of the adductor muscles, hence the loss of voice. Weakness of the adductor muscles may be due to local inflammation and obstruction, but it is never caused primarily by organic lesions of the nerve centres or trunks. Hence it is a good guide to remember that in affections of the larynx, when the abductor muscles are primarily affected, we must search for organic lesions, whilst when the adductor muscles are primarily affected we must expect to find only a functional disorder.

The patient was at once given "treatment by suggestion" with the consequence that her vocal cords came smartly together, and she left the room speaking in a loud natural voice. Although the majority of these cases of functional aphonia have a hysterical basis and are to be traced to anæmia, disorders of the digestion and menstruation, or physical influences, Dr. St Clair Thomson pointed out that it was very important to remember that functional paresis of the vocal cords was not an infrequent precursor of laryngeal tuberculosis. In fact some sensitive patients would refer symptoms to their larynx for weeks or months before any organic change was visible there. It is therefore highly important not to dismiss these patients as soon as phonation had been restored by suggestions, electricity or other means. We ought to see that their weight, chest expansion, and general resistance was raised as much as possible. This patient of Dr. Barrett's, had had pleurisy, and it was now being recognised more and more every day that the majority of cases of pleurisy were due to

tubercle, although the invasion of the lung might be postponed for many years, or might never occur. This view had been held by the Paris school for a good number of years and lately had been confirmed by German and Swiss observers. Although in the fluid of pleurisy it might be impossible to find tubercle bacilli, as they existed there in such scanty proportions, it had yet been shown that when this fluid was inoculated into guinea pigs they died of tuberculosis, in over 90 per cent. of the cases. Clinically, Dr

St Clair Thomson had known cases in which patients had been summarily dismissed for functional aphonia, and who had returned with anæmia, loss of weight, recurring aphonia, and finally tuberculosis had developed both in the lungs and the larynx. He therefore advised that Dr. Barrett's patient should be instructed in regard to the importance of avoiding vitiated air, living out of doors as much as possible, avoiding pulmonary constipation, and keeping up her general nutrition.—*The Polyclinic*.

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The Manager's office is at 323, Thambu Chetty Street, S. T., Madras.

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sent direct to the Editor.

All business communications and payments should be addressed to the Manager.

~~Advertisement rates for page per month Rs. 7-5-10~~

~~\*Half page Rs. 4-0 or 6s. a month.~~

The Subscription for the Journal is Rs. 5 a year payable

strictly in advance.

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## SUPPLEMENT TO "THE ANTISEPTIC."

We publish below the medical evidence given in the *Pieris Will Case* (of Ceylon). A careful perusal of the evidence will be both interesting and instructive from a medico-legal point of view. Some of the leading points in the case we discuss in our editorial columns. Our readers will note that two of the medical witnesses, Dr. Rockwood and Dr. Thomasz, are cited by the plaintiffs, and Dr. Paul by the defendants.

(2) William Gabriel Rockwood, sworn.

I am a Doctor of Medicine of the Madras University; I am a Member of the Royal College of Physicians (London) and a Member of the Royal College of Surgeons (England).

I have been a Member of the Civil Medical Service of this Island from 1866 to 1898, when I retired on pension in 1898. I was Surgeon to the General Hospital, Colombo, and was made consulting surgeon of that hospital afterwards. My age is 60 years. I have had a large experience both in my official capacity and as a private physician. I am also a Member of the Legislative Council representing my community (the Tamil community) since 1898. I knew the late Mrs. Jeronis Pieris. I had known her 10 or 15 years. She was on calling terms with Mrs. Rockwood. I had a function at my house on the 8th February, 1903, namely, my daughter's wedding. Mrs. Pieris was present at it. I attended her during her last illness. I was called in on the 10th February. I knew that her son Harry and his family were living with the old lady at "Discount." When I was sent for on the 10th, I responded to the call. I am certain I then did not see Harry Pieris, but I am not sure about his wife. I attended her from the 10th up to a few hours before her death. I diagnosed her case to the best of my ability, and treated her on that basis. In my opinion she was suffering from diabetes.

When I was first sent for, I prescribed for some other symptoms of which she then complained. It is only after watching a patient for some time that one is able to ascertain the true nature of a disease. I was first called in to treat her for fever and pains, which she was then suffering from. I had attended her before for other disorders, and had periodically been examining her chemically. I knew that she was diabetically disposed. On this occasion also I tested her urine almost daily. It is my opinion that the disorder which culminated in death in her case was diabetes. After the 21st February I visited the patient twice a day. During that period the time I noticed any symptoms approaching to coma was on Tuesday evening, the 3rd March, the day before her death.

Q. Is not diabetes a weakening and wasting disease which leads to lassitude, etc.

A. Yes, by long continuance, but it does not necessarily lead to wasting. A person who is fat need not necessarily become thin; and again a strong man need not become weak, but before getting weak he may die. I don't think in Mrs. Pieris' case her strength was much affected, because, to the very last, she was able to move about. She used to walk 27 or 30 feet away from her bed to her commode, and walk back again. She used to walk there herself, and I have seen her do so.

Q. During your visits to her, you used to converse with her?

A. Well, yes. I used to speak to her as a doctor would to a patient. I had no great scope to converse with her owing to the difference in our languages. During any of my visits to her I did not find her deprived of mental capacity till the last hour of my visits. The sort of questions I used to ask her were: "Where her pain was, whether it was easier or worse than before," etc. She would say if the pain had shifted from one side to the other, and how many motions she had had, and when she had them, what food she had had. Whether she need have her food changed. She sometimes used to tell me that the nursing of one attendant was better than that of another, and that one motion was more offensive than another. She sometimes used to ask me to prescribe something for such offensiveness. Afterwards she used to ask me to discontinue a particular medicine. I knew she had a dislike for chicken broth, and I changed it to mutton broth. As a change I tried to persuade her to take chicken broth, but she persisted in her refusal. She yielded once to my persuasion and tried chicken broth, but she got nausea, and I found that her prejudice was well founded. In order to husband her strength I suggested that she should use a bed-pan. She revolted against it, and said that she was very clean in her habits and strong enough to go to her commode. She also gave as a reason that if she tried to use a bed-pan she would fail to have any result, and I was quite prepared to hear that. In my experience in the case of some people, when they try to use a bed-pan it acts as a deterrent. Once, when I suggested that she should have a nurse, she said she had so many people round about her that she required no help.

Sometimes she used to tell me her opinions on various drugs I had prepared for her. Up till that Tuesday night I did not,

on any single occasion, find her wandering in her mind. From my experience as a doctor I can say with perfect assurance that up till that Tuesday night she was in a perfectly healthy state of mind.

Even on that Tuesday night she asked me why my wife had not come to see her. That was the occasion on which Dr. Thomasz met me in consultation. I asked someone standing by why she asked that question, and somebody gave me an answer, and I told the old lady that I would ask my wife to come round.

I can recall the Sunday preceding her death, because on that day Mr. E. L. F. de Soysa came to take me to the General Hospital in consultation with the doctors in attendance on a servant of Mr. de Soysa's who had been stabbed. I made a note of that visit in my diary.

After seeing that patient die at the hospital, Mr. de Soysa drove me down to "Hills-court." That was about 5 or 6 P.M.

Q. What was the condition of Mrs. Pieris on that afternoon after you saw Mr. de Soysa's servant die at the hospital?

A. Well, that was a momentous occasion. That afternoon Mrs. Pieris' condition was in no way changed from what it was in the morning. This is a negative reply. I may say that her mind was as clear as it was in the morning; her answers were intelligent and propositional as they were in the morning. That Sunday morning I had seen her about 9 or 10 A.M. Her condition then was as I have previously described it. In my opinion, on that Sunday evening, when I saw her, she had sufficient intelligence and capacity of mind to make a last will. She did not tell me that she had signed her last will, but the fact was mentioned to me in the house that evening.

30th May, 1903.

Counsel and Proctors present as before.

(2) William Gabriel Rockwood, sworn.

Examination continued:—

I have attended Mrs. Pieris before this occasion, perhaps on half-a-dozen different occasions. I had many opportunities for studying her capabilities and temperament. I knew her husband, Jeronis Pieris, and attended on him several times.

During Mrs. Pieris' last illness a grandson of hers was also ill in the house, namely, a son of Mr. Harry Pieris. They used to be in a different part of the house. Mrs. Pieris knew that I was attending on her grandson. I say so, because she used to make daily inquiries from me about his health. I used to tell her how I found the boy. Harry Pieris was away at Galle when I began attending Mrs. Pieris. I was asked by some one in the house whether he was to be sent for, and I said it was not necessary. I was asked the same question by some one in regard to sending for Mr. de Soysa, and I said it was not necessary (para. 3 of affidavit of R. S. Pieris filed with petition of opposition is read to witness).

It is not true that I told any one on the 28th February that the condition of Mrs. Pieris was such that I had no hope of her recovery. She was certainly not in such a state on that day that I had no hope of her recovery. Either on Sunday morning (1st March) or later that day I certainly did not find her in a state unable to respond to me nor to recognise me. Her mind was not then so far impaired and enfeebled by illness as not to be in a fit state to give directions or to approve of suggestions as to the disposition of her property. I saw her on the evening of Sunday. Her condition then was certainly not worse than it was in the morning.

Q. Did you say anything when you heard that?

A. Well, yes; when a person does a thing that is agreeable to me, I usually say "I am glad," and I did so on that occasion.

The fact was an agreeable thing to me.

Q. On your oath, as a professional and honourable man, can you say that this lady was on that Sunday in any state approaching a comatose or unconscious condition?

A. On my oath I say no. She was then perfectly intelligent, clear-headed and sensible. I was present in the house when on Tuesday night Mrs. Pieris first developed comatose symptoms. In fact, I was sent for then. I then saw her about 10 or 11 P.M. She did not then look at me, and I found her not responsive; she had her eyes closed, and replied in monosyllables as if she were a little drowsy. On that occasion I went to the house quite prepared to meet such symptoms. On that evening (Tuesday) I had last seen her about 6 P.M. That was the time at which Dr. Thomasz and I saw her. When Dr. Thomasz and I saw her at 6 P.M. that evening, she had just returned from her commode, and, as a result of her exertion, she was a little short of breath, which subsided after she got into bed. I concluded that that shortness of breath was due to her exertion, as it subsided so soon, but I was on the lookout for unfavourable symptoms. Having seen her at 6 P.M. and getting that call at 10 P.M. (as I must have expressed myself as not being satisfied with her condition), I went prepared to do what was required in a bad hour; that is to say, I went prepared for any emergency.

FELIX R. DIAS,

A. D. J.

It being nearly 5 P.M., further hearing is adjourned for to-morrow.

F. R. DIAS,

A. D. J.

29th May, 1903.

*Cross-examined.*—There is nothing connected with this illness which I desire to conceal. Before I came into this box I certainly did not desire to take sides with either party to the case.

I say most emphatically that I desired to keep from the opponents the contents of my prescriptions. I object on principle to any one seeing the contents of my prescriptions except the chemist.

It is not a rule in this island for a chemist to return the original prescriptions to the patient, keeping a copy in his books, unless it is said on the prescription that it was to be returned. Chemists may of their own accord often return prescriptions, but that has not been my experience. It would be wrong for a chemist to return a prescription to the patient when not so requested. Doctors invariably leave their prescriptions with their patients to get them made up. I don't know if the prescription is included in the fee, but the doctor's fee is for the visit. The doctor charges nothing at all for the prescription. I suppose a patient may use a prescription as often as he likes after he has got it without further reference to me.

I was applied to by Messrs. N. S. Campbell & Co., Chemists, after Mrs. Pieris died, for copies of my prescriptions on behalf of Mr. J. A. Perera, the opponent's Proctor. I replied that prescriptions or copies were not to be given. Afterwards there was a correspondence between Mr. Perera and me. I have not preserved his letters.

(Shown a letter dated 4th May, 1903, and marked Z 39.)

I remember receiving a letter like this.  
(Shown a letter dated 4th May, 1903, marked Z 40.)

I admit this was my reply to Mr. Perera.  
(Shown a letter dated 5th May, marked Z 41.)

I admit this is a copy of another letter I got from Mr. Perera.

I replied to that, that this individual case cannot guide my action.

(Shown another letter dated 8th May, marked Z 42.)

I remember receiving another letter like this from Mr. Perera, but I did not reply to it. Mrs. Pieris died of ordinary diabetic coma. I presumed so because I was not present at her death, and last saw her several hours before her death, about 12 hours. I gave the certificate of death. My certificate was that she died of diabetes. A person dies of the results of diabetes, but in a certificate we only give the specific disease. One of the results of diabetes is diabetic coma, and I assume that she died of that.

Q. May I take it that she died of "Kusmaul's Coma"?

A. I know nothing of Kusmaul or other ever-changing names. She died of "Diabetic Coma."

"Kusmaul's Coma" is well known under that name to the profession. I don't know if Kusmaul has ever changed his name. I have heard of "Kusmaul's Coma." At the present time that is a name generally given to what is known as "Diabetic Coma."

I know Williamson's book on Diabetes, but he is no authority.

Q. Is R. T. Williamson, the author of "Diabetes Mellitus," the man you refer to?

A. Yes.

Q. Is the "Medical Annual" accepted as an authority in your profession?

A. I know the book very well. It is accepted more as a work of reference than as an authority.

Q. Are the contributors to it men of eminence in your profession?

A. No; they are young men who have more time to write than to practise.

Q. Have you been asked to contribute to it?

A. Yes, but I have not done so.

Q. If you had contributed anything, would you have ceased to be an authority?

A. Yes.

I don't know any present contributors to this annual. I last made reference to it about 10 years ago. I have not consulted it since then, and I don't know the names of its present contributors. I don't know if the Colombo Medical Library takes that book in. I admit that the "Medical Annual for 1903", now shown me, is a book belonging to the Medical Library. Professor Soundby is an eminent member of the profession. I am not in a position to say whether he is an authority on renal and urinary diseases. He is not the leading authority on renal and urinary diseases, but I admit that he is a man of knowledge in that line. In my opinion Sir Henry Thompson is an authority on the subject, as also Mr. Henry Morris and Van Buren. The latter has written a book on the subject. I have seen it, but I have not a copy. I have often read it. I last read it about 6 months ago. There was a copy in our library, but I don't know if it has one now.

Berkeley Hill was also an eminent authority on this subject. He was a surgeon, as also Sir Henry Thompson. Beale, of King's College, is also an authority on urinary diseases. He is a physician, and has written largely on the subject. I have his book. Golding Bird and his son are also authorities on the subject.

The father was a physician, but I am not sure of the son. None of those I have mentioned have written on diabetes. Dr. Soundby has written specially on diabetes. He is not a leading authority on that subject; but he is an authority. Pavey, Von Noorden, Herter, and Leo of Berlin are the leading authorities. They rank higher in the scale

than Soundby, in my opinion, and in that of the profession generally.

Q. If Soundby quotes Williamson as an authority, will you not accept the quotation as entitled to weight?

A. I cannot answer that.

Q. Do you know as a fact that he does quote Williamson as an authority on diabetes?

A. No.

(Reads p. 219 of "Medical Annual for 1903.")

I now see that Soundby does refer to Williamson in this article, but I say that does not show that Soundby accepts Williamson as an authority.

Q. If one doctor quotes another doctor's work and treatment and statistics in a medical work written by himself, does not that indicate that the author is treating the person he quotes as an authority?

A. Certainly not. It need not be necessarily so, because he may be quoting the other person to support his own theories.

Q. Does he not by the fact of quoting from another person certify to his professional worth?

A. Not necessarily.

Q. Do you suggest that respectable writers of medical treatises deliberately foist quacks upon the reading professional world?

A. No.

I know the works of Ostler, and his Principles and Practice of Medicine. He is certainly a writer of credit and respect.

Q. If he quotes Williamson's statistics on Diabetes, does he not thereby accredit him as an authority on the subject?

A. I cannot say. Statistics may be made to prove anything.

If Ostler quotes Williamson's statistics on p. 425 of his book, I cannot say if he recog-



nised him as an authority. If Herter quotes Williamson I cannot say if he regarded him as an authority.

(P. 271 of Williamson is read.)

I am prepared to admit that diabetic coma is now called Kusmaul's Coma because he described it in 1874.

Q. When you saw Mrs. Pieris for the last time at 10 or 11 A. M. on Tuesday night, did you not then think that she would die?

A. Yes, I thought she had little or no chance.

Her condition then was that she was drowsy, answered slowly, she was able to feel a needle prick, and her pulse was weak. As far as I remember that was all. In the history of her case drowsiness and weak pulse did not indicate impending dissolution, but impending coma. She was then in the incipient stages of coma.

Q. Does not the phrase "Diabetic Coma" include not merely the state of actual unconsciousness, but all the preceding symptoms leading up to coma?

A. No; coma sets in when unconsciousness begins.

Q. Is this a correct description of diabetic coma, that it consists in a peculiar group of symptoms ending in unconsciousness?

A. One cannot exactly define the thing.

Q. Then do you disagree with the above definition?

A. Not entirely.

Q. What part of it do you disagree with?

A. I cannot answer that, without knowing what the symptoms referred to are.

I think I was with the patient that Tuesday night about one and a half hours. She was in the first room adjoining the corridor. My son, who is also a doctor, was with me at the time. There were several others in the room, but I cannot remember who they were. My thoughts at the time were en-

grossed on the patient, and the treatment I was to adopt. There were some nurses in the room, but I can't say who they were. They were not trained professional nurses, but native women-servants who were attending on the lady during her illness. They were used to their work. I have not seen them attending on diabetic patients before I was called in on the 19th February. On Tuesday night I did not feel, and therefore do not know, if the patient's extremities were getting cold. I did not take her temperature then, but felt her pulse, which was weak and rapid. I can't say how many beats there were of the pulse, because I don't think I counted, and if I did I would not now remember. It must have been above 100. It may have been 120. It was not a failing pulse. On that occasion I gave her a subcutaneous injection of an alkaline solution below the right breast.

I think it was an injection of carbonate of soda. I referred to a book before I went to the house, and wrote down the prescription and got my son to have it made up at the chemists' and I went straight to the house. I got my son to look up the particular formula I wanted. The book I referred to was Burney Yeo. I spoke to the patient that night. I asked her in Sinhalese how she then was. She said there was nothing the matter, which I looked upon as a bad sign. Her eyes were closed, but she opened them with an effort. I did not speak to her any more but set to work to give her the injection. As I was giving it to her she said in Sinhalese "Ethi," meaning "that is enough." We took an hour and a half in giving her that injection, as it had to be done very carefully.

(P. 553 of vol. 11 of Burney Yeo is shown to witness.)

I think it was the solution of chloride of sodium and bi-carbonate of soda that we gave her. This book is an old edition, but I will be able to give full particulars next day from

my book, which is a new one. I have no recollection of speaking to any one but the patient that night. That was the only injection I gave her that night.—no medicines. I gave her that injection because I have read of cases where people had revived under that treatment for periods more or less long, though not permanently. I did not then know that I had to repeat the injection if it was to be efficacious, nor do I know it now.

Q. Do you agree with this treatment. One or two intravenous infusions daily of a 2 per cent. solution of sodium bi-carbonate in a decimal 6 per cent. solution of sodium chloride. The quantity introduced should be one or one and half litre (litre equals 35 ounces) at each infusion. Five grammes of sodium bi-carbonate should also be administered every two hours during day and night?

A. I have no experience of that treatment to express any agreement with it.

I have not read till to-day of repeated injections in a case of this kind.

Q. For the treatment to be efficacious must not there be repeated doses of the sodium bi-carbonate administered internally?

A. I don't know. I haven't tried it.

Q. Are you an expert in diabetes?

A. I am not aware of it. I am not known as such.

Q. Do you think that the treatment I have just suggested is a good one?

A. I think it is worth trying.

(P. 412 of "Hector's Lectures on Chemical Pathology" is read to witness.) I did not know the treatment here recorded before the 19th February last. When I gave the patient that injection on Tuesday night, and went away, I left no instructions with anybody as to the further treatment. I saw her three times on that Tuesday. My first visit was between 9 and 10 A. M. That Tuesday night, before I left, I must have told somebody in the house about the critical condition of the

patient, but I cannot remember. I cannot say to whom I said it. I can't say if it was to any members of the family. Two members of the family came to fetch me that night, one of whom was Mr. Charles Pieris. I can't remember who the other was. I can't remember if I told Charles Pieris about the critical condition of Mrs. Pieris. Next morning, between 7 and 8 A. M. I heard from someone in my house that the old lady was dead, and then again between 12 and 1 P. M. I did not pay any visit that morning, because the carriage was not sent for me by them as usual. I was not surprised when I heard between 7 and 8 A. M. that she was dead. On that Tuesday night I went prepared to do the needful if bad symptoms occurred, and I expected to find bad symptoms. That expectation was based on what I had seen between 5 and 6 P. M. that evening.

On that visit I did not notice any prodromal symptoms of coma. I looked for them not because I expected to find them, but because I wanted to find out what her real condition was. I did not search for prodromal symptoms. I tested her condition, but there were none such present. There was no necessity on that occasion for me to search for prodromal symptoms.

Generally speaking Kusmaul's Coma takes some time to develop. It varies with different patients. Prodromal symptoms of Kusmaul's Coma are—drowsiness and incipient unconsciousness. If there is any line of demarcation I would begin from there. There are no other symptoms except, perhaps, deep noisy breathing. Other symptoms may lead up to coma, but they may disappear, such as restlessness, headache, and listlessness. This is a fairly full catalogue of the premonitory symptoms of diabetic coma.

FELIX R. DIAS,

A. D. J.

Further hearing adjourned for the 1st June, 30th May, 1903.

1st June, 1903.

Counsel and Proctors present as before.

(2) William Gabriel Rockwood, sworn.

Cross-examination continued. :—

I have ascertained the injection that I gave Mrs. Pieris on the night of the 3rd March. It was 3 per cent. solution of bi-carbonate of soda. The quantity I gave her was 20 ounces. I accept a Fellowship of the Royal College of Physicians as a mark of distinction. If Dr. Williamson is a Fellow of the Royal College of Physicians, I am not prepared to say that that makes him a man of authority, but he may be a man of some authority. I did not know if it is a mark of distinction to be a physician of the hospital at Manchester. Nor can I say if to be an assistant lecturer in medicine at St. Owen's College, Manchester, is a mark of distinction. I am not aware that Dr. Burney Yeo quotes Williamson as an authority. The temperature of the injection I gave Mrs. Pieris that night was about 100° Fahrenheit. I had tested her urine before February both this year and last year, but I cannot say when. I kept no notes of such examinations. After the 19th February I tested it almost daily. There was sugar in the urine, about 4 per cent. I also found traces of albumen. I did not test it for anything but sugar. I tested it for acidity, but did not find any increase in it which was marked. There was, however, a slight increase sometimes, and sometimes a decrease. I did not test for acetone nor diacetic acid. The presence of these two will not enable a doctor to infer the presence of B-oxybutyric acid. This latter acid is not one of the causes of coma. It does not help to cloud the brain.

I have had experience of over 1,000 cases of diabetic coma. I have kept no record of those cases, nor tabulated them. They were too many to tabulate, and I had not the time. In some of my cases I have tested for acetone and found it. The test for it is tincture of iron. That test would change the

urine into a reddish or violet colour. I have never tested for diacetic acid. I do not know the test for it, nor what the change on such test would be. I have never tested for B-oxybutyric acid. I know the test for that acid, namely, ammonia. That test would give a precipitate of oxybuturate of ammonia. I do not know in what form or shape that result would appear. I have never applied the ammonia test in any of my cases, nor has it been applied in my presence. I have only been speaking from what I have read. I cannot say whether that precipitate is formed in the shape of a powder or crystals. I have heard of crotonic acid, but have not seen it. I cannot say if it is a reduction product of B-oxybutyric acid.

Q. Do you or do you not agree with this statement on p. 426 of Ostler's "Principles and Practice of Medicine," fourth edition. It is now almost universally accepted that B-oxybutyric acid is the cause of diabetic coma?

A. I don't agree with it.

Q. Can you refer me to any medical authority disagreeing with the position advanced above by Ostler?

A. Oh yes, Professor Herter.

(The witness points out the last paragraph on page 393 of Herter's "Lectures on Chemical Pathology," 1902 edition. The witness also points out the first paragraph on page 394.)

(Mr. Perera for the executors formally objects to this line of cross-examination, which is utterly irrelevant to the issues. Mr. Norton says that he wishes to prove that the patient was for several days preceding her death in such a state of impending coma that it was utterly impossible for her either to give these elaborate instructions for her will, or to understand the nature of the documents she was asked to sign.) I allow the examination to proceed.

(The witness also refers to the last paragraph on page 403, which he says is a sufficient authority for his statement.)

I accept Ostler as a respectable authority on medicine, but not on treatment of diabetes. I can prove that he is not a reliable authority. The normal specific gravity of urine is between 1.015 and 1.025. The specific gravity is raised by the presence of sugar. Mrs. Pieris' specific gravity never exceeded 1.025.

Lassitude is not one of the prodromal symptoms of diabetic coma. I disagree with Williamson if he says that it is. Abdominal pains are one of the symptoms of diabetic coma, but not by themselves. Nausea by itself is not one of the symptoms of diabetic coma. It has never occurred in any of my thousand cases, nor have I had a case where vomiting was present. Shortness of breath and altered respiration are some of the symptoms, and so is headache, but not increase of temperature. In pure diabetes there is no rise in temperature. Restlessness and tossing about are some of the prodromal symptoms, as also constipation and increase of acidity in the urine. A sudden reduction of sugar in the urine is generally a symptom, as also an increase of the pulse. On the 19th February, when I was called in, nobody told me that the lady was suffering from diabetes, because I knew her case for a long time. On that day I spoke to the old lady herself and prescribed for her, having diabetes in view.

On the 19th February I gave her a fever mixture.

(Shown copy of prescription dated 19th February 1903, marked Z 43.)

I admit this was the prescription I gave her on that day. This contains three prescriptions; one is a fever mixture; the other is a blue pill; and the third a senna aperient. The pill was intended to work on the liver.

I had no reason on that day to think that constipation was present, but it is my invariable practice when attending a patient who is over 45 or 50 years to start with an aperient.

I would continue the aperient so long as it is necessary, even daily. Constipation would be an occasion for its daily use.

(Shown a copy of a prescription of the 20th February, marked Z44.)

I admit I gave this prescription on the 20th February. It is for four doses of Epsom salts. This was not for constipation, but to keep up the action of the bowels and to prevent constipation.

(Shown copy of a prescription of the 20th February, marked Z45.)

I gave this prescription also on that day for six quinine pills of 5 grains each to be taken twice a day. These were not given for fever but to be taken after the fever had gone down, to prevent its coming on again. She had no fever on the 20th February. That fever was, in my opinion, the result of a chill. A 5-grain quinine pill is not necessarily a dose for malarial fever. It is a very mild dose. Ten grains a day is not at all a large dose.

(Shown copy of another prescription dated 21st February, marked Z46.)

I gave her this prescription on the 21st February for an alkaline mixture.

I have no doubt that the previous medicines I had prescribed had been taken. This alkaline mixture was 50 grains of bi-carbonate of soda. One-sixth of that mixture was to be taken every 2 hours.

It was given to maintain the alkalescence of the blood.

The object of keeping up the alkalescence of the blood was this. The organic acids, i.e., toxins, eat up the normal quantity of alkali in the blood. It is, therefore, necessary to introduce sufficient alkalis to keep

up the normal alkalescence of the blood. A great reduction of the alkalis would cause unfavourable symptoms in diabetes. It would not lead to pain, but it is supposed to lead to coma if unarrested. The books say that that supposition is entertained by eminent doctors in Europe.

In prescribing that alkaline mixture on the 21st February I acted on that supposition.

(Shown copy of a prescription dated 22nd February, marked Z47.)

I admit I gave this prescription on the 22nd February for a belladonna liniment.

She was then complaining of a pain in her knee-joints and on the side, and the liniment was intended for those pains. They were not severe pains.

On the 22nd February she complained of sleeplessness.

(Shown another prescription dated 22nd February, and marked Z48.)

I admit I gave her this prescription on the 22nd for trional, a sleeping powder. This medicine would produce sleep even in the presence of pain. Morphia would be as likely as trional to produce sleep under the lady's then conditions. It was not more likely to do so, but a very large dose would.

Hale White is a reputed authority on the action of medicines. I don't agree with his statement (on page 310 of his book on Pharmacology) that trional is almost useless in painful states. In suitable cases I use morphia to annul pain. This was not a suitable case for morphia because the patient was getting on well with her digestion, and I did not want to disturb it by the use of morphia or opium. I also wanted to prevent constipation.

In her case I would have had to use a large dose of morphia, but I could have got the same result by the use of trional. I would have required a half-grain dose of morphia. On

that particular night there was no constipation present.

As a general proposition it is undoubtedly correct to say that the only drug that has gained universal acceptance in the treatment of diabetes is opium. Under opium I include morphia and codeia.

I agree that if coma was approaching it would be well to avoid opium. If coma is approaching I agree that, as a rule, constipation would be present.

If constipation is present, the use of opium would make it worse.

I did not on the 22nd February avoid the use of opium because constipation was present, and opium would have made it worse, but for other reasons. Diabetic patients can be worked up to take large doses of opiates. They might even take a one-grain dose three times a day. I agree that if a diabetic patient takes a one-sixth grain of morphia three times a day and increases it slowly he might go up to one grain three times a day.

On the 22nd February in the same prescription I ordered a bottle of piperazin.

I have never heard it suggested before to-day that piperazin is given to counteract the effects of B-oxybutyric acid.

I have seen phloridizin in print, but nowhere else. I have not read about it. I don't know what it is. I have never heard of phloridizin diabetes, nor do I know how it is induced nor cured. I don't know of any experiments made about it by eminent authorities. I have never heard of any connection between piperazin and phloridizin diabetes. I don't know how the latter can be artificially induced in a human animal, but I know how ordinary diabetes can be. I don't know what eminent authorities have said about the application of piperazin in cases of diabetes.

(Page 741 of Hale White is read to witness.)

I have never read this passage before to-day. I am not in a position to agree or

disagree with his remark on page 439 that phloridizin causes the disappearance, amongst other things, of oxybutyric acid in urine.

I prescribed piperazin for this lady for rheumatic and gouty pains of which she complained. She complained of pains in the hip, knees and back. It is a thing to be taken internally and not to be applied externally. I did not give it to her for gout, but for rheumatic pains.

It would counteract the effects of uric acid and lithic acid. It was intended to hold these acids in solution. I think the dose is a teaspoonful in half a tumbler of water every 3 or 4 hours. The directions are given on the bottle itself.

(Page 740 of Hale White is read to witness.)

I don't agree in practice with the opinion expressed at the bottom of this page about the effects of piperazin on uric acid.

F. R. DIAS,  
A. D. J.

Further hearing is adjourned for tomorrow.

FELIX R. DIAS,  
A. D. J.

1st June, 1903.

2nd June, 1903.

Counsel and Proctors present as before.

(2) William Gabriel Rockwood, sworn.

Cross-examination continued:—

I am not prepared to express an opinion one way or the other as to whether or not toxins act first on the higher centres of the brain and then on the lower. I don't know that the higher centres of the brain are those which involve will and judgment, and the lower those which involve consciousness.

The prescription Z44 refers to four doses of Epsom salts. If the patient had taken one dose a day of that there would have been a dose left for the 23rd and another for the 24th.

(Shown another prescription dated 23rd February, and marked Z49.)

I admit this is a true copy of a prescription I gave her on the 23rd February for six quinine pills to be taken twice a day—one pill at 7 A.M., one at 11 A.M. I did not order Mellin's food for the patient that day. I don't know that she had any that day, and no one told me of it.

As a rule, Mellin's food would be an improper food for a diabetic patient. I have no note of the specific gravity of her urine on the 23rd February, but it did not differ from that of other days. Even if the urine showed a sudden declension in sugar, Mellin's food would not be a proper food to be prescribed.

It frequently occurs that the urine of a diabetic patient does show a declension in sugar. In such a case I would relax my diet and give some starchy food. Mellin's food does contain starch.

Neil S. Campbell & Co. are a firm of chemists, etc., that I trust. If their bill for medicines supplied to Mrs. Pieris shows the prescriptions for Epsom salts repeated on the 23rd February, I will not question its correctness.

(Shown prescription dated 24th February and marked Z50.)

I admit I gave this prescription on the 24th February for a mixture of potash bicarbonate and soda bicarbonate. The dose was 30 grains every 2 hours, or 240 grains in 16 hours. This was not at all a severe alkaline treatment. If it was double the quantity, administered in half the above time, one may call it severe.

I gave this medicine in continuation of my previous treatment, and to maintain the alkalescence of the blood.

I then increased the strength of the alkaline treatment from 10 to 30 grains because I thought that the previous medicine

was not sufficient in alkalis, including the piperazin.

Piperazin is an alkali, though not like the alkaline salt in caustic soda or caustic potash. There is a great difference between an alkali and an alkaloid. Piperazin is not at all an alkaloid.

"Hydroscopic" means capable of absorbing water and retaining it. If Hale White at page 710 describes piperazin as a hydroscopic alkaloid, I don't agree with him. I object to the term alkaloid in the ordinary acceptance of that word.

I did not prescribe malted milk on the 24th. It would not be a proper food for diabetes, as it contains starch. If there was a marked decrease in sugar in the urine, malted milk would not be an improper food.

(Shown copy of a prescription dated 24th February and marked Z51.)

I admit I gave this prescription on that day for a belladonna pigment. It was intended for the pains in the joints, and I think also for the pains in the sides and the abdominal region.

I knew that she got a hot water bottle that day. That might be used for the stomach, sides, joints, or anywhere.

(Shown a prescription dated 25th February, marked Z52.)

I admit I gave her this prescription on that day for salol, which is an intestinal antiseptic. I gave that to her because the patient was complaining of an offensive smell in her motions.

I agree to the statement that the stools of diabetic patients become offensive in consequence of fermentative processes taking place internally. It is correct to check such fermentative processes by the use of an antiseptic like salol.

An antiseptic given under such conditions would not at all fail under prophylactic measures.

Q. Do you agree with Dr. Soundby that one of the precautions as a prophylactic measure in a case of diabetic coma is to check fermentative processes by means of antiseptic drugs?

A. I agree.

I don't agree with the statement of Hale White that from 150 to 500 grains of sodium bicarbonate is a large dose of alkali in a case of diabetic coma, because, in my opinion, 150 grains or even 250 grains is not a large dose, though 500 grains will be.

On Z52 there were 8 powders of salol, to be taken 3 times a day.

(Shown copy of a prescription dated 27th February, and marked Z53.)

I admit I gave this prescription on the 27th February. It is a mixture containing hydrocyanic acid. This is a medicine given for vomiting. I did not prescribe it for Mrs. Pieris for vomiting, but for the nausea she complained of after trying chicken broth. I was not told that she had been vomiting, nor had I any reason to believe so. I gave it simply for the nausea.

I cannot remember whether she had the chicken broth on the 26th, or the 27th, but I am certain I gave her this mixture after she had taken the chicken broth. The nausea would stop by the stopping of the broth. I see from the prescription that there were 6 doses of this mixture, and it was to be given once every 2 hours. I still say that it was given to stop the nausea. There were 30 minims of hydrocyanic acid in this mixture, i. e., 5 minims in a dose.

Mrs. Pieris was apparently not suffering from nausea on the next day, namely, the 28th. I am not in a position to say whether that mixture was repeated on the 28th. If such a repetition appears in the bill I won't deny that she had another bottle.

By that same prescription (Z53) I also ordered an aconite and belladonna liniment,

possibly for the pains in the same regions as before. By that prescription I also ordered 8 doses of Epsom salts and senna. That is a purgative, but not a strong purgative. It has a tempting smell, but an unpleasant taste.

Reading this prescription as a whole my belief now is that the nausea had disappeared when I ordered these medicines on the 27th. This senna and Epsom salts mixture was to be taken every morning. All these 3 medicines were prescribed on the same sheet of paper, and on the same occasion.

Q. Do you say that you prescribed this hydrocyanic acid mixture on the 27th and 28th for a nausea which you say was on the 27th very mild?

A. I say yes, on the presumption that a second bottle was obtained on the 28th. I only prescribe it once. I asked no questions as to whether she took this mixture on the 28th or not.

There was no new prescription given on the 28th February.

Q. On the presumption that you did your duty as a doctor and ascertained that your prescriptions were being obeyed, would not the fact be that on the 28th February your patient should have taken a dose of salts and senna and a quinine pill in the morning?

A. I can't say what may have happened that day, and so I cannot answer the question.

At that time I was visiting my patient twice a day. On those visits I made it my duty to ascertain whether my injunctions were obeyed. I am not in a position to say whether she took any medicines at all on that day. I have kept no notes of this case. I keep no notes of cases of patients whom I visit in their own houses.

I kept no charts of her temperature nor notes of her diet. Some one in the house used to keep notes of what was given her to

eat or drink. I don't know who kept those notes.

If Mrs. Pieris took another bottle of Meilin's food on the 28th, I did not order it.

(Shown copy of a prescription dated 1st March, marked Z 54.)

I have no recollection of having given her a prescription like this on the 1st March. It is not with the original prescriptions returned to me by the chemists themselves. I doubt whether I gave her this prescription. The other day I described the 1st March as being a momentous occasion. That was not said with reference to Mrs. Pieris' case, but because I was present when that man was breathing his last with spasms, etc. That was not my first death-bed, nor my first case of death from spasms.

I cannot say what medicines I gave Mrs. Pieris on the 1st March. I cannot say if I gave her any. Apart from my prescriptions I have absolutely no recollection of what treatment I gave the lady on the 1st March. I remember what was done on 2nd March, I then gave her some cough lozenges because she was complaining of a dryness in the throat which had set in that very morning. That dryness is not an ordinary concomitant of diabetes.

(Shown a copy of another prescription dated 1st March marked Z 55.)

I cannot admit that I gave this prescription in the absence of the original.

(Shown a copy of another prescription dated 2nd March and marked Z 56.)

I admit I gave her this prescription on that day for cough lozenges. If the prescription says "Dr. Rockwood's cough lozenges" it was not written by me. There is nothing known to me as "Dr. Rockwood's cough lozenges." What I wrote was "Compound cough lozenges."

I was referring to a particular kind of cough lozenges which the chemists were aware of.

When I order "Compound cough lozenges" they know what to compound.

They have my prescription for it.

David Rockwood is my son.

In the original prescription Z50 all the written matter, except the words "Malted milk," are in the writing of my son. It is headed Mrs. Pieris, also in the writing of my son. I don't know in whose writing these words "Malted milk" are. I think they are the chemists', but I cannot swear. I don't know if this is Harry Pieris' writing.

On the prescription Z56 there is an endorsement in Harry Pieris' writing: "Send above please on a/c Mrs. Jeronis Pieris" and signed Henry Pieris.

On Z50 in Dr. David Rockwood's writing there is an order for an india-rubber hot water bottle also, and cotton wool and oil silk. These latter are intended for retaining the warmth of fomentations in case of pain.

Taking the effect of the purgatives which I prescribed for this lady, I say that they would not have tended to weaken her. On the contrary, what I prescribed for her would have made her more active and energetic. The purgatives I gave her were not intended to give her 3 or 4 motions a day, but to keep her bowels open once or twice a day.

I saw her on the afternoon of the 1st March (Sunday). She then appeared to be in good health, though suffering from diabetes. She was not suffering from that disease from the 19th February, but for many years before.

Q. Do you suggest that she was as clear and unclouded in mind on the 1st March as she would have been if she had not been suffering from diabetes?

A. Yes.

I will not say that she was then physically as strong as she was a fortnight before. She was then less strong physically.

There is no connection between physical and mental strength.

Q. Do you say that a person not physically as strong as she had been before, and who had been suffering from such pains as have been here described, would be as capable to comprehend a long and intricate will as she would have been if free from such pain and weakness?

A. Yes.

On the 1st March, in my opinion, she was capable of writing. I did not test her on the point.

If she had been in the habit of writing, it is my opinion that she could have written a letter on that day. I don't know if she could have written a letter of 3 pages that day. If she had been in the habit of writing letters, I think she might have written a couple of pages of ordinary note paper with ease. She would have had no difficulty in signing her name 4 or 5 times. In my opinion on that day she was not so weak as to require restoratives to sign her name 5 times. I think it was Harry Pieris who told me on that day that the old lady had been signing her will. He gave me no further information than that. I was not told of any of the incidents at the signing of the will, nor that she had been called upon to sign it 3 times, nor that after the second signature she had to lie down and call for water. That statement is quite consistent with what I have said as to the lady's strength on that day as to writing powers. I can reconcile the two states by reference to analogous cases. The circumstances of those cases are within my experience. They have occurred about once a week in my practice, even before Mrs. Pieris died, and I had a case even last week.

One case I may cite is that a man who wants to pass urine may not be able to do so if half-a-dozen people are near him.

So I say that if Mrs. Pieris was able to sign her name 5 times with ease by herself, she may not be able to continue signing if surrounded by other people. The man who found it difficult to pass his urine when others were present will not require nourishment to assist him to do it. It is all a question of nerves.

Another analogous circumstance I may cite is a case where I saw a European patient that I knew in the hospital. I came across him quite suddenly and examined him. I then asked him his name and he could not tell me. He had forgotten it. A few minutes afterwards he was able to tell me his name. That also was the effect of nerves upon his disease.

It has also often occurred in my practice that a patient who has been weakened by illness when told that he has to sign his will suddenly collapses. That patient was one who had expressed his desire to make his will six months previously. I was only told of that case, and I was not present when he collapsed. In some cases we don't even tell a man he has to sign his will for fear he might collapse. I cannot call to mind the particulars of any case at which I myself was present when a man so collapsed. I had myself tested Mrs. Pieris for nerves before the 1st March. I had been previously spoken to in the house about the old lady's making the will. It was Harry who spoke to me on the subject after his return from Galle (22nd February). His exact words were "A will has to be made," or "Is it necessary that she should make a will?" or words to that effect. I replied, "Sensible people always make their wills when they are in the best of health." I cannot possibly say whether that conversation took place on the 23rd or 24th or later. At that time Mrs. Pieris was in the best of health barring

the diabetes. After that conversation the matter dropped and I heard no more about it. On the 1st March, when Harry Pieris told me that his mother had made her will, he did not say whether it was a long or short one, nor anything about its contents, nor did I inquire.

(Shown the will filed in the case.)

This has 10 pages of foolscap, closely written. I don't know whether this is a long or a short will, but it is longer than mine.

I should not call this a long document for translation to Mrs. Pieris on the 1st March.

I should say that on that day her mind and memory were clear enough to remember and enumerate her various lands and investments.

Q. Would her memory have been so keen and alive as to remember any properties, if any, that were omitted from the will?

A. Yes, I think so.

She did not tell me nor did any one else, on that 1st March, that she had been obliged to rest after signing her name twice. No one mentioned it to me, and I only heard of it two or three days ago.

Dr. Thomasz met me in consultation on the 3rd March about 5 or 6 p.m. He did not then tell me that, judging from the breathing, coma had already set in. He drew my attention to the hurried breathing, but did not suggest any cause for it. The object of that consultation was to see if he could suggest any new treatment. That treatment would depend on the symptoms. One of the symptoms then was the hurried breathing, but it soon subsided. Dr. Thomasz, after he came out of the room, and later that day, said that he did not like the hurried breathing, but as it soon subsided he attached no importance to it. He did not then or at any time say that it was a case of "Kusmaul's air hunger."



That consultation was not of my seeking. The lady's friends wanted a second opinion and suggested Dr. Thomasz, and so he was called in. I have given evidence before in Court in a case of diabetes. That was in the Kalutara Court in 1896. I was called in consultation to see the deceased. The doctor in attendance was Dr. Fonseka.

That was also a case of diabetic coma. I only saw that patient once. I gave evidence in that case, but I don't remember the circumstances of it. I accept the whole of the evidence I gave in that case.

I don't know whether I gave evidence for or against the will in that case. I was summoned as a witness and examined, and I stated all I knew, and all I thought. That is all I can say about it.

(The deposition of this witness in D. C. Kalutara No. C 130, Testamentary, is read to him, and marked Z<sub>57</sub>.)

I admit that is the evidence I gave in the case. That was my opinion of the case at the time. I don't know what the opinion of the District Court or Supreme Court was in that case. My knowledge of this disease has greatly increased since then. I prescribed Vichy water on the 25th February for Mrs. Pieris. I gave it to her as an alkaline water.

FRANK R. DIAS,  
A. D. J.

It being nearly 5 P.M., further hearing is adjourned for 4th June.

F. R. DIAS,  
A. D. J.  
and June, 1903.

4th June, 1903.

Counsel and Proctors present as before.

(2) William Gabriel Rockwood, *seorn*.  
*Re-examined.*

I repudiate the suggestion that has been made that I was a partisan in this case. I admit I am a man of considerable wealth in this country, owning large estates in different parts of the Island. The largest fees

that can possibly be offered to me will certainly not induce me to take sides. Mr. Charles Pieris or Mr. Harry Pieris is neither of them a friend of mine.

Beyond my professional relations with them I have nothing whatever to do with them.

I am a Tamil gentleman. Messrs. Pieris are Sinhalese people.

I say on my oath that I have not been biased in this case by any motives which ordinarily actuate the human mind, such as friendship, nationality, caste, or money.

In refusing to permit copies of my prescriptions being issued by the chemists I was acting on my long confirmed opinion and my usual practices. I did not know who Mrs. Pieris' executors were.

There are certain medicines which I may prescribe for one dose.

There is danger in a patient using that same prescription again without reference to me.

We have not in our profession any court of final appeal which decides once for all any questions of practice about which doctors may differ.

I have been cross-examined about several medical writers. All that I can say is that I respect their opinions, but am not disposed to slavishly follow them.

In real practice a doctor has to work out for himself the way in which he has to act. Local peculiarities, temperament, and idiosyncracies of a patient are things which have to be considered.

I firmly adhere to my statement that the mere fact of an eminent writer referring to the opinion of some other person does not make the latter an authority. I have a son named D. G. Rockwood, who has recently returned from England and joined the Ceylon Medical profession. Schafer's Book on Physiology is a book of authority in our profession. That professor refers to various experiments

and opinions of my son on pp. 448, 452, 454, 455 of his book. That circumstance does not make me look upon my son as an authority.

Dr. Rockhart Gillespie's book on the Diabetes is also a book of some authority. Page 35 of that book refers with approval to certain opinions of my son.

Dr. Gray's "Year Book of Medicine and Surgery" is an Encyclopedia known throughout the world. Page 350 of that book also refers to certain opinions of my son. Though I would respect all his opinions I would not look upon him as an authority in these books.

I prescribed trional to Mrs. Pieris to produce sleep, because, in my opinion, that was sufficient for my purpose and not because constipation was present, nor any prodromal symptoms of coma. As a matter of fact, Mrs. Pieris never took the trional, as she told me that she was able to get some sleep without medicine.

I am not prepared to accept the theory that oxybutyric acid is the casual agent of diabetic coma. That acid is not peculiar to diabetes. It is present in measles, scurvy, scarlet fever, and starvation.

From my own personal experience and my reading I say that diabetic coma is not the only or inevitable result of diabetes. I should say about 50 per cent. of cases of diabetes end fatally in diabetic coma.

In my practice in treating cases of diabetes, I do not depend entirely on the results of the analysis of the urine. In the case of Mrs. Pieris my examination of her urine did not disclose any abnormal quantity of sugar or any abnormal specific gravity, or albumen.

The condition of her urine was not such as to make it necessary for me to test for acetone.

Men in actual practice do not go experimenting by testing for various acids which, in their opinion, may be unnecessary.

Q.—The suggestion made in cross-examination all along was, so far as I understand

it, that your prescriptions were intended for prodromal symptoms of diabetic coma. Is that so?

A.—I laugh at the suggestion. I am quite prepared to submit all the prescriptions I gave this lady to a competent body of doctors as the proper alkaline treatment for diabetes.

I still adhere to my statement that 240 grains of bicarbonate of soda extended over 15 hours is not too large a dose for a diabetic patient.

I know the publication called "The Practitioner" edited by Malcolm Morris. It is a well-known quarterly journal.

(Counsel reads page 97 of "The Practitioner" for 1902. In the third class of cases Williamson agrees with all the other authorities that sodium bicarbonate should be given in large doses, up to 2 ounces in the 24 hours.)

I am quite pleased to hear that, with which I entirely agree. Two ounces are equal to 660 grains. Mrs. Pieris' case was not so severe a case as Williamson's third class of case. Had it been so, I would have given that increased dose.

The dose I prescribed for her was regulated according to the results of my treatment and observation.

(Counsel reads further: "This is now the fully recognised treatment for any case of diabetes which shows either of the premonitory signs of coma, or even without these, for any case where the examination of the urine reveals a state of acidosis.")

Yes, I agree with that opinion. Although I did not test for acetone or oxybutyric acid, I was able to discover the acidity of the urine by the ordinary test and by looking at it. By looking at it I mean by looking at the reaction after the application of the ordinary tests. We practitioners do not keep large laboratories fitted up for experiments in analysis. There is no rule or etiquette in our profession to describe "Diabetic Coma" as "Kusmanull's Coma."

Even if I were discussing a case of "Kusmaul's Coma" with another doctor and described it as "Diabetic Coma," he would know what I meant.

I was examined about the Medical Annual for 1903. I have since then looked over many of these annuals. Most of the articles on diabetic coma there have been written by Dr. Soundby, and he never calls it "Kusmaul's Coma."

The Medical Annual for 1900, page 162, says that Kusmaul gave the disease its name. This article is written by Dr. Burrall, of New York, and he goes on to say that the pathology of this disease was then a matter of uncertainty. Even now it is a matter of uncertainty. In my experience the onset of coma in diabetes is generally sudden. It may also be gradual.

(Counsel reads pages 137, 138, of Dr. Soundby's Lectures on Diabetes 3rd edition.)

I agree with the views here expressed. On that Tuesday evening when I saw Mrs. Pieris about 5 or 6 P.M., I noticed no prodromal symptoms of coma, but I did when I saw her at 10 or 11 P.M. From the condition in which I then found her I am able to say that the attack in her case was sudden.

(Counsel reads page 130 of the same book beginning: "In his summary of symptoms, Kusmaul speaks"—etc. Mr. Norton points out that this passage is omitted from the 4th edition of 1900.)

On the Tuesday evening between 5 and 6 P.M. I did not find any dyspnoea, rapid heart's action, groaning, screaming or jerking, but there was pain. I did not test the temperature and so cannot say whether it was normal or subnormal, nor can I say whether there was abundant urine containing sugar. I cannot say if there was contraction of the pupils, as I did not look. Nor can I say if there was paralytic distension of the stomach.

Quain's "Dictionary of Medicine" is known throughout the world, and is recognised.

(Counsel reads page 382 of the 1902 edition, beginning "In by far the largest number of cases," etc., under the description of diabetic coma.)

I agree with this description of the symptoms of diabetic coma. On that Tuesday evening the patient did not complain of pain in the abdomen. Neither she nor any one told me that she had vomited. She had no dyspnoea, nor was she drowsy. I am able to say that all these symptoms quoted from Dr. Soundby and Quain were absent in Mrs. Pieris' case from the 19th February up till the evening of Tuesday, the 3rd March. In the whole of my treatment of this case during this period I never once treated her for coma, because it was unnecessary.

The Counsel cross-examining me stated that the alkaline injection ought to have been repeated in 12 hours. I agree with that statement, and I would have repeated it had I been called in, and had the lady's condition permitted of it. As a matter of fact, I had another bottle of that injection ready to be used if necessary.

Mr. Charles Pieris and another came for me that night, and I asked them what the necessity was. They described the symptoms and I guessed what the matter was. So I went on, directing my son to get the necessary injection prepared.

Piperazin is a well-known specific for rheumatic pains. I believe in it, and prescribe it largely. I am certain that I never prescribed it to Mrs. Pieris for prodromal symptoms of coma. I gave it to her for the rheumatic pains that she was complaining of. I still maintain my opinion that this medicine is not an alkaloid. Dr. Thomasz was a distinguished pupil of mine. He was afterwards House Surgeon of the General Hospital under me, and now he is the 2nd

Surgeon. Dr. Paul was about 5 years ago House Surgeon under me.

On the evening that Dr. Thomasz and I saw her, I said that we noticed rapid breathing in the patient. We both remarked it, and I put it down to her exertion in walking from her commode to her couch, a distance of 25 or 30 feet, rapidly. We watched the symptoms rapidly subside. Dr. Thomasz and I consulted with regard to the treatment I was pursuing, and he agreed with me, and had nothing new to suggest. Dr. Thomasz is a man to whose opinions I attach weight. We have pretty often met in consultation. I have always found, when called in consultation with him, that his treatment of cases was correct.

Mrs. Pieris was about 61 years old.

FELIX R. DIAS,  
A. D. J.

Colombo. During my career I have had a large experience of diabetic cases. On Tuesday evening, the 3rd March, I was called in consultation with Dr. Rockwood to see Mrs. Pieris. I saw her. It was then about 5 P.M. I was advised of the treatment that was being pursued, and had no alteration to suggest. When I saw her that evening, her mental condition was intact. I am prepared to say on my oath and on my reputation as a professional man that on that evening when I saw her she was not in a state of coma. I heard Dr. Rockwood speak to her and ask questions, and she gave answers. I considered those answers intelligent and well thought out. I found when I went into the room that the patient was breathing rather hurriedly, and I asked Dr. Rockwood if that condition existed in the morning, and he said it did not. It was considerably relieved before I left the room, about 20 minutes afterwards. It was accounted for at the time by some ladies in the room, and I was satisfied with that explanation.

I know the hard breathing, which is one of the prodromal symptoms of coma. Her breathing that I then noticed was not of that kind. I was not at all surprised to hear of a sudden supervention of comatose symptoms some hours after I saw her that evening. I would not have been surprised if those symptoms had commenced even two or three days afterwards. They may have commenced at any time.

In my experience in about 50 per cent. of cases comatose symptoms in diabetes come on quite suddenly.

The treatment that Dr. Rockwood was giving the patient was what was known as the alkaline treatment. That is the treatment largely recognised in diabetic cases, especially at Karlsbad, to which most of the diabetic patients go.

I know of a gentleman who has both acetone and sugar in his urine and yet goes about and attends to his work. His urine has

(3) Henry George Thomasz, sworn.

I am now the 2nd Surgeon of the General Hospital, Colombo. I passed through the Ceylon Medical College, and am an L. R. C. P., Edinburgh, and F. R. C. S., Edinburgh.

Dr. Garvin is the principal surgeon of the hospital. During his absence in charge of the Boer camp for more than two years, I acted as the chief surgeon of the Colombo Hospital.

I have been acting as Assistant Colonial Surgeon in various parts of this island. About 20 years ago I was also House Surgeon under Dr. Rockwood. I have been 21 years in the profession. I have enjoyed a private practice both in out-stations and

been examined by Dr. Chalmers, the Pathologist of the Ceylon Medical College.

In my opinion that gentleman is in full possession of his mental faculties and quite competent to give directions for making his will.

(Mr. Norton objects to this as being irrelevant.)

The gentleman I refer to is myself, and I now have Dr. Chalmers' analysis of my urine. I can produce it with his consent if necessary.

When I left Mrs. Pieris that evening I had no doubts whatever as to her mental condition. Her faculties were in no way impaired. She was not drowsy. She knew her surroundings, and even asked Dr. Rockwood why his wife had not been to see her.

I was not present when Dr. Chalmers analysed my urine. I have not the slightest idea if Dr. Paul assisted at that analysis. The quantity of acetone has not been stated in the analysis. I can't say if acetone to be injurious must be present in large quantities. No one has yet ascertained what amount will be injurious.

I have no authority for saying, nor do I say, that the mere presence of acetone in urine is injurious. I have felt no ill-effects on my mental faculties from the presence of acetone in my urine.

Q. Has it impaired your activity?

A. I will not answer that question.

It has not interfered with my mental activity at all.

Q. Has it interfered with your physical activity?

A. I don't know. Nor do I think it has.

I received no report of diacetic acid having been found in my urine.

Q. Is not the presence of oxybutyric acid to be inferred from the joint presence of acetone and diacetic acid?

A. I have no idea on the point.

There is a test for oxybutyric acid, but I have not tried it, nor seen it tried. The presence of that acid in any quantity has an injurious effect on a person.

Diacetic acid gives a brownish red coloration with the perchloride of iron test.

(Counsel reads page 291 of Williamson's "Diabetes Mellitus.")

I agree that the presence of oxybutyric acid is generally recognised as the cause of coma, but I myself don't agree with it.

I cannot say, because I have had no experience of it, that the statement that acetone in quantity and diacetic acid are indications of a severe nutritional change in the organisation of a diabetic patient is correct or not. I have experimented with those acids, but dogs get fat on them.

The tests for acetone and diacetic acid require no large laboratory. There is a laboratory attached to the Medical College, namely, Dr. Chalmers one, at which I could get an analysis made if I desire it. There is a Government analyst, named Dr. Sinnatamby, but I don't know if he can examine urine.

He usually examines stomachs, &c., for poisons, &c.

I know Mr. Bamberg by repute. He is supposed to be a professional analyst.

In my opinion urine is the most important channel for investigating impending coma.

An analysis of the urine by a skilful analyst would enable a doctor to discover if coma was impending.

Herter is an authority on diabetes, and I agree with his statement on page 413 that the advent of coma can always be predicted by an analysis of the urine.

I don't accept the division of diabetic coma into three classes: (1st) by collapse; (2nd) Kusmaull's Coma; (3rd) by intoxication.

I don't appreciate the distinctions drawn by Williamson at the bottom of page 280 of

his book. I only recognise two sorts of diabetic coma, namely, the one which sets in with prodromal symptoms, and the other which comes on suddenly.

The latter kind may or may not correspond with diabetic collapse.

Under this class of cases, cardiac failure may come on first, and coma afterwards.

I accept Dr. Rockwood's opinion that Mrs. Pieris' case was one of ordinary diabetic coma. I am bound to accept that opinion.

In a way I know what is meant by the term "Kusmaull's Coma".

I don't think it got that name because Kusmaull first described its symptoms in 1874.

I deny that Kusmaull's Coma as now understood is synonymous with the ordinary diabetic coma.

I accept the description of diabetic coma given at the bottom of page 512 and the top of page 513 of Gibson's "Text Book of Medicine," vol. 1 as a correct description of diabetic coma, Kusmaull's variety.

FELIX R. DIAS,

A. D. J.

It being nearly 5. P.M. further hearing is adjourned for to-morrow.

F. R. DIAS,

A. D. J.

4th June, 1903.

5th June, 1903.

Counsel and Proctors present as before.

(5) Henry George Thomasz, sworn.

Cross-examination continued:—(Counsel reads page 276 of Williamson's "Diabetes Mellitus").

I don't agree with this description of the symptoms of Kusmaull's Coma, because Kusmaull has never stated that his patients became comatose. I speak from authority that Kusmaull never spoke of coma or of any peculiar smell in the breath. I don't admit that Kusmaull's Coma as now known

in the profession answers to the description given in the passage now quoted. I speak on the authority of page 150 of Dr. Soundby's "Lectures on Diabetes," 3rd edition.

This is not a description of Kusmaull's diabetic coma, but a description of certain symptoms referred to by Kusmaull. I admit that these symptoms, if unchecked, would lead to coma.

(Counsel reads page 337 of Dr. Soundby's "Lectures on Renal and Urinary Diseases," 4th edition.)

I admit Dr. Friericks as an authority. I accept the paragraph just quoted beginning "In the second group," etc., to be a correct description of Kusmaull's typical complex of symptoms, plus the peculiar odour and the coma. Kusmaull himself never spoke of coma. He only described some symptoms which he discovered which, if unchecked, would lead to coma, not necessarily in diabetes alone but in other diseases also.

I admit that the symptoms above described have been appropriated by the medical profession to diabetic coma, but not solely to that disease.

I don't agree with the statement made by Dr. Soundby on page 330, as is well known diabetic coma was described by Kusmaull in 1874, for Dr. Soundby distinctly says that Kusmaull never spoke of coma. (Witness refers to page 151 of Soundby's Lectures, edition 3.)

In our profession Osler is accepted as an authority. (Counsel reads page 425 of Osler's "Principles and Practice of Medicine".)

I don't deny the statement made here that Kusmaull first described the symptoms of diabetic coma. What he did was to first bring to the notice of the profession certain symptoms which eventually led to coma.

(Counsel reads page 221 of Allbutt's "System of Medicine," Vol. III. Article on Diabetes Mellitus by Dr. Soundby.)

I don't agree with the passage "The liability of diabetes to terminate suddenly in a peculiar form of coma has been known for many years, but its special features were first described in 1874 by Kussmaull, whose name has been attached to the affection." I have already given my reasons for my agreement.

There is a difference between diabetic and uraemic coma.

Contraction of the pupils, jactitation, and convulsions may be present in both diseases. I don't know the difference between the two, as I have not been studying the subject for this occasion.

In a case of Kussmaull's coma the treatment would be both dietetic and medicinal. If the diet had been very restricted, you may have to supply carbo-hydrates, but with very great care. If the diet had been liberal one might have to cut off carbo-hydrates. Constipation will have to be avoided. If present it will have to be relieved. In my opinion an aperient will answer the purpose, but there is a difference of opinion as to whether a drastic purgative or a mere laxative should be used.

I know nothing of Von Noordeen. I only heard of him two or three days ago. In treating a case like this I would adopt an alkaline treatment, including Vichy or other alkaline water. If other symptoms intervened I would treat them specifically. If there be pain in the abdomen, belladonna liniment would not be an improper treatment. If nausea or vomiting supervened it would also be treated specifically. Nausea would precede vomiting, or come after it, or it may exist without vomiting at all. If nausea be caused by food distasteful to the patient, I would treat it by stopping the food or changing it. If there be vomiting, hydrocyanic acid would not be an improper treatment, but it may be given as a sedative. In a case of nausea which has disappeared it might be necessary to prescribe hydrocyanic acid as a prophylactic. In such a case I

would give about 5 minims 3 times a day. I have never prescribed more than that in my life, and the dose mentioned in the pharmacopoeia is from 2 to 8 minims.

Q. If at the end of those 3 doses the patient said there was no nausea, and you had no reason to suspect its recurrence, would you not stop that acid?

A. Yes.

Q. Without any nausea and without any vomiting would you consider it necessary to give a patient hydrocyanic acid for 2 days every 2 hours, amounting to 60 minims altogether?

A. No, I would not.

The acidity of urine depends as well on the presence of free acids as of acid salts. I believe that any increase in the acidity would be attributable to the free acids as well as to the acid salts. To ascertain the increase of the acidity due to the free acids it will be necessary to use a standardized alkaline solution. It can't be determined by the mere use of litmus paper. In diabetes the alkaline treatment is based on the theory that pathological acids are formed in the system which eat up the alkalis in the blood. In all cases of diabetes, whether there be prodromal symptoms or not, the alkaline treatment would be a proper treatment. That treatment takes into account the digestion of the patient. The remedies may be given 2 or 3 times a day, and not necessarily before food. The doses usually given are very large. I would give doses of about 2 drachms 3 or 4 times a day of bicarbonate of soda combined with citric acid. By a large dose I mean about 2 ounces a day, which has been given by Dr. Williamson. That is not necessarily a dose given for diabetic coma.

I have never myself given a 2-ounce dose, nor do I know of anyone who has. I agree with Williamson's statement that in severe cases the alkaline treatment is useless, but it is given as a last resort. I agree with the opinion expressed on page 411 of Herter

beginning "Alkaline salts have been extensively used," etc., only I don't think it necessary to wait till the patient is actually in a state of coma. The excessive withdrawal of alkali from the blood would lead to a state of intoxication. I agree with the opinion expressed at the bottom of page 356 and the top of page 397 of Herter. I have never heard of Dr. Horder, the author of the article on Diabetes in the "Medical Practitioner" for 1902. That is a monthly magazine which I see only occasionally.

The dose of 2 ounces of alkali I consider a heroic dose, necessary only for certain critical cases. In the ordinary alkaline treatment I would not prescribe a dose every 2 hours, because it would not be necessary. Such frequent doses might tend to disturb the patient's digestion, which has to be avoided. My doses would be half an ounce twice a day with 5 ounces of water and citric acid, or  $\frac{1}{4}$  of an ounce four times a day.

In ordinary diabetes, before any of the pathological acids have been formed, the alkaline treatment is based on the theory that it builds up the cell structures of the system.

I went to the Tuesday consultation with Dr. Rockwood. I think before we got to the house we had a conversation about the case.

I believe he then told me that he was giving the patient animal food in the shape of broth, but I may be mistaken on this point. I think more than one of the ladies in the room who spoke English told us that Mrs. Pieris had been walking to and from the commode just before we went in. I remember entering the room after Dr. Rockwood, perhaps half a minute after him. I did not stop following him, but I was talking to some one as I was walking behind Dr. Rockwood. He did not tell me that he had seen the lady walk back from her commode. When I entered the room she was lying on her bed.

She may have had a sheet thrown over her, but I cannot remember. I cannot recall the whole history of the case as given me by Dr. Rockwood. I gathered that the patient had been ill for about 2 weeks, that her illness commenced with fever, which lasted for about a day; and I think he also mentioned some pains on her left side. I have some idea that the fever had some connection with the spleen. He also told me that the patient passed about 6 bottles of urine a day. By a bottle I mean one rather larger than an imperial pint.

He also told me there was sugar in the urine, and I can't remember if he told me much more.

I don't think he told me anything about vomiting or nausea, or pains in the joints, or of her aversion to chicken broth. At the close of our consultation somebody in the house gave Dr. Rockwood some prescriptions, which he showed me. I glanced over them, and saw Dr. Rockwood's treatment for that day (Tuesday).

At the time there were three ladies and some female servants in the house. The ladies were Mrs. Mendis, Mrs. E. L. F. de Soysa, and Mrs. Harry Pieris.

I know Harry Pieris. He was also there. It is quite possible that I spoke to Mrs. Mendis that night. If she says so she may be right. I knew all those ladies, and I may have spoken to all of them. Chemists in this country return the prescription with the medicine if they are asked for it. If not they are filed by them. In about 50 % of cases they are usually returned unasked. I don't know what became of the present prescriptions after I saw them that night.

I examined Mrs. Pieris that night myself. I examined her chest and heart with a stethoscope as soon as I went in. I felt her hands but not her legs or feet. Her hands were not cold, but were about normal. I found her lungs normal and her heart normal, but a little excitable. I think her pulse was

about 120, but I have made no notes of my examination. Whilst I was examining her chest she was still breathing hard, but she stopped when I asked her to do so. I had a conversation with the lady in Sinhalese, which I can talk very well.

I asked her simple questions, such as a doctor would ask a patient. I said I was sorry to see her in that state. She replied, but I can't remember what it was. She gave me replies, but not in monosyllables. I can't remember what I asked her next, nor what she said. I asked her if she had any pain, and she said she had. I can't remember what was the longest sentence she spoke. She complained of some undefined pain. That was about all the conversation between her and me. Dr. Rockwood was then by my side. I believe he also then talked to her but I don't know about what. My recollection is that he got one of the three ladies who were present to speak to the old lady on his behalf, and she answered them, and they were interpreted to the doctor, but he himself understood Sinhalese.

I asked the patient why she did not use a bed-pan. She was about to reply, when one of the ladies said that it was a dirty habit, and the old lady, who was very clean, did not like it. I can't remember which lady it was who said it.

We were altogether in the room about 20 minutes on that occasion. The disinclination to a bed-pan is very common, even in hospitals. I have had frequent cases where a man even when dying insisted on going to a commode. Mrs. Pieris' hurried breathing eased down considerably before I left the room. There was a little of it when I left, that is, the breathing had not then become normal. When I first noticed it I regarded it as a bad symptom, which required careful scrutiny. I was not then aware that she had executed a will. I heard nothing about her will for a long time. I was never told by anybody that on the Sunday before I saw

her she was unable to sign her name three times.

Generally speaking purgatives do weaken patients in certain cases. That would depend on the type of purgatives used.

Q. Supposing the patient's condition was as follows:—During a period of 12 days she swallows 6 grains of blue pills, 32 grains of compound colocynth pills, 6½ ounces of Epsom salts, 2 ounces of sulphate of soda, and 7½ ounces of infusion of senna. In your opinion would that have a tendency to induce weakness when the patient was being treated for Kusmaul's symptoms of diabetes, assuming that the pills were taken every night, and the medicine every morning, and assuming that constipation was absent?

A. I do not understand the reason for the purgative if constipation was absent. If the patient had only one evacuation or even two indifferent ones, such continuous doses might be given.

Q. If constipation be absent, and the bowels working normally, would there be any necessity in your opinion to give such purgatives?

A. It would be necessary to purge a diabetic patient, but I would not have purged a patient for such a long period.

Nor would I have prescribed such large doses during such a period. I cannot agree with that treatment for a patient under the conditions above stated.

Even if constipation were present I would have considered it unnecessary to prolong the purgatives for so long a period.

If it were unnecessary it would be wrong, but that would depend on the conditions under which the purgatives were given.

If constipation were present, such repeated doses will not weaken a patient.

If the quantities now read out to me were administered during 12 days, it would have indicated that constipation existed and was very serious.

Opium and its alkaloids are used by some persons for diabetes, but I don't prescribe it largely since my last visit to England in 1897.

(Counsel cites page 529 of Burney Yeo, Vol. II.)

I agree with the statement here that opium is universally accepted in the treatment of diabetes. It reduces the quantity of sugar in urine. I would not hesitate to give morphia for pains in a diabetic patient, unless I suspected that the kidneys or liver were out of order. I think that where a diabetic patient is already in a state of drowsiness, it would be wrong to administer morphia. I know trional. This drug would only be efficacious in such a patient if it induce sleep.

Q. Will this drug induce sleep in a patient when there is pain?

A. That will depend on the quality of the pain.

Q. If the pain is in the region of the abdomen would trional ease the pain?

A. I would like to know if the pain was inflammatory or of a reflex character.

In the latter case I think trional would ease the pain by inducing sleep. In the former case it would have no effect.

Q. Assuming that drowsiness is absent, and pain of a reflex character present, would not opium or morphia be more effective than trional to ease pain by inducing sleep?

A. It may be, but we always prefer to prescribe a milder drug before having recourse to opium or morphia, as the latter tends to bind the secretions. I would not hesitate to give morphia to such a patient, but I would always start with a milder drug, such as trional, bromide, or chloral. In a case of acute pain, the other conditions being present, I would not hesitate to use morphia.

Q. In cases of nausea and vomiting is it usual to include morphia?

A. In some cases it would induce vomiting.

If epigastric pain is present, and the pain does not originate from the liver, it would

not be improper to use morphia in a dose. If I apprehended drowsiness in a diabetic patient I would carefully abstain from the use of morphia in a mixture.

Q. Would you consider a person who could not write her signature 3 times without resting and asking for water to be a person in perfect health?

A. No, I consider that to be an indication of physical weakness with cardiac syncope. What I mean is something like a transient fainting fit from being suddenly put into an erect posture.

Q. Would not that fact of itself betoken weakness?

A. Yes, but not much weakness. What I mean is that a patient, who has been lying on her back even when not suffering from serious illness, when suddenly raised to an erect posture, may get a fit like that. I can't say if in the case of Mrs. Pieris she was suffering from serious illness on that Sunday. I don't know that she was suffering from any weakness of heart on that Sunday.

If a person has been on his back for, say, 10 days, and is suddenly put into an upright posture, he may get a transient fit like that. In my own case after 5 days of illness when I first got up I got a fit of giddiness. The doctor examined me, but found my heart all right.

I was then suffering from a fever, which in itself is very reducing. I then used to walk to my commode, when necessary, a few feet away from my bed. I did not have to walk 30 to 35 feet each time.

Q. Will a patient who used to walk 30 to 37 feet a day more than once be likely to get such a fainting fit if put into an erect posture?

A. I can't describe exactly to what such a fit was due, but we all know that it is due to sudden cardiac failure.

That failure might of itself be due to weakness caused by strong purgatives. I say that on that Tuesday Mrs. Pieris' mental



condition was intact as a result of my own observations, and of the answers she gave to my questions, and of Dr. Rockwood's past history of the case, and from what I was told by the ladies in the room. None of the ladies in the room helped me with the suggestion that her mind was not intact though they told me of her symptoms. I can't remember if I asked any of them for her past history. I think I spoke that night with Mrs. Harry Pieris, and I may have spoken to Mrs. Mendis, and Mrs. de Soysa may have volunteered some statements.

I did not know Mrs. de Soysa before then. I did not ask any of the ladies that night anything about the old lady's mental condition. I would have done so had I any suspicion. I was not called in or asked by anyone to test the lady's then mental condition. That Tuesday neither Mrs. Harry Pieris nor Mrs. de Soysa told me that the old lady had executed a will.

Q. Are you in a position to-day, from your one examination of Mrs. Pieris on the 3rd March, to express any opinion, one way or the other, as to her competency to understand this long document, and to deal effectively with her numerous properties on the 1st March?

(The will is put in the hands of the witness.)

A. I cannot hazard any opinion on that point.

Q. Did you not leave the room that evening (Tuesday) with the impression that she was in a state of diabetic coma?

A. No, but I suspected that coma would come on sooner or later. I did not tell Dr. Sinnetamby the next day that I had diagnosed Mrs. Pieris for diabetic coma. I saw him on the following day (Wednesday), but I don't know what I said to him then, but I am perfectly certain I never told him that I had seen her in a state of coma.

Re-examined.—No questions.

FELIX R. DIAS,

A. D. J.

Mr. Norton opens his case, and calls —

(1) Samuel Paul, sworn.

I am a Bachelor of Medicine and Master of Surgery of the University of Madras. I passed in the first class. I am one of the only two who have passed in that class in the history of that University. I am also the Johnstone Gold Medallist of the University. That medal is given to the most distinguished student after a 5 years' course. I obtained 14 certificates of honour. They are given as a reward to those who obtain above 75 per cent of marks in certain subjects. I am also the "George Smith" prizeman for Pathology. In July, 1900, I became an M. R. C. S. of England and an L. R. C. P., London. In November, 1901, I became an F. R. C. S., England. No other native of this country has that distinction to my knowledge. I am also a member of the Anatomical Society of Great Britain and Ireland, and am now a lecturer on Anatomy in the Ceylon Medical College. I am also a Director of the Bacteriological Institute of Ceylon. It is a Government Institution. For 3 months I have acted as 2nd Physician of the General Hospital, and for 3 weeks as 2nd Surgeon. My present appointment is as lecturer and director of the Bacteriological Institute.

I was present when Dr. Rockwood was examined and cross-examined. I have read and studied the prescriptions given by him to Mrs. Pieris. I heard him say that she died of ordinary diabetic coma. That is also known as Kussmaul's variety of diabetic coma. From Dr. Rockwood's evidence I gathered that he was treating her for ordinary diabetic coma, or Kussmaul's coma. That kind of coma has prodromal symptoms. They are quite detectable by the physician. The prodromal symptoms begin with (1) marked constipation, (2) abdominal pains, (3) nausea, (4) sometimes vomiting, (5) increased pulse rate, (6) altered respiration, *i. e.*, increased or deeper than normal, (7) the presence of large quantities of acetone, di-acetic acid, and B-oxybutyric acid in the

urine, (8) listlessness, (9) restlessness, (10) tossing about in bed, (11) the onset of drowsiness from which the patient may be awakened up at first, and sometimes even at the last, (12) sometimes a sudden diminution of the quantity of urine, (13) sometimes a sudden decrease of sugar in the urine, (14) sometimes traces of albumen in the last stage, and (15) sometimes urinary casts. The patient finally becomes comatose.

In a case of diabetes all these symptoms need not always be necessarily present. In a fatal case of Kussmaul's Coma some of these symptoms may not occur at all. The presence of any of these symptoms in a case would portend that the patient is verging on to coma.

The urine is a very important agent in diagnosing a case of diabetic coma. The tests for acetone and di-acetic acid in large quantities would always indicate the presence of B-oxybutyric acid. The test for the acid is also well known. This acid acts by poisoning the tissues of the body, particularly those of the brain. Judgment, will, and memory are the higher functions of the brain. Ordinary sensations of movement are among the lower. This acid would act first upon the higher centres of the brain. In a case of Kussmaul's Coma the physician should, in my opinion, first examine the urine. If he finds acetone and diacetic acid present in large quantities, he should alter the diet. If the patient has been on a strict diet, then he should increase the carbo-hydrates. Malted milk, Mellin's food, and cow milk fall under this category. He should then be treated with purgatives or laxatives, and put upon an alkaline treatment. The usual salt given is bi-carbonate of sodium, from 90 grains up to 2 ounces in 24 hours. I would then give divided doses of alcohol throughout the day, such as brandy and water. Thirst is a symptom of diabetes. I also direct my treatment to any special symptoms that may appear.

In a case of diabetes coma, the abdominal pains are sometimes apt to be very severe.

Opium and its alkaloids, codeia and morphia, are accepted drugs in the treatment of ordinary diabetes.

In the case of a patient complaining of severe abdominal pains I would certainly give an injection of morphia, if no symptoms of coma be present. If I apprehended the presence of coma I would certainly not give morphia, as it would be dangerous. I know trional. It has no soporific effect in the presence of severe pain. I was in Court when Dr. Rockwood said that he had prescribed trional to Mrs. Pieris, but she had not taken it. My inference from that is that she came in for drowsiness, and there was no necessity for it.

I have totalled up all the purgatives prescribed for this lady from the 19th February to the 4th March. It was a very large quantity. I think that the use of such a large quantity of purgatives indicates obstinate constipation. If a patient had no constipation, such a large quantity of purgatives would not have been necessary. The quantity and quality of the purgatives used here were not necessary for the purpose of simply keeping the bowels clear. Trional is an alkalioid. Hydrocyanic acid is familiar to me. It is prescribed for vomiting or nausea. I usually give 3 minims, about 4 times a day. If a patient get nausea by using chicken broth, I would stop the broth. I heard Dr. Rockwood say that the nausea was normal when he prescribed hydrocyanic acid. If that was the case it was not necessary to have given 5 minims every 2 hours, and to have increased it next day. The consumption of that quantity indicates to me that the patient was vomiting and not merely suffering from nausea. I agree with Dr. Thomasz that that was a heroic dose. I noticed a marked change in the treatment on and after the 1st March. The quantity of alkali in the prescription has been increased. This betokens that drowsiness was getting worse, or that the case was hopeless, or that she was quite well. The alkali was increased

before the 1st March. There was a marked change in the treatment from that date. That indicates to me that the case was hopeless, and the doctor had given her up, or that she was absolutely well. The highest point in the alkaline treatment was reached in the prescription Z50 of the 24th February. Z54 of the 1st March shows a decrease in the quantity of the alkali.

Z46 of the 21st February shows less alkali than Z50.

I would also treat a diabetic patient complaining of abdominal pain with hot water bottles and a soothing liniment, such as belladonna. The fact that this lady could not sign her name on the 1st March 3 times without resting tallies with my description of the prodromal symptoms of diabetic coma. This indicates decreasing physical strength.

If the lady's commode was brought nearer to her bed day by day, that would also indicate decreasing strength. Prodromal symptoms of coma which end in death may exist for a week, more or less.

The fact that her hands were exceedingly hot on the 1st March would indicate that she had fever, which is sometimes one of the prodromal symptoms of coma. The use of large quantities of purgatives tends to weaken a person generally. They won't make him more active or energetic.

Q. Taking the whole history of this lady's case as described by the witnesses, do you think that she on the 1st March was possessed of a clear mind and sufficiently unclouded judgment, and definite comprehension to follow, understand, and adopt a long and complicated will which took 30 or 35 minutes to read?

A. I do not think so.

*Cross-examined by Mr. Perera.*

I know Dr. Rockwood very well.

Q. Do you admit that Dr. Rockwood is a man of the highest eminence in your profession in this country?

A. So it is reported. I have not tested it.

Q. Has not Dr. Rockwood the largest practice in this country amongst medical practitioners?

A. So it is said, but I know nothing about it.

Q. Do you doubt what is said about his practice?

A. I have no reason to doubt it.

Q. Has he not a large European practice in Colombo and elsewhere?

A. I have made no inquiries about it, and therefore do not know.

Q. Do you as a medical man in Colombo say that you do not know that Dr. Rockwood has a large European practice?

A. Yes.

When Dr. Rockwood was the chief surgeon of the Colombo Hospital, I was an assistant of his for 2 years. I acted in that humble capacity for Dr. Thomasz also.

The permanent job that I have so far secured in Government service is that of Lecturer in Anatomy at the Medical College. My salary is Rs. 1,600 a year, which is of no consequence to me. I am a Jaffna Tamil. Dr. Rockwood is the representative of the Tamil community in the Legislative Council.

My age is 31 years.

Q. Are you only 31 years?

A. Yes.

I have a very limited practice in Colombo. I have been practically one year in practice. I cannot say how many patients I have had in my year's practice, as I have kept no record. I have seen about 1,000 general cases during that year. I have had no diabetic cases during that year's practice.

Q. Am I to understand then that you have not practised your hand on diabetic cases in Ceylon?

A. In 1898, when I was away on leave at Jaffna, I think I have seen and treated about 12 cases. I think the majority of them sur-

vived my treatment. "Kusmaul's Coma" was not present in any of them, nor any other kind of coma. Those were all cases of Jaffna Tamils in the North. I was there on leave for about 4 months. I went on leave when I was Dr. Rockwood's assistant. My time there was spent in treating diabetic cases. I went there because my father was ill. He was also a doctor, and I fell into his practice at once. He was not a qualified practitioner. My father was in charge of the Friend-in-Need Society's Hospital at Jaffna, and most of the cases I saw were patients who came there. Half of them were out-door patients, who used to come to the hospital with a bottle for medicine, and go away. I cannot remember any one of those patients now. I tested the urine of every one of those patients. The remaining 6 were my father's private patients, who were already under his treatment. None of them died at that time. None of them had coma or prodromal symptoms. I have seen a lot of cases of diabetes and of coma at Madras and also in England, when I was a student. Every medical student sees such cases. The degree of F. R. C. S. (London) does not require a knowledge of diabetes. It is at degree in surgery, but I was examined on diabetic gangrene for that degree.

Q. For that surgical degree was diabetes a special subject of examination?

A. Yes, because a candidate is expected to know all about surgery.

Q. Is diabetes a part of surgery?

A. It has a surgical aspect, and to know that you must study its surgical aspect.

Q. Was diabetes a special subject in the syllabus for your examination.

A. There was no syllabus, but we got only one examination paper and were examined for a week orally and practically.

During the whole of the examination I was only put one question connected with diabetes, namely, on diabetic gangrene and the amputations that may be necessary.

Dr. Rockwood holds the degree of M. R. C. P., London.

Q. Is that not the highest medical degree known to the British world?

A. That depends on how it is obtained.

My suggestion is that after 40 years they are exempted from certain parts of the examination, or sometimes from the whole.

Old age and experience are considered qualifications in our profession. The exemption I refer to is a concession to old age.

I don't admit that an M. R. C. P. (London) is the highest medical degree. The highest is an F. R. C. P. (London). An F. R. C. P. is elected from the M. R. C. P.'s.

Q. No further examination is needed for that election?

A. Yes, in this way, namely, he is tested by the work he has done.

Q. Are you aware that an M. R. C. P. who is elected an F. R. C. P. has to give a guarantee that he will not thereafter engage in surgical practice?

A. I am not aware of it.

Q. Are you aware that Dr. Rockwood on his last visit to England was offered that qualification if he gave up his surgical practice?

A. I am not aware.

I was consulted about this case before Mr. Norton came out. That was long before this trial commenced. I was consulted by the respondents' proctor. I think on behalf of Mr. R. S. Pieris. The latter has often come to my house in this connection.

I keep a diary for my patients, but I don't think I have entered in it the day on which I was first consulted. I was paid a lump sum for my fee in this case, and not on separate occasions. I got that lump sum about a week ago. The fee I got was Rs. 250. I believe Mr. Perera, the proctor, came with Mr. R. S. Pieris on the first day. At that date personally I knew nothing of Mrs. Jeronis Pieris' case—as to what

she was suffering from, or died of. I was then asked to express an opinion as to whether a patient who had died of diabetic coma was capable of making a will. I told them that I required further particulars before I could express any opinion. They gave me no particulars of the length and complexity of the will, of the medical treatment that she had been receiving, and also of the symptoms she was suffering from as far as they knew. Mr. Perera said that the will had been made, that it was a very long one, and contained many legacies. As regards the medical treatment he said he did not know, but that he would have to get the prescriptions. I wish to withdraw my statement that they gave me particulars of the medical treatment. I meant that I asked them for the particulars.

Q. What were the particulars of the symptoms they gave you?

A. My impression is that they told me that she was drowsy at times, and I believe they also said she had been vomiting.

On those particulars I gave no opinion, but told them to get the prescriptions and a full history of the case. They told me that Drs. Rockwood and Thomasz had been attending on her. I suggested to them that they might get the prescriptions from "Elscourt" or the chemists. They paid me no fee on that date, but told me it would be all right. On that day I only expected about a guinea for my fee. They paid it to me that day. I did not consider it my duty or worth my while to see Drs. Rockwood or Thomasz, my quondam superiors, on this matter before I gave an opinion.

I am on speaking terms with Dr. Rockwood. I last went to his house about 6 months ago, and last met him at a consultation about 2 months ago. I did not consult those doctors on this matter because I was consulted on one side, and I did not wish to go and see them.

By the other side I suppose you mean Harry Pieris.

Q. On which side did you think Dr. Rockwood was?

A. I did not wish to think, and I did not know.

Q. Did you ask Mr. Perera or R. S. Pieris on which side Dr. Rockwood was?

A. I think I did not, but I cannot swear. They told me that they intended to contest this will, on the ground that it was executed at a time when Mrs. Pieris was not of sound mind. They sought my professional opinion to assist them in their opposition. After that they saw me frequently on the subject, and I collected all the materials I considered necessary to formulate such an opinion. I read up all the medical literature available on the subject, and armed myself with Williamson, Soundby, Osler, etc. I expressed my opinion just before Mr. Norton arrived in Ceylon (10th May).

I expressed that opinion without seeing the prescriptions. I gave that opinion on the materials supplied to me either by Mr. Perera or R. S. Pieris. Those materials were given orally.

Q. What were those materials?

A. That she took ill on the 19th February, was confined to her bed, complained of severe pain, that the doctor had refused to give her a sleeping draught as it was bad for her, that she was vomiting, that she had not recognised certain people at times before the will was signed. They did not say that Richard Pieris was one of those who went unrecognised. They said that one of his children was. They also told me that Dr. Thomasz had been called in consultation. I also heard from other sources that Dr. Thomasz had expressed the opinion that she was in coma when he saw her on Tuesday.

I have no doubt I heard that from Dr. Sinnetauby. I must have heard it from Dr. Fernando. He is the brother of C. M.

Fernando who has been mentioned in this case. Dr. Fernando left for Europe on the 12th April last. I was also told that Dr. Rockwood had certified that she had died of diabetic coma. I now find that that statement was a mistake. It was on the above information alone that I gave my oral opinion, that Mrs. Pieris was incapable of making her will on Sunday, 1st March. I believe Dr. Thomasz to be an honourable man. I am friendly with him. I made no attempt to verify the information I received about him from Sinnetauby and Fernando.

After Mr. Norton's arrival I was engaged to coach him up in the medical literature on this subject. During the examination and cross examination of both the doctors in this case I was present in Court seated behind Mr. Norton and supplying him with information. The lump fee had not then arrived. I admit that Taylor's Medical Jurisprudence is a standard authority on the subject. I also admit there is honour in our profession, and a recognised etiquette.

(Counsel reads pages 37, 38, 39. Taylor, Vol. 1, Ed. 3.)

F. R. DIAS,

A. D. J.

It being 5 P. M., further hearing is adjourned for to-morrow.

F. R. DIAS,

15th June, 1903. A. D. J.

16th June, 1903.

Counsel and Proctors present as before.

1) Samuel Paul, sworn.

Cross-examination continued:—

Richard Pieris and his Proctor were at the time practically strangers to me. They had only about two consultations with me before the trial began. Their second visit may have been two or three days after their first one. It was on that occasion they gave me the information on which I based my opinion. I took no steps to verify the information they gave as it was not my duty to do so. I based

my opinion partly on information I had received from Drs. Sinnetauby and Fernando.

Dr. Fernando volunteered the information to me, and so did Sinnetauby.

Q. Was there any particular reason why they should have volunteered that information to you?

A. Yes, it was then being talked about, and the information was not given to me in particular.

Dr. Fernando gave the information at my house. There were several of us talking together. Dr. Sinnetauby was not then present. Dr. Fernando was on casual visit to me that day. He comes about once a week. The others present in my house then were Dr. Asserappa (my father-in-law) and Mr. D. B. Nicholas. The latter might have been there but I am not sure. I was no friend of the Pieris family,—not even an acquaintance. It was a matter of perfect indifference to me whether Mrs. Pieris died of diabetic coma or hydrophobia.

Q. Was there any particular reason why Dr. Fernando should have mentioned to you the nature of the disease from which Mrs. Pieris died?

A. Is it necessary to mention that to you? There are certain matters of professional etiquette to be observed, and if I give this information the professional reputation of a certain medical gentleman will be involved.

Q. Are you prepared to admit that Dr. Thomasz has been an impartial and chivalrous witness in this case, as stated by respondents' counsel?

A. I am not bound to sit in judgment on my fellow-practitioners.

Q. Do you consider Dr. Thomasz an honourable man?

A. I won't answer the question.

Q. What are your reasons for it?

A. The same reason that I don't want to sit in judgment on my professional brethren.

I was in Court when Dr. Thomasz gave his evidence. I heard him state, when he saw Mrs. Pieris, she was not in a comatose condition. I also heard him state that her mental condition was then intact. I have no opinion to offer as to whether that evidence is trustworthy or not. I have no opinion on the point, because I don't want to form one. I am prepared to admit that if what Dr. Thomasz said here with regard to what Dr. Fernando was stated to have reported is true, my information was false. In that event I am prepared to admit that my original opinion was based on false information.

I believe that Dr. Thomasz is an honourable man. So far as I am concerned I am prepared to admit Dr. Thomasz's word in any matter until he is proved to be lying.

I don't remember mentioning to R. S. Pieris or his Proctor the information I had received from Dr. Fernando. I won't swear that I did not. I can't fix the place where Dr. Sinnetaimby gave me the information, but I believe it was in the Medical College. Dr. Sinnetaimby is also a Jaffna Tamil. He mentioned the fact to me direct. So far as I am aware, he also is not a friend or acquaintance of the Pieris family. He mentioned this to me when I was discussing it with him before the trial began, but after the case was started. That was after I had given my original opinion. I was not quite accurate when I stated yesterday that my original opinion was formed on what I had heard from Drs. Sinnetaimby and Fernando. I told Sinnetaimby, before he mentioned the subject to me, that I had already given an opinion on the case. I told him generally the opinion I had expressed.

I had no particular reason to discuss this with him, but we usually discuss medical matters. Dr. Sinnetaimby is alive and well, and resides in Colombo. He gave me the same information that Dr. Fernando gave me.

At our second consultation I was told that I would be required as a witness. Mr. Perera

then told me that my consultation fees would be paid, and that I would be required to see Mr. Norton on his arrival. He also told me that I would be remunerated for my time spent over this case. I was not told when that remuneration was to come. I did not then know that this case would last so long a time. I was not told how my remuneration was to be calculated, but I was asked to send in my bill. I did not send in a bill for Rs. 250, but I asked for it verbally, and it was given. That was about a week ago. I heard Dr. Thomasz say that when he saw Mrs. Pieris on Tuesday evening her mind was intact, and that he had detected no prodromal symptoms of coma. If his opinion be correct, and if his evidence be true, I don't admit that the opinion I have given is incorrect as to Mrs. Pieris' mental condition on the Sunday. My simple reason is that Dr. Thomasz had not made as complete an examination of the lady as he should have done, and therefore his opinion was based on insufficient grounds.

(The question is repeated to witness.)

My opinion may be correct, because in a person who is admitted to have died of diabetic coma, it is quite possible for the patient to have had a fairly large quantity of organic acids in her blood before any prodromal symptoms set in, and in whom the presence of those acids in such amounts would act on the higher centres of the brain, and impair, to certain extent, the memory, will, and the power of judgment.

Q. Do you say, then, admitting Dr. Thomasz' opinion of Mrs. Pieris' mental condition to be correct, that your opinion is correct?

A. It may be correct. It may also be incorrect.

I admit that I am at present theorising. I admit that, as a general rule, the doctor who handles a case has a better opportunity of expressing an opinion than one who considers it from a distance.

The acids I have spoken of are diacetic acid, acetone, and B-oxybutyric acid. In my opinion the presence of 30 to 40 grammes of B-oxybutyric acid would impair the activity of the brain. A person with that quantity in her system may live for months, or she may die in a few days. If she lives for months her mind need not be entirely clouded, but it may be partially clouded, or not at all. The presence of this acid destroys the higher centres of the brain first of all.

Q. What is your authority for that statement?

A. Hale White's *Materia Medica*, page 90, beginning with "A drug." This is a book which treats on the effects of drugs on the system.

I am arguing from analogy. I also quote Herter, page 396; also the 20th Century Practice of Medicine, page 115. These are all the quotations I can cite for my statement that oxybutyric acid first affects the higher centres of the brain.

I admit we are all theorising in this case. I admit there is no evidence that Mrs. Pieris had any oxybutyric acid in her system.

In arriving at my opinion I have assumed that she had more than 30 to 40 grammes. That is the X quantity in my problem. If that X quantity does not exist, I admit that my theory and opinion are all wrong.

When I expressed my first opinion I had not the benefit of seeing the prescriptions.

It that Dr. Thomasz had the advantage in that respect, as he had seen the options when he visited the patient. I admit that he had the advantage of meeting the history of the case directly the mouth of the medical attendant, so by being able to see and feel the it personally.

I admit, therefore, that he was in a better on to express an opinion than I was.

What is your authority for saying that pry diabetic coma is also known as Kusmaull's Diabetic Coma?

A. (a) Williamson's "Diabetes Mellitus" page 280. The symptoms just recorded are those met with in the most common variety of diabetic coma, Kusmaull's Air Hunger.

(b) Soundby's "Lectures on Urinary Diseases," page 338. In the second group we have Kusmaull's typical complex of symptoms.

I am afraid I cannot quote my third authority to-day, as I have not the book here.

I say that the most common variety of diabetic coma is that which is known as Kusmaull's Air Hunger.

Q. Do you understand the difference between the expressions ordinary diabetic coma and the most common variety of diabetic coma?

A. Yes. They are one and the same.

I can see no difference in the English meaning of the two expressions. Prodromal symptoms of Kusmaull's coma may last from three to about eight days. There is one recorded case where they only lasted 24 hours, and the patient then died. I have seen one case of this kind at King's College, and have no further experience of prodromal symptoms of Kusmaull's coma, except the cases I had seen as a medical student.

I am only speaking from book-knowledge. I don't profess to be an expert on diabetic coma. Constipation is a common form of complaint in ordinary diabetes. Rheumatic pains sometimes occur in diabetic cases; also rheumatic muscular pains may occur.

I admit Soundby is a high authority.

(Counsel reads from page 126 of Soundby's "Lectures on Diabetes," edition 1891.)

I admit that Soundby is correct in his statement that rheumatic muscular pains are very common in diabetes. I listened to Dr. Rockwood's evidence in this case, but cannot say that I followed it carefully.

Q. Do you then mean to say that you did not follow it carefully?

A. I may or may not have.

Q. But have you ventured to express an opinion based on what you may or may not have followed?

A. I ventured to express an opinion partly on Dr. Rockwood's evidence, which I followed.

To some extent I may have been influenced by Dr. Rockwood's evidence, but I do not say that I have been so influenced.

Q. Then you did not base your opinion partly on his evidence?

A. Partly I did.

The only part of his evidence on which I based my opinion was about the chicken broth.

Q. Did you then discard from your mind the rest of Dr. Rockwood's evidence in arriving at your opinion?

A. He gave me no definite information. Yes, I did discard it from my mind.

I only stuck to his chicken broth story because it was so extraordinary. What was extraordinary was the effects of the chicken broth he described, namely, the nausea which required a constant and repeated dose of five minims of hydrocyanic acid. I know of people in the best of health who have a particular aversion for particular foods, and if such food is administered to them they may get nausea. If it be true that Mrs. Pieris had a particular aversion for chicken broth in good health, she would get nausea if it was given to her when sick. What surprised me was the quantity of the hydrocyanic acid administered, and the slightness of the nausea. In my opinion that treatment was bad. The opinion I formed on that evidence was that she must have had severe nausea lasting for two days. As far as I am concerned that opinion involves a disbelief of Dr. Rockwood's evidence on the point. In expressing my opinion in this case I disbelieved Dr. Rockwood to that extent.

Q. And you are the high-souled F. R. C. S., England, who will not sit in judgment on your fellow-practitioners?

A. Yes.

Q. And you formed that opinion on the capacity of a man of Dr. Rockwood's eminence merely because you thought that the treatment was not in accordance with the disease?

A. Yes.

Q. But yet you were proud to sit at the feet of that Gamaliel?

A. No.

Q. Although you were his assistant?

A. Yes.

I know nothing personally of this chicken broth. So far as I know there is no evidence in the case to contradict the evidence of Dr. Rockwood about the chicken broth. Having concluded that Dr. Rockwood was telling what was not true, I put that nausea down as one of the prodromal symptoms of coma.

In forming an opinion on this case, I have taken for granted that Mrs. Pieris had prodromal symptoms of diabetic coma for a long time, say for about a week. The prodromal symptoms I have assumed were, marked constipation, abdominal pains, nausea, probably vomiting, increased pulse rate, altered respiration, drowsiness, from which she recovered now and then, ending in coma.

Q. What is the evidence on which you say that she had marked constipation?

A. The prescriptions.

I heard Dr. Rockwood say that he did not as a fact find any constipation present, and also that he prescribed not for constipation but to keep the bowels clear. In my opinion I disbelieved him on that point too.

Q. That is the second instance in which you say that Dr. Rockwood has been lying?

A. If you say so.

Q. Do you say so?

A. I don't.

I have heard him say that those prescriptions were not given for constipation and that he did not treat her for constipation. In my opinion they were meant for constipation.

tion, but I don't say that Dr. Rockwood meant them for constipation.

Q. Did you in forming your opinion accept Dr. Rockwood's statement that his prescriptions were not meant for constipation?

A. I decline to answer the question. I formed my opinion on the prescriptions, and had nothing to do with Dr. Rockwood's statement.

Q. Why do you decline to answer?

A. Because Dr. Rockwood may have given those prescriptions according to the light he had on the action of those drugs.

Q. Then do you admit that he prescribed those drugs not for constipation, but to keep the bowels clear?

A. He may have done so.

Q. If he did so, then the theory you have built up on your assumptions must fall to the ground?

A. Not necessarily.

I have said already that I inferred the presence of constipation from the nature of the prescriptions, and that is my opinion still. If in point of fact the prescriptions were not given for constipation my theory falls to the ground.

I heard Dr. Rockwood's evidence on the patient's abdominal pains, and pains on the sides and knees. I also heard him say that he concluded that they were rheumatic pains.

On the authority of Soundby I admit that these rheumatic pains are present in cases of ordinary diabetes. In spite of Dr. Rockwood, I conclude that these pains were more than rheumatic pains, and that they were prodromal symptoms of impending coma.

My reason for that conclusion is Dr. Rockwood's careful and systematic avoidance of opium and morphia during the treatment of the case. I heard him say that he avoided the opium treatment in order not to derange the stomach, and not because of any prodromal symptoms of coma. If his statement of

fact be true, my conclusion is fallacious. My conclusion does not involve a disbelief of Dr. Rockwood's statement of fact on that point.

Q. Will you explain yourself?

A. I don't agree with his opinion, for the reason that opium and morphia are two drugs which are admitted to be treated without discomfort by diabetic patients, and morphia can be given in a form so as not to derange the stomach.

I also concluded that there was probable vomiting in this case from the large quantity of hydrocyanic acid used. I have heard no evidence in the case to prove affirmatively that there was vomiting. I heard Dr. Rockwood state on his oath that he did not prescribe this for vomiting but for nausea, and that, as a fact, there was no vomiting. If his statement of fact be true, then I admit my conclusion drawn from the prescriptions is fallacious. I am not prepared to state at all that his statement was false.

I concluded there was an increased pulse rate on Dr. Rockwood's evidence. He said that he noticed it when he met Dr. Thomasz on the Tuesday evening. That was the evening before her death.

I admit that I was inaccurate when earlier in the day I said that I had only taken into account Dr. Rockwood's statement about the chicken broth. I could not then recall everything. Increased pulse rate is not by itself a prodromal symptom of coma. The prodromal symptom is a feeble rapid pulse.

Q. In this case is there any evidence that the pulse was feeble?

A. I have no recollection.

My authority for saying that Mrs. Pieris had altered respiration is the evidence of Dr. Thomasz. I heard his evidence on the point, namely, that it was explained to be due to her walking from the commode to her bed, and that it eased off before he left, and that he did not consider it a prodromal symptom.

Q. Do you, who were not there and did not see the patient, take upon yourself to say that his opinion was wrong?



A. Yes, in conjunction with the other circumstances.

Q. What was that conjunction?

A. The other prodromal symptoms I have described and the prescriptions. The only disease in which persons don't die of coma are those diseases in which the heart fails.

All others die of coma. Altered respiration, which is a prodromal symptom, is an accelerated respiration, or one in which the respirations are deeper, and of a sighing or panting character.

Dr. Thomasz said that Mrs. Pieris' breathing was hard. I have no authority for saying that hard breathing is a prodromal symptom, and I have not said so. I have based my statement that Mrs. Pieris had altered respiration on Dr. Thomasz' evidence only.

I admit that Dr. Thomasz only spoke of hard breathing, and not of altered respiration.

I say that hard breathing may be a prodromal symptom.

Q. Can you show any authority which says that hard breathing may be a prodromal symptom?

A. My answer is that hard breathing is included in altered respiration, not normal. People with a cold in the head may have hard breathing, and also people who snore in bed.

According to Dr. Soundby mere altered respiration is not a prodromal symptom of coma, but the inspiration and expiration become prolonged, and the rhythm is quickened, air enters freely into the chest, and the lips and cheeks retain their former colour.

My interpretation of Dr. Thomasz' evidence on the hard breathing he found in this case answers the description given by Soundby and Williamson, when coupled with the state of the heart and lungs, as he described it. I heard Dr. Thomasz, who sounded the lady himself, state that in his opinion the hard breathing that he noticed

did not answer the description of prodromal respiration. I don't say that Dr. Thomasz' opinion was wrong, but when taken in conjunction with the other symptoms I think that my opinion is right.

If my opinion is right, Dr. Thomasz is wrong. I can't be certain of my opinion. The symptom of drowsiness from which the patient recovered now and then I learnt from R. S. Pieris. He told me that on his second visit. That was before the trial began. Coma is the terminal part of Kusmaul's variety of diabetic coma. I mentioned the fact that the patient died of coma when giving my catalogue of prodromal symptoms, because coma is the final stage of Kusmaul's variety of coma.

That is not the only variety which ends in coma. All varieties of diabetic coma end in coma.

All diseases end in coma where the heart does not fail.

(Counsel reads page 194 of Dr. Soundby's article on Diabetes in the Medical Annual of 1888.)

I admit the correctness of the statement here that "The doctrine of Acetonæmia has not been able to stand criticism, its supporters having failed to show that it is capable of producing similar symptoms." This is also supported by modern authority. The earlier statements recorded on this page have been modified by later researches. Quain's Dictionary of Medicine is a standard authority. (Counsel reads page 382 of that book.) I admit the description given here of diabetic coma to be quite correct. "In by far the largest number of cases the onset of the symptoms is more or less sudden. The patient complains of pain in the abdomen, with vomiting, restlessness, and great languor. Drowsiness follows, and this gradually develops into coma. The coma deepens and death takes place from 12 to 48 hours after the onset."

*Re-examined.*—Dr. Quain is not a specialist in diabetes, like Soundby or Williamson or Herter.

(Counsel reads page 396 of Herter's Lectures.)

I look upon the casual relationship of acid intoxication to coma as an established fact.

I agree with that opinion.

I also agree with his statement on the next page that "Oxybutyric acid is the chief organic acid in the diabetic intoxication."

I am not responsible for the facts that were tendered to me, and on which I gave my opinion. I base my opinion on the presence of many of the prodromal symptoms that were described to me.

A person's mind may be intact for some purposes, but not for others.

I have not come here to contradict Dr. Rockwood's facts.

If some of my opinions necessarily involve the rejection of some of Dr. Rockwood's facts, I still adhere to my opinions. It is not a matter of rejoicing to me to have to reject some of his facts.

Recalling all I have seen, and read, and heard in this Court about this case, I cannot conscientiously state that Dr. Rockwood's treatment of Mrs. Pieris was intended for any other purpose than to fend off impending coma.

F. R. DIAS,

A. D. J.

Z39.

"Greylands," Horton Place,

Colombo, 4-5-03.

Dear Sir,

An application was made by me on behalf of my clients in the Pieris Will case to the Manager of Messrs. Neil S. Campbell & Co., for copies of your prescriptions prepared by them for the late Mrs. Pieris between the 19th February, 1903, and 4th March, 1903, but he has informed me that he regrets that

he cannot comply with my request inasmuch as you have written to him not to give me the same.

I am advised that, according to the rules of the medical profession, no secrecy is to be observed in regard to prescriptions after they had left the hands of the doctor—in fact, they are not his property and ought to be open to the inspection of any person interested.

If you agree with me, will you kindly withdraw your objection so that the prescriptions may be available to my client to be used if necessary as evidentiary material in the case. Counsel in the case are of opinion that their having the prescriptions in time will help a great way towards elucidating the truth in the case.

Yours faithfully,

The Hon'ble Dr. Rockwood.

Z40.

Colombo, 4th May, 1903.

From Dr. Rockwood.

Dear Sir,

I haven't the time to enter fully into the case. To be short. Supposing you consulted me for clap. Would you mind the prescriptions I gave you for it being seen by others?

W. G. ROCKWOOD.

Reply please.

P. S. —I am no partisan.

Z41.

"Greylands," Horton Place,

Colombo, 5-5-03.

Dear Sir,

With reference to your letter of the 4th, it is not likely that I will ever have the necessity for consulting you for clap, or itch, for a matter of that. However, should I ever have the misfortune to do so, I would certainly have no objection to your prescrip-

tions being seen by others. Now that I have answered your question will you kindly answer mine?

Yours faithfully,

742.

"Greylands," Horton Place,  
Colombo, 8th May, 1903.

Dear Sir,

Referring to your letter of the 6th instant, I have to inform you that I do not want, and I never intended, that my individual case should guide your actions. Being advised that it would be unprofessional in a medical man to interfere with the discretion of the dispenser as to showing anybody prescriptions that have once left his (the doctor's) hands, I enquired of you, on behalf of my clients, whether you would, in case you were of the same opinion yourself, withdraw your objection. You replied to me with a question based on the contingency of my consulting you for the loathsome disease which you were pleased to refer to by the vulgar term "clap." I should have thought there was no necessity for a personal reference like that. However, it was clear that if you intended anything by the question you intended to act on my reply, but when the reply is given you tell me that my individual case cannot guide your actions. Why then did you put the question? I regret to observe that I cannot help thinking that my original enquiry is being evaded, and it would perhaps be fruitless to carry on this correspondence further. Unless, therefore, I hear from you to the contrary, I shall assume that you are of opinion that generally speaking it is not unprofessional for a medical man to prevent the dispenser from using, as he likes, the prescriptions issued to him, and that you refuse to withdraw your objection to the prescriptions being shown to me or copies thereof being given to me by Messrs. Neil S. Campbell & Co.

Z43.

Cinnamon Gardens,  
Colombo, April 28th, 1903.

Neil S. Campbell & Co.

Mrs. Jeronis Pieris.

R. Liq. Ammon. Cit. 1½ oz.  
Sod. Salicylat. ½ Drm.  
Caffein. Citrat. gr. 18.  
Aq. ad. 6 oz.  
ft. mist.

Sig.—1/8 part every 4 hours,  
or R. Pil. Hydrarg. gr. 4.  
Pil. Coloc. Co. gr. 15.  
Ext. Bellad. gr. 1.  
Et. div. in pil. (4)

Sa.—one every night,  
or R. Mist Sennae Co. 1½ oz.  
Sa.—To be taken in the morning.

(Signed) W. G. R.

Z44.

20-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R. Magnes. Sulph. 1 oz.  
Potass. Bicarb. 1 Drm.  
Glycerine. 2 Drms.  
Tinct. Lavand. Co. 1½ Drms.  
Aqua. Ml. 4 oz.  
ft. mist.

Sig.—1/4th part every morning.

(Signed) W. G. R.

Z45.

20-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R.  
Pil. Cyn. Sulph. gr. 5.  
Miste 6.

Sig.—(one morning and noon.

(Signed) W. G. R.

Z46.

21-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R. Sod. Bicarb. 1 Drm.  
Spt. Ann. Arom. 1 Drm.  
Spt. Chlorof. 2 Drm.  
Tinct. Gentian Co. 4 Drm.  
Aq. ad. 6 oz.  
ft. mist.

Sig.—1/4th part every two hours.

(Signed) W. G. R.

Z47.

22-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R.  
Lin. Aconiti ½ oz.  
Lin. Belladon. 1 oz.  
Lin Saponis 4½ oz.  
ft. Liniment

Sig.—The liniment to be rubbed in twice a day.  
(Signed) W. G. R.

Z48.

22-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R.  
Trional 20 grs.  
ft. pulv.  
Sig.—to night in milk.  
R. Bishop effery. Cit. of Peperazine. 1 bot.

(Signed) W. G. R.

Z49.

23-2-03.

28th April, 1903.

For Mrs. Jeronis Pieris.

Ry. Quin. Sulph.  
ft. pil. Mitte. 6.  
Sig.—One at 7 and 11. a m.

Z50.

21-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R. Sod. Bicarb. 2 Drms.  
Potass. Bicarb. 2 Drms.  
Spt. Ment Pip. 160 Drops.  
Tinct. Card. Co. 3 Drms.  
Aq. chlorof. ad. 8 oz.  
ft. mist.

Sig.—1/8th part every two hours.

Z51.

21-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R. Ext. Bellad. Vid. 1 oz.  
Glycerine ½ oz.  
Sig.—As directed.

(Signed) W. G. R.

Z52.

25-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R. Salol. gr. 5.  
ft. pulv. Mitte 8.  
Sig.—One thrice daily.

(Signed) W. G. R.

Z53.

27-2-03.

April 28th, 1903.

For Mrs. Jeronis Pieris.

R. Sod. Bicarb. 1½ Drms.  
Ac. Hydrocyan. Dil. ½ Drm.  
Spt. Chlorof. 2 Drms.  
Glycerine 2 Drms.  
Aq. ad. 6 oz.  
ft. mist.

Sig.—1/6th part every two hours,  
et R. Lin. Aconiti 2 oz.  
Lin. Belladon. 2 oz.

Lin. Chlorof. 2 oz.  
M. ft. Liniment.  
Sig.—use as directed.  
et R. Magnes. Sulph. 2 oz.  
Mist. Sennae Co. ad 8 oz.  
ft. mist.

Sig.—1/8 part every morning.

Signed W. G. R.

Z 54.

1-3-03

April 28, 1903.

For Mrs. Jeronis Pieris.

R. Sod. Bicarb. gr. 130.  
Sod. Sulph. 2 oz.  
Tinct. Card. Co. 2 Drms.  
Aq. M. Pip. ad 8 oz.  
ft. mist.

Sig.—1 part, twice or thrice daily.

Signed W. G. R.

Z 55.

1-3-03.

23th April, 1903.

For Mrs. Jeronis Pieris.

R. Pil. Hydrarg. gr. 2  
Pil. Coloc. Co. gr. 17.  
Ext. Bellad. gr. 1.  
et div. in pil.  
Sig.—one at bed time.

Signed W. G. R.

Z 56.

2-3-03.

April 28th

For Mrs. Jeronis Pieris.

Cough Lozenges. (Dr. Rockwood's)  
Sig.—As directed.

Signed W. G. R.