

## Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

L'Institut a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- Coloured covers /  
Couverture de couleur
- Covers damaged /  
Couverture endommagée
- Covers restored and/or laminated /  
Couverture restaurée et/ou pelliculée
- Cover title missing /  
Le titre de couverture manque
- Coloured maps /  
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) /  
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations /  
Planches et/ou illustrations en couleur
- Bound with other material /  
Relié avec d'autres documents
- Only edition available /  
Seule édition disponible
- Tight binding may cause shadows or distortion  
along interior margin / La reliure serrée peut  
causer de l'ombre ou de la distorsion le long de la  
marge intérieure.
- Additional comments /  
Commentaires supplémentaires:

Continuous pagination.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated /  
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies /  
Qualité inégale de l'impression
- Includes supplementary materials /  
Comprend du matériel supplémentaire
- Blank leaves added during restorations may  
appear within the text. Whenever possible, these  
have been omitted from scanning / Il se peut que  
certaines pages blanches ajoutées lors d'une  
restauration apparaissent dans le texte, mais,  
lorsque cela était possible, ces pages n'ont pas  
été numérisées.

THE  
MONTREAL MEDICAL JOURNAL.

---

---

VOL. XXVII.

FEBRUARY, 1898.

No. 2

---

---

Original Communications.

---

THE SYNTHESIS OF ALKALOIDS.

BY

C. G. L. WOLF, B.A., M.D.,

Demonstrator of Practical Chemistry, McGill University.

The synthetical production of alkaloids has been a task which numberless chemists have set themselves to perform since the discovery of morphine, ninety years ago, and although in the matter of actual success in comparison with the amount of work that has been done, not much has been accomplished, yet the progress which has been made in the last two decades has been so great, that it is by no means without the range of probability that in the next ten years, many of those alkaloids which are to-day only to be obtained from plants will be the products of the laboratory.

Problems, such as these, which are of almost insurmountable complexity have not only the purely scientific aspect to induce work upon them, but also the enormous commercial importance which is attached to them, and one has only to remember the indigo synthesis of A. v. Bacyer from a nitro cinnamic acid to understand how a research undertaken to solve a question of constitution will revolutionize an industry which has, for centuries almost, been the exclusive producer of a necessary domestic compound.

In the first part of this century large numbers of plants were investigated and as a result a more than an equivalent number of alkaloids was found. It was only when the observers came to investigate the constitution, that they realised the enormous difficulties with which they had to contend.

The first step which threw some light on the subject was their behaviour on distillation; many gave pyridin or a compound allied to it, and it was hence believed that they were basic bodies which

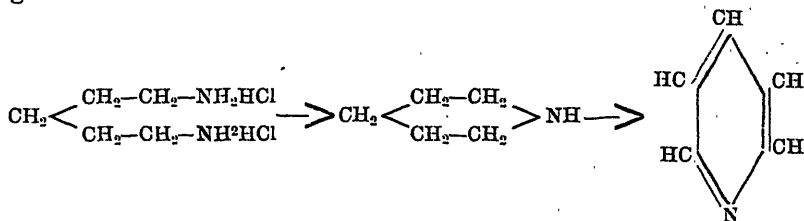
contained a pyridin nucleus. Such a definition would shut out such very important compounds as caffein and theobromin, and it is perhaps best, simply to view them as plant derivatives containing nitrogen, in which the nitrogen is contained in a cyclic atom complex.

As pyridin is the compound from which most of the alkaloids are derived, it may be well to speak of it somewhat in detail.

It consists, according to Körner, whose view has been generally accepted, of a benzene ring in which a methin group has been replaced by a trivalent nitrogen atom.

Piperidin  $C_6 H_{11} N$  bears a close relation to pyridin and following up the researches of Cahours, Hofmann, by the action of bromine on the former compound, converted it into a substance having the empirical formula,  $C_6 H_8 NO Br_2$ , which he held to be a brominated pyridin derivative. That there was a close connection between these two substances was shown by the oxidation of piperidin to pyridin by means of sulphuric acid.

The full synthesis of piperidin was accomplished by Ladenburg by the dry distillation of penta menthylendiamin hydrochloride. The relation between these three substances may be shown by the following scheme :



The next synthesis which was effected was that of coniin, the alkaloids of conium maculatum. It was of interest also because it belongs to the somewhat restricted group of alkaloids which contain no oxygen, and Liebig, Gerhardt, Kekulé and Hofmann submitted it to close investigation without elucidating its constitution. It was Hofmann who, in 1881, proved that it was a compound closely related to piperidin but his conclusions, drawn from experiments with methyl and dimethyl piperidin as to its exact constitution, were unfounded.

Koenigs, after the conclusion of Hofmann's investigation came to the view that coniin must be a propyl piperidin. This view found a convincing proof in the work of Hofmann, who, by the distillation of coniin with zinc dust, discovered a base conyriin, which was not as expected, a reduction, but an oxidation product of coniin, and which stood in the same relation to it that pyridin does to piperidin, and

that it was a homologue of pyridin was shown by its yielding on further oxidation and pyridin carboxylic acid.

From these considerations Ladenburg was induced to take up the synthesis of coniin. The difficulties which he encountered, owing to the uncertainty of a change not occurring in the propyl group which he introduced, cannot be taken up in this place. He was, however, successful in his endeavours by condensing  $\alpha$  picolin with paraldehyde to äthyl pyridin. This unsaturated compound on reduction gave inactive, normal  $\alpha$  propyl pyridin. On combination of this base with dextro tartaric acid he was enabled to separate the inactive compound into dextro and levorotatory modifications, the former of which proved in every way to be identical with the natural alkaloid. Some years later Engler condensed calcium picolinate with calcium propionate and obtained after the well-known reaction  $\alpha$  äthyl pyridyl keton and subsequent reduction of this to  $\alpha$  äthyl piperyl alkin, which, on continuous reduction, yielded coniin. Thus has coniin been produced in two ways.

Next in order were three less important alkaloids synthesised whose production was not of interest from a technical point of view, but of great scientific worth. These were trigonellin, the alkaloid of trigonella, fœnum græcum by Hantzsch, and arekaidin, and arekolin from the areca nut by Jahns.

Piperin, the original alkaloid of pepper, was partially synthesised at first by Rügheimer in 1882, by the condensation of piperinyl chloride with piperidin. The piperinic acid from which the acid chloride was obtained was not made until Fittig had, by extremely beautiful work, shown its constitution, and afterwards Ladenburg and Scholtz effected its synthesis from proto-catechuic aldehyde.

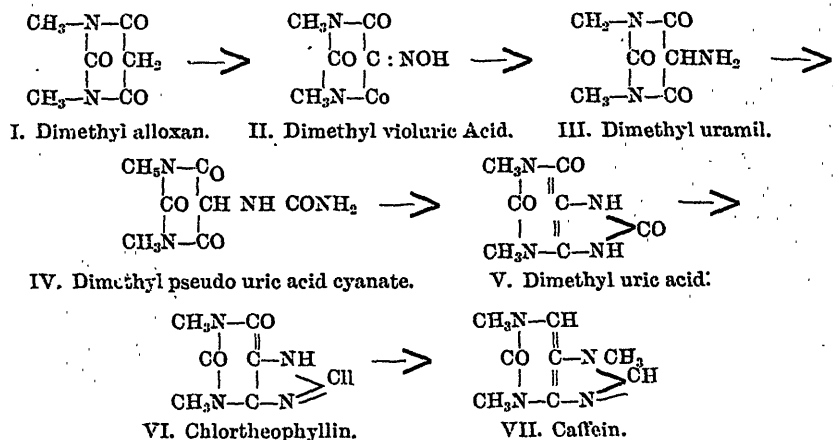
The next two compounds are of more than theoretical interest, as one plays a large technical rôle and both are of interest from their relation to some important physiological processes. These are caffein and theophyllin. These do not, as before mentioned, belong to the pyridin group of alkaloids, but their history is closely bound up with uric acid and urea. Although the acid was discovered by Scheele so long ago as 1776, its connection with caffein was not established till Emil Fischer began his wonderful researches on the uric acid series, which have yielded splendid results.

The decomposition products of caffein belong to a series of compounds which contain the grouping  $\text{C} \begin{array}{c} \text{N}-\text{C} \\ \diagup \quad \diagdown \\ \text{N}-\text{C} \end{array} \text{C}$  and which can well be supposed to be formed by the union of urea with dibasic acids. Caffein on oxidation with chlorine yields dimethyl alloxan, which, on



reagent. Now theophyllin has a methyl group less than caffeine, and, as both on oxidation, yield dimethyl alloxan  $\text{CO} \begin{matrix} \text{N}(\text{CH}_3)\text{-CO} \\ \text{N}(\text{CH}_3)\text{-CO} \end{matrix} \text{CO}$  it is clear that the third methyl group does not belong to the alloxan ring; so that theophyllin must be represented by formula VI., in which chlorine is replaced by a methyl group.

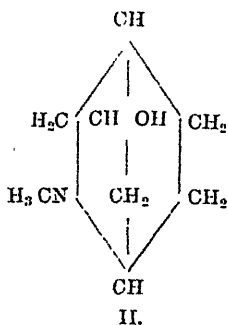
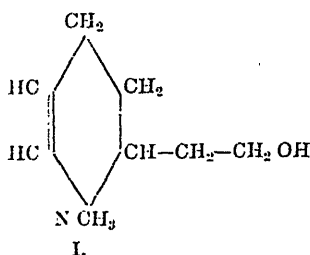
Theophyllin can be changed to caffeine by the action of methyl iodid on its silver salt. This is one of the prettiest examples of a compound being synthesised by purely scientific considerations. The following formulæ show the relation between the different compounds which led up to it :



#### PARTIAL SYNTHESIS.

*Atropin*—The synthesis of atropin has not been a complete one, yet much successful work has been done in this direction since Liebig determined that its formula was  $\text{C}_{17}\text{H}_{23}\text{NO}_3$ . Ladenburg, after Kraut and Lossen had split it into two of its components, tropin and atropaic acid, combined these two to form the alkaloid. Investigating the latter product, he found it had the formula  $\text{C}_6\text{H}_5\text{CH} \begin{matrix} \text{CH}_3 \text{ OH} \\ < \\ \text{CO} \text{ OH} \end{matrix}$  and determined it thus to be  $\alpha$  phenyl hydracrylic acid, and the first synthesis of this acid, starting from acetophenon, was due to these observers working in conjunction with Rügheimer. They treated phenyl methyl ketone with phosphorus penta chloride, obtaining the ketone chloride, this treated with alcohol and potassium cyanide the compound  $\text{C}_6\text{H}_5\text{-C} \begin{matrix} \text{OC}_2\text{H}_5 \\ < \\ \text{OH} \\ \text{CN} \end{matrix}$  which on saponification after the well-known method with baryta water yields a saturated acid, atrolactic acid, the äthyl ester of which, with strong sulphuric acid, splits off

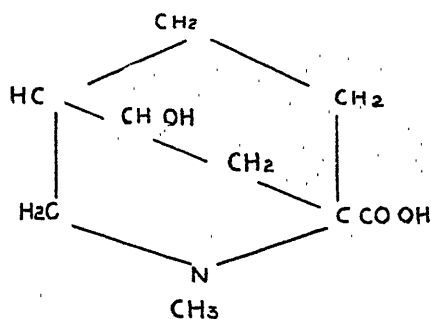
äthyl alcohol, giving the unsaturated atropaic acid. By treatment of this with hypochlorous acid, the chlorinated acid is obtained, which on treatment with nascent hydrogen gives tropaic acid. The acid part of atropin having been synthesised, Ladenburg, on the ground of some cleavage products of tropin, has suggested the formula I, which has been changed by Merling, with the consent of many chemists, to formula II.



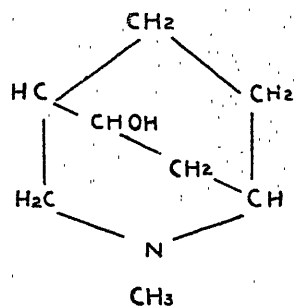
Although neither of these compounds has as yet been completely synthesised, yet, tropin has been built up again from one of its decomposition products which, according to Merling's formula, must be dihydro benzyl dimethylamin. This latter is a derivation of tropidin methyl ammonium hydrate, which is, in its turn, derived from tropin by dehydration. Now Merling showed that the monocyclic compound, the  $\alpha$  methyl tropin, combined with two molecules of hydrochloric acid to hydrochlor  $\alpha$  methyl tropin hydrochloride, which, with sodium hydrate, gave the base hydrochlor  $\alpha$  methyl tropidin. This changed to tropidin methyl ammonium chloride, which broke up by distillation into tropidin and methyl chloride. The transformation of tropidin into tropin was previously accomplished by Ladenburg.

The next alkaloid, which is of great importance medically, is cocain. This compound bears a close relation structurally with the foregoing as Wilstätter showed, and also with the alkaloid  $\alpha$  tropin found in Javanese coca leaves.

Cocain, on saponification, splits up into ecgonin benzoic acid and methyl alcohol. From this decomposition one may infer that ecgonin contains an acid and a hydroxyl group, of which the latter one is benzoylated and the former methylated in cocain. Ecgonin is very similar to tropin, and Einhorn has been able from the former body to prepare the latter. By dehydration ecgonin yields an hydro ecgonin which gives off carbon dioxide air on suitable treatment yielding tropidin. The relation between tropin and ecgonin, according to the newer formulæ, may be easily seen by comparing the two formulæ.



Eggonin.

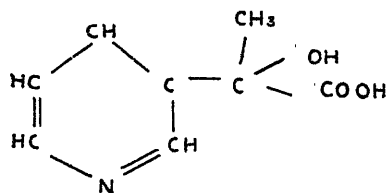
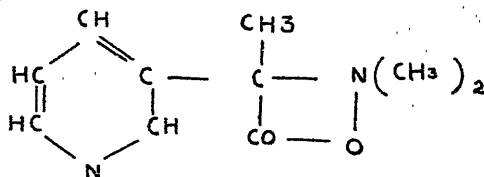


Tropin.

Eggonin on treatment with benzoic anhydride and methyl iodide gives cocaine. Taking into account the previous work on tropin one may say that the synthesis of cocaine is far advanced towards completion.

Pilocarpin has also engrossed the attention of many observers. According to Hardy and Calmels it consists of a pyridin nucleus combined with a betain group in the  $\beta$  position.

Pilocarpin, on boiling with water, breaks up into trimethylamin and an acid of the formula  $C_8H_9NO_2$ . The barium salt of this acid on distillation yields  $C_7H_9NO$ , which on oxidation gives  $\beta$  pyridyl methyl keton hydrate, which can be prepared synthetically. The first named of these compounds is from these considerations a  $\beta$  pyridyl,  $\alpha$  lactic acid, and from the splitting of pilocarpin into this acid and trimethylamin it may be assumed to have the formula

 $\beta$  pyridyl  $\alpha$  lactic acid.

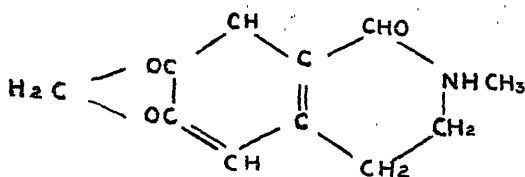
Pilocarpin.

Hardy and Calmels endeavoured to synthesise pilocarpin from its decomposition products. By treating  $\beta$  pyridyl  $\alpha$  lactic acid with phosphorus dibromide and heating the bromo acid so obtained with dimethylamin, pilocarpidin was obtained. This when heated in methyl alcohol solution with methyl iodide and potash gave pilocarpinic acid. This on oxidation and dehydration with permanganate of silver yields pilocarpin. According to Herzig and Meyer pilocarpin contains but one group attached to nitrogen, but owing to the extremely unsuitable state in which the various compounds are obtained, it is too early



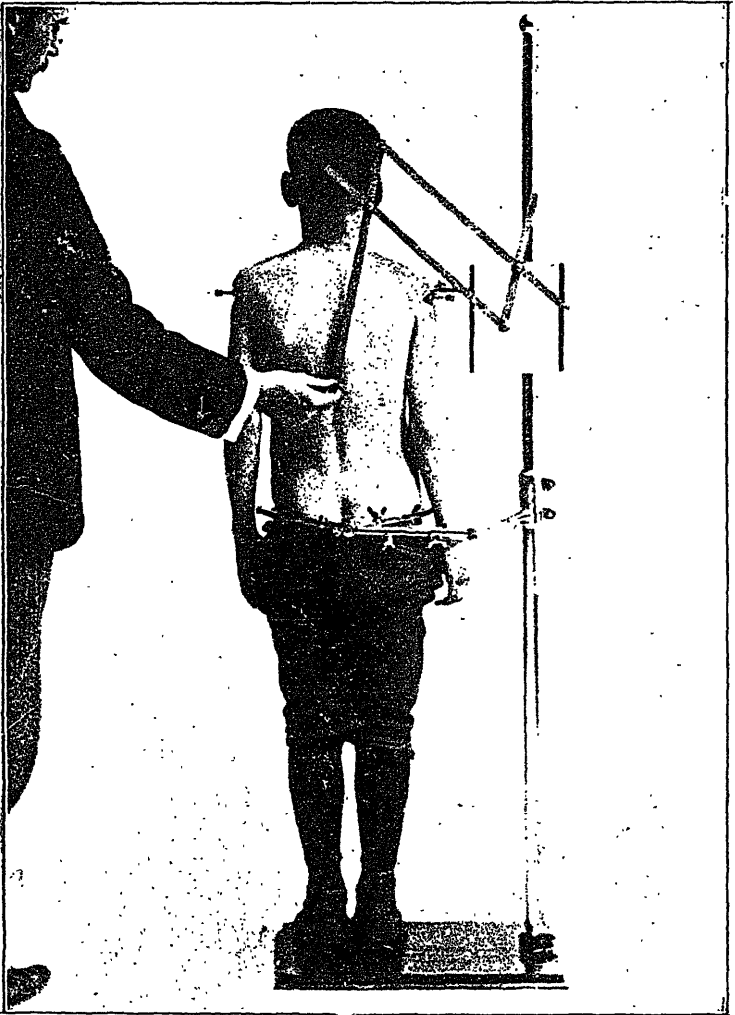
to form a definite opinion as to which is the precise constitutional formula.

The work of Schmidt and Freund has done much to clear up the constitution of hydrastin, the alkaloid of *hydrastis canadensis*, and we may be said now to have a fully formed idea of its constitution. The work which led up to the views of its formula would require a somewhat lengthy statement, which cannot be given here. One of its decomposition products (hydrastinin) has been shown to have the formula



This has been prepared synthetically, but the transformation into hydrastin has not been effected. Neither has the formation of opianic acid been completed, so that these two steps are lacking to the preparation of the original alkaloid itself.

I may here mention that much of the data given here are to be found in the admirable work of Scholtz "Die Kunstliche Aufbau der Alkalöide," and those wishing to pursue the subject further will find in it references to the original papers, which contain fuller accounts of the work done in this interesting field.



# THE ACCURATE MEASUREMENT OF SPINAL CURVATURES, WITH THE DESCRIPTION OF A NEW INSTRUMENT FOR THE PURPOSE.

BY

R. TAIT MCKENZIE, M.D.

Demonstrator of Anatomy, Medical Examiner and Instructor in Gymnastics.  
McGill University, Montreal.

Almost the first difficulty that confronts the surgeon in dealing with a case of scoliosis is the obtaining of definite date on which to base a diagnosis and prognosis, a fixed starting point from which he can follow its progress; a standard by which he can test his course of treatment with a reasonable degree of accuracy.

Mere opinion as to the exact condition present in a patient is notoriously unscientific and inaccurate, especially in this disease, and a few figures in black and white, or an accurate chart, are worth pages of surmise or supposition.

In the measurement of curvatures we must obtain a record of the general asymmetry of the figure, as well as of the details of the deformity. One wants some quick and accurate way of getting at the difference in height of the acromia, of the points of the scapulae, some graphic record of the deviation of the spinous processes from the straight line, of the differences in outline and level of the hips and iliac crests. And, again, the record will not be complete unless the rotation of the vertebrae is shown, both in the dorsal and lumbar regions. In angular curvature the nature and extent of the kyphosis must be displayed to give a clinical picture of the case.

Many methods have been used to get some of these results, and some plans have been used to get many of them, but I have not yet seen any practical scheme by which a complete picture such as I have just described has been obtained.

I need not enter into a detailed description of all the ways by which this subject has been attacked, but, among them, photography has certainly been the most popular. Perhaps the most fatal objections to its use as a routine practice are its expense, both in time and money, and its liability to mislead the observer by indistinctness, or other imperfections in the process of lighting the figure, or the developing of the plates.

Many plans have been described in which plumb lines are dropped

and deviations from them noted at different levels. The shoulder levels have been measured from the ground, and various other isolated facts have been taken. These methods are all imperfect and cumbersome, and, above all, lack that uniformity so necessary if such observations are to be of permanent value.

For recording the rotation which is totally neglected by the above-mentioned plans, Mr. Bernard Roth describes a method which is both rapid and accurate. The complete description of it is found in his text-book on the subject. Briefly, it is by moulding a strip of pure tin to the back at the desired level and making a tracing from this on paper.

Mary Putman Jacobi elaborates this method by using a hinged tape and encircling the whole chest or abdomen. This tape is removed, placed on a table, and plaster is run in, forming an accurate cross-section of the body at the level selected. This, although accurate, is imperfect, and its inconvenience in private practice will at once suggest itself.

Dr. Geo. W. Fitz, in *Boston Medical and Surgical Journal*, recommends, in measurements of the spine, to spot with a black-flesh pencil, the spinous processes from the seventh cervical vertebra down to the sacrum, together with the posterior iliac spines; to place the patient behind a screen consisting of a rectangular frame with threads strung vertically and horizontally, cutting the entire surface in inch squares to measure the amount of rotation of the spine; he uses the method described by Mr. Roth.

In the *Cyclopedia of Diseases of Children*, Dr. R. E. Roth describes a small instrument for recording rotation, which merits description.

A long pointer, with a pencil attached, moves freely by a swivel joint on a stand placed on the back of the patient, who bends well forward. Attached to the stand is a curved sheet of paper on which the pencil marks the movement of the pointer, the tracing being of course reversed; by varying the proportion of the two sections of the pointer the tracing can be made to any scale.

J. A. Weegel describes a graphic method of showing a cross-section (natural size) of the prone figure. This is open to the serious objection that the scapulæ and attached muscles mask to a great extent all sections taken in the upper dorsal region, an objection surmounted by having the patient stooping well forward.

Raymond Sainton took up this subject very fully in the *Revue d'Orthopedie* some years ago and described a hinged collar or belt of steel, in which the patient is encircled. Set in it at regular intervals are pointers like wheel spokes. These are shoved in till they touch the

skin, clamped, and the collar removed. A tracing from these pointers will show the body in cross-section. He also figures an adaptation of the pantograph for taking full-sized tracings of the spinous processes.

Many instruments have been devised, all more or less complicated and expensive, for taking such tracings. The most elaborate I have seen, that of Schulthess, though accurate, gives a tracing life size, and too big for convenience. It is not adapted to record rotation. Its size and expense would make its general introduction impossible. Beehrings uses a glass plate on which the silhouette is traced, but I could multiply example on example till one is tempted to cry that of making many devices there is no end, and yet one must agree with the author in a recent work on Orthopœdic Surgery when he says that "An inexpensive and efficient scoliosiameter is yet to be invented."

An efficient instrument should record in inches or centimeters the difference in levels, of the shoulders, of the points of the scapulæ, and of the iliac crests. It should measure the deviation of the spinous processes at all levels. It should show the outline of the hips and shoulders that differences may be noted, and, lastly, it should measure the amount and show the nature of rotation when present.

In this instrument an attempt has been made to fulfil these conditions. It consists of a fixed horizontal iron stand, into which a rigid upright rod is screwed firmly. To this rod two arms are attached by collars that can be moved up and down or clamped by thumb screws. The lower arm passes behind the patient and clamps the hips, preventing any sidewise movement. The upper arm passes in front of the patient and fixes the shoulders. To the collar of the upper arm is attached, by a hinge, a plate, to which a pantograph is screwed, set so as to make a tracing reduced to one in four. The paper, which is stretched over this plate and held by clips behind, is ruled in eighth inch squares. Hence, a line passing vertically through eight squares or one inch, would represent a distance of four inches covered by the pointer. It is more accurate and convenient to use a reversible pointer, a short arm for the spine and scapulæ, and a longer for the outline of the shoulders and hips.

To take a tracing the spinous processes are first marked with a flesh pencil and the patient is placed upon the stand. The hips are first clamped at the level of the trochanters, the shoulder arm is then moved up or down, adjusted and clamped, after the patient has settled into the habitual position. The spine is followed by the pointer, the gluteal cleft and the points of the scapulæ noted, and then an outline of the shoulders and hips is rapidly traced.

In taking cross-sections to show the rotation, the patient stands bent over, and the end of the pantograph easily follows the outline of the back at any desired level.

The amount of the difference in levels, or the deviation, is obtained by following the horizontal or vertical lines and counting the squares on the paper, for you have an accurate map drawn to scale of the back and its bony points.

The plates will illustrate better than words can describe the forms of certain typical cases from my case book. Fig. I. is from a young man, the difference at the acromia being  $2\frac{1}{2}$  inches, taken when standing with heels together, and in his habitual position.

In Fig. II. the cause of the curvature is shown in the difference of height of the iliac crests and tilting of the pelvis, due in this case to shortening of the left leg. The cross-section taken at the level of the third lumbar vertebra shows a projection of the right side and a corresponding depression of the left.

Fig. III. shows a very extreme deformity, due to infantile paralysis. The projection of the left hip is very noticeable.

Fig. IV. shows two tracings plotted on the same chart, the iliac crests being taken as the starting points. It will be seen from this how improvement under treatment can be clearly demonstrated.

If we could select some standard set of measurements instead of continuing in the present haphazard way, every man having a system which may serve for himself, but is a sealed book to his neighbor, there would be a chance of comparing our work one with another, and arriving at results in the treatment of scoliosis that would be at once definite, intelligible and scientific.

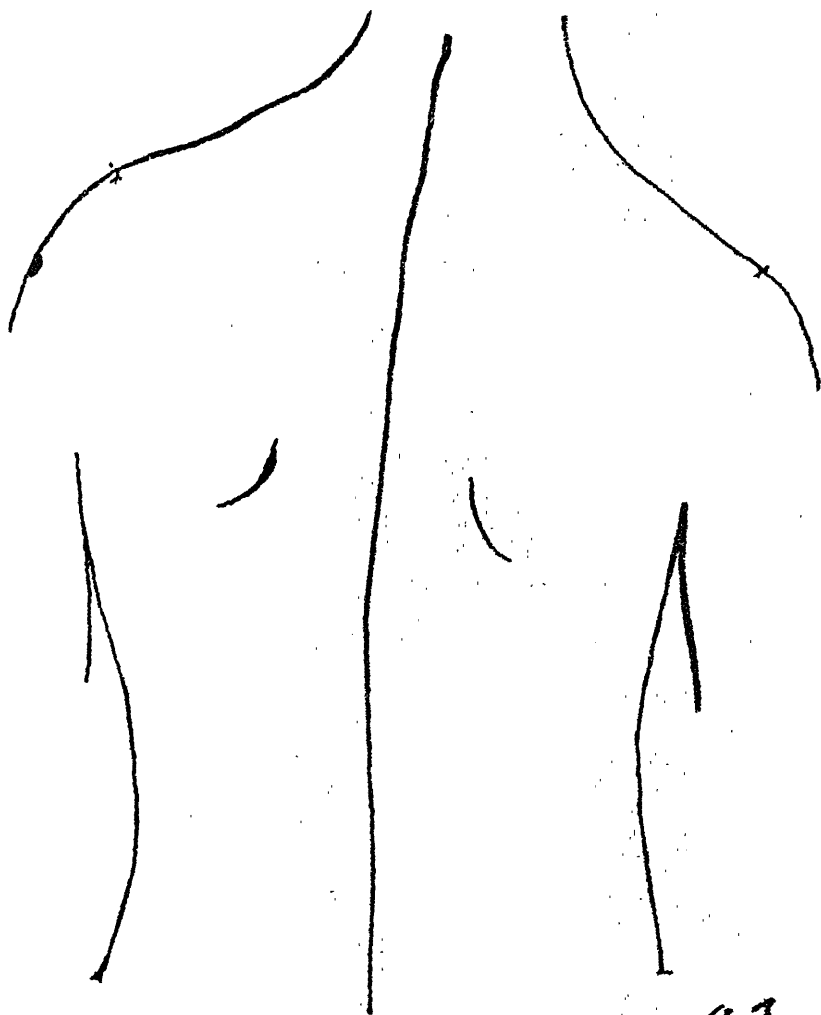
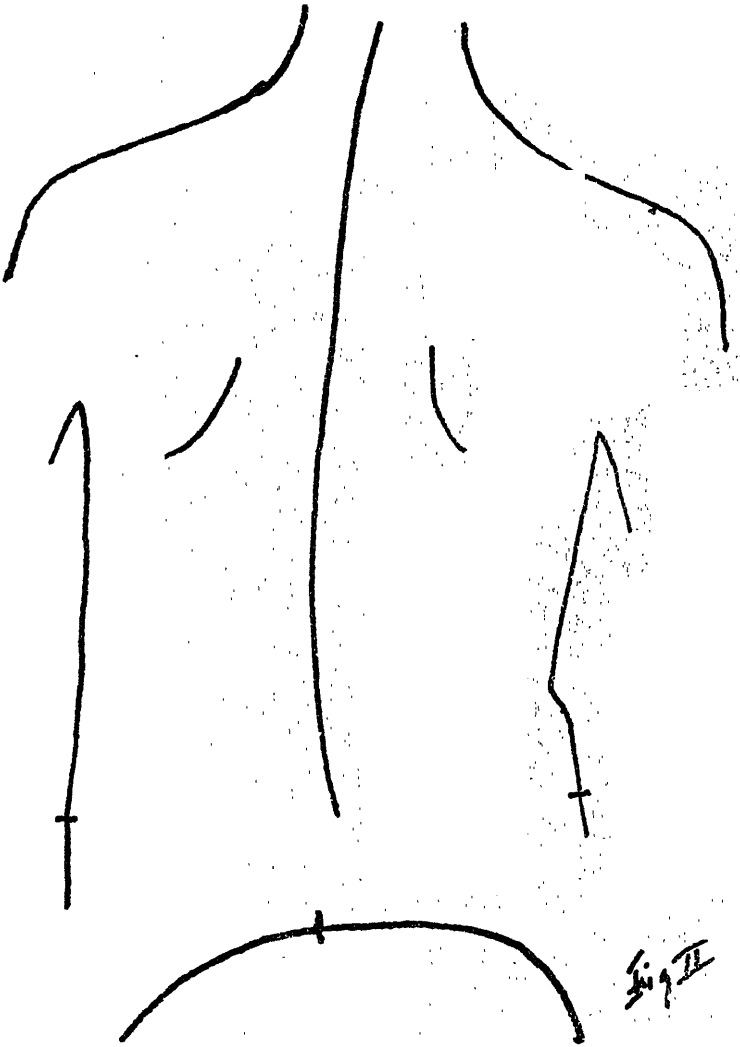


Fig 1





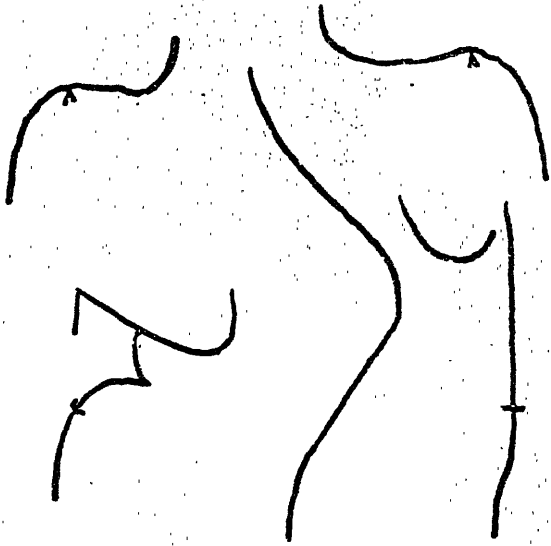


Fig III

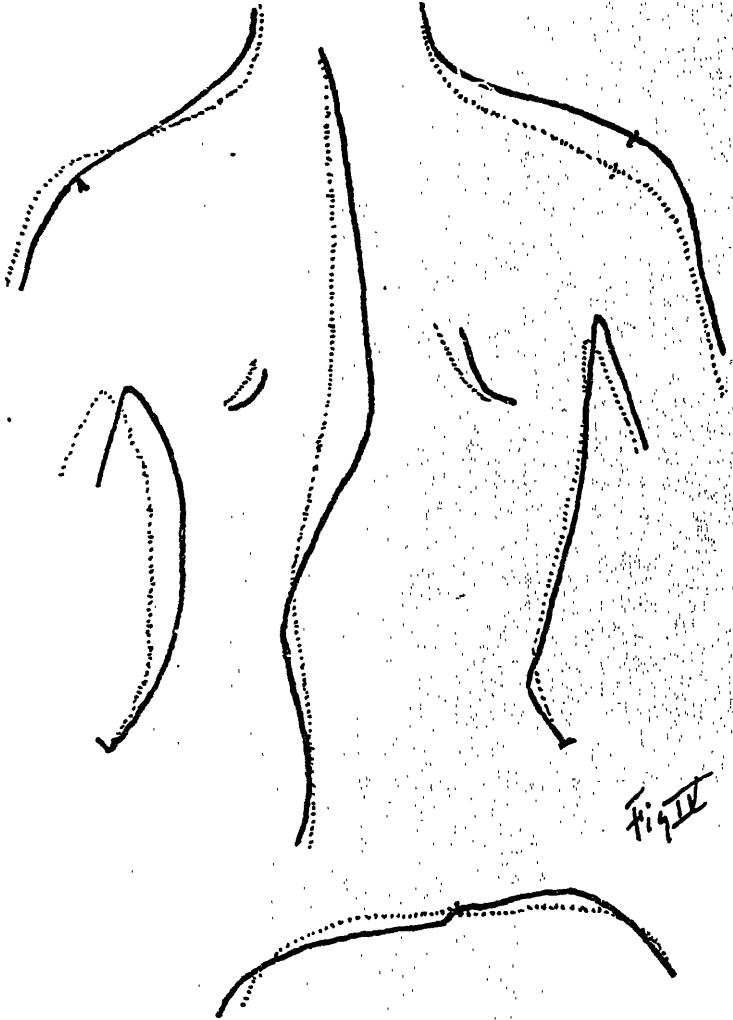


Fig IV

# DISCUSSION ON THE TREATMENT OF SYPHILIS.

BY

W. WHITLA, M.D.,

Professor of Materia Medica and Therapeutics, Queen's College, Belfast; Physician  
Belfast Royal Hospital.

The treatment of syphilis is a wide subject and I feel honoured at being called upon to open a discussion on it. Whether this New World was the original home of syphilis or not we need not pause to debate, but the marked advances made in the study of syphilis of late years on the Continent of America make the present time and place most desirable for discussing the therapeutics of this interesting malady. At the start, permit me to say that I come before you not with new light, but for new light and knowledge, the aim of the officers of the Section being to elicit the views and experiences of the numerous observers here and in the United States. My duty will therefore chiefly lie in the selection of some of the most interesting and important debatable points in the therapy of the disease. Fortunately it is easy to indicate the main line upon which our discussion is to run, since there are but two drugs which need be considered—mercury and iodides. In the Old World there is a small and steadily diminishing number of men who adhere to the idea of a non-mercurial treatment of syphilis, but though I know nothing of the presence of such a minority in Canada or the States, I should be surprised to hear of it, because I believe such a view would be at variance with the untrammelled progress in spirit which is the characteristic of the great Canadian branch of our profession.

My own professional opinion was formed in a school where my two chief teachers were non-mercurialists, and I had opportunities of observing the results of expectant methods alongside those of surgeons who administered mercury, and I need not tell you that I have never treated a case of syphilis since without employing the drug. It may be taken as proven that mercury has a specific or curative action upon syphilis; we may thus limit our attention to the following points:—

1. How mercury and the iodides are supposed to act.
2. When should mercurial treatment be started? Especially should it be given in the primary stage?
3. The various methods for its routine administration and its dosage, and the length of time necessary for mercurial treatment.

#### 4. The treatment of tertiary symptoms and congenital syphilis.

Notwithstanding the marvellous strides which pharmacology has recently made in elucidating the mode of action of many drugs it has almost thrown no light upon the therapeutics of the so-called alteratives. These agents when given in ordinary therapeutic doses to perfectly healthy individuals often produce no appreciable action, but when similar doses are administered in certain diseased conditions the disease disappears without leaving any clue as to the method by which the drug cured. This is frequently observed with mercury, arsenic, gold, iodides and colchicum. Addison and Cohnheim demonstrated that mercury had the power of arresting the suppurative process in the frog's mesentery by its paralysing effect upon the protoplasm of the cells.

The lethal action of the soluble salts of mercury upon the minute forms of life has been long demonstrated, and this will almost certainly prove the key to the explanation of the curative action of the drug in the secondary stage of syphilis. That syphilis is caused by a micro-organism seems certain, and it will be an easy matter to demonstrate the action of mercurials upon it as soon as it can be isolated and cultivated. Whether rubbed into the skin, administered by the mouth, or other route, mercury and its preparations are absorbed and find their way into the blood. In ordinary inunction it is clear from the observations of Binz that the ointment is not absorbed through the uninjured epidermis or cutis vera, but that it finds its way in through the hair-follicles and sebaceous follicles, and through the orifices of the sweat glands. In a few days the globules become coated with oxide *in situ* and soon disappear into the blood after solution by the chloride of sodium, fatty acids, albumen, and glandular secretion, probably in the form of an albuminate kept in solution by the natural chloride of sodium. In a similar way the bichloride and other soluble salts are absorbed from the alimentary canal and insoluble salts like calomel are probably rendered soluble by the formation of an albuminate which is itself kept in solution by the chloride of sodium. Pure calomel dusted over the conjunctiva is soon found in the urine as a soluble salt of mercury (Kammerer).

It is thus obvious that in whatever form the metal is administered it finally enters the blood and there meets the syphilitic poison which it destroys. I think it was Mr. Hutchinson who first spoke of mercury as a vital antidote to syphilis. The term is at all events used by some as implying that the metal is a poison to the living syphilitic organism in contradistinction to its action upon the chemical poison probably secreted by the parasite. There is another aspect of the

question, which though it appears to be obvious is singularly overlooked, viz., that syphilis is a true vital antidote to the poison—mercury. In this statement will be found the key to the difficulty of dosage, duration of treatment, and many other puzzling questions. I believe that so long as the living virus of syphilis remains in the blood and tissues of the victims of this disease mercury will spend its poisonous force upon the virus without fear of injury to the patient. As soon as the living antidote to the mercurial poison is exhausted or destroyed, then, and not till then, will mercury begin to act deleteriously.

If this be accepted as true or probable a working hypothesis is at once obtained for the dosage. It is well known that small doses of mercury have been found to exert a tonic action upon the non-syphilitic patient, and that marked increase of weight sometimes follows its administration, but it is almost certain that even these small doses if prolonged will cause general deterioration of health. Doses which the syphilitic patient can tolerate without the slightest inconvenience would soon cause serious injury to the perfectly healthy subject. This is especially evident in congenital syphilis, where one sees puny and apparently dying children thrive and grow fat and ruddy upon an amount of the metal which would probably cause death or serious injury to perfectly healthy infants. Mercury acts also in syphilis upon the morbid cell growth which is characteristic of the disease. We have a demonstration of this when the ointment is gently rubbed over a patch of the secondary eruption, or more strikingly when calomel is dusted over condylomatous growths. The specific cell growth is rapidly and painlessly destroyed.

The metal is eliminated in all the excretions of the body, and Oberländer found that the kidneys continue to throw it out for more than six months after the last dose has been administered.

The action of the iodides is not so simple. It is generally taken for granted that as iodides of sodium and potassium are not germicides, that therefore they do not act upon the living virus of syphilis. The generally accepted view is that the iodides act solely upon the cell growths which are so characteristic of the disease. Thus Brunton believes that the iodides act upon the tissues and not on the poison. He likens the syphilitic process to the growth of the caterpillar in the oakgall, and he believes that large doses of the iodide act upon gummatous tumours, which he regards as analogous to the galls, and they spare the poison or caterpillar, which then goes on to form other gummatous deposits. This is possibly an analogy to which exception may be taken, since it is probable that there is no caterpillar in the tertiary

stage. Most authorities state that iodides have no visible effect upon the syphilitic germ in the early stage of the disease, but that in the late secondary period they markedly assist the action of mercury in destroying the cell growths; in the tertiary stage their influence is most striking and sometimes may be styled marvellous, but it appears highly probable that their influence is not permanent unless supplemented by mercurials. It is not, however, safe to assume that the iodides exert no germicidal action in syphilis, since Binz has demonstrated that they are readily decomposed by living protoplasm, which under conditions identical with those in the living body immediately sets iodine free in the tissues, and he strongly holds that when we see tumours or swellings cured by the internal administration of iodide, we are justified in assuming that in them the liberation of iodine (which is easily demonstrated when carbonic acid, protoplasm, and iodides are brought together) is continually going on as long as the iodide circulates in the blood and that the free iodine gradually destroys the cell growths or the micro-organisms which produce the tumours.

Passing over numerous interesting speculations we come to the second point for discussion—when should treatment be commenced? Thanks to the brilliant labours of Taylor, we need not pause to discuss the value of excision of the chancre, he has demonstrated the folly of such a procedure.

Hutchinson and those who follow him strongly advocate the administration of mercury as soon as the state of the sore permits of diagnosis. He affirms that if this be done, "the patient will usually entirely escape both sore throat and eruption," and "that it is thus perfectly possible to suppress syphilis and to prevent the occurrence of any of the humoral group of symptoms." The conclusions of Hutchinson are obviously open to certain fallacies, but he has evidently discounted these, or allowed for them, and in the numerous hosts of cases treated upon this plan by careful observers there appears to be strong presumptive evidence that many of the cases in which no secondary symptom appeared were cases of genuine syphilitic chancre which would have exhibited secondary symptoms had the antidote been delayed in its exhibition.

Perhaps no single point in the problem of syphilis has been so hotly debated as this so-called abortive plan of treatment. The term is an unfortunate one, and has led to misconceptions. Thus theoretically speaking, it might be proved that it afforded the most successful and satisfactory method of treating syphilis, though it might be impossible to prove in a single case that real abortion of the disease had occurred.

Mr. Hutchinson has been equally unfortunate in his description of the method as regards dosage, which he styles as "the continuous use of small doses over long periods," but this will be referred to presently. I have satisfied myself in many cases of the absolute truth and accuracy of Mr. Hutchinson's results, and in a few I believed that secondary symptoms were entirely prevented. One arrives at such a conclusion by observing the faint rash which appears at a late period if the mercurial be suspended, and the absence of rash in those cases where the drug was not stopped but used continuously for a long time. Taylor and Kaposi and others are, upon the other hand, satisfied that no advantage or possible benefit to the patient is lost by withholding mercury until the onset of the second stage. These authorities affirm that his syphilis will be more orderly and more amenable to treatment, and that there will be less difficulty in the mind of the physician and of the patient in pursuing a vigorous mercurial course. It cannot be denied that it is often impossible to get patients to submit to prolonged mercurial treatment in the absence of evidence that they are really suffering from genuine syphilis. This is a very serious objection to the so-called abortive plan. The physician, after say four months' mercurial treatment, may pause and say to himself possibly, "I am giving mercury to a patient who, though he has had a hard, indurated sore, may not have any syphilis." This is a still more serious objection, and proves that mercurial treatment should not be actively commenced till the induration is such as absolutely satisfies the attendant that he is dealing with the primary stage of a true syphilis.

We may look forward with hope that the experiences of the eminent observers who are expected to join in this discussion will assist us in coming to a conclusion upon two distinct points. First, is it possible to abort syphilis by giving mercury in the primary stage? Second, if this be possible, is the plan one that can be used as a routine practice in treating syphilis. We may pass on and consider how the use of mercury will best meet the needs of the syphilitic patient who comes before us with the skin eruption just out. All will agree that now no delay in the exhibition of the remedy should take place, but there is the widest difference of opinion about the best way to administer the drug. Two plans are recognised: (1) The continuous method, and (2) the interrupted. The first method is that advocated by Mr. Hutchinson and pursued as part of his abortive plan. He described it in his last article as that of the continuous use of small doses over long periods. It is called by others the tonic treatment.

It will be observed at the start that his dosage is hardly what he

describes himself, and certainly not what many of his opponents designate it as—the method of using infinitesimal doses of mercury.

The preparation which he selects is hydrargyrum cum creta, and he administers it in the pilular form with opium, and he gives 1 gr. of the mercurial preparation four, five, six or seven times a day, regardless of meals, his object avowedly being to get in as much mercury as possible without causing salivation or diarrhoea. In the course of twelve months' treatment the patient would have swallowed 2,500 grs. grey powder, or over 800 grs. of mercury, if the maximal doses of the preparation were adhered to. When this treatment has been commenced during the primary stage and continued for nine or twelve months, Mr. Hutchinson, as before stated, affirms that the syphilis may be wholly suppressed.

I think you will agree with me that, omitting the consideration of the period at which this treatment is commenced, the dosage is almost as orthodox as the most ardent mercurialist can desire. Practically, it only differs from the interrupted plan, not in giving so much less mercury but in giving it for a longer period without rest or suspension. My own experience has satisfied me that many patients cannot stand a larger dosage, and that most will be unable to bear this amount for more than six or nine months. When we study the reports and writings of syphilographers one cannot fail to be struck with the numerous points at which these so-called rival treatments fuse and become indistinguishable.

A strictly tonic mercurial treatment is useless. If mercury be given in such small doses as would improve the tone of a healthy man, this dosage will be futile when administered to a syphilitic subject, and the long-continued treatment of syphilis by minute doses of mercury must be condemned. In practice the distinctions between the continuous and interrupted plans break down. One physician starts to treat a case as an ardent admirer of the continuous plan; he endeavours to get in as much mercury as possible without injury to his patient, but he will often find that he has misjudged his patient's powers, and he must stop at the end of four or six months, and give him a rest. Another starts with the view of saturating the system with the metal, and finds just when he intended to stop and interrupt the treatment that some suspicious symptom warrants a continuance for several months, and the case becomes one treated almost continuously,

My own limited experience is decidedly in favour of making the treatment as continuous as possible for at least nine months after the appearance of the eruption. I believe this is less likely to lead to



relapses and early tertiary symptoms than a four or six months' course of greater severity. The great problem in the successful treatment of syphilis is the dosage. This it is impossible to know without trying, and it is well to have no very firm preconceived notion upon the number of grains, or even the exact mercurial preparation to be adhered to. The antidote must be given not by arithmetical calculation but by sound common sense. It must be given in proportion to the amount and activity of the virus present and with due consideration to peculiarities exhibited by the patient, the one aim of the medical man being to get as much mercury introduced into the patient's blood as possible without producing any injury to his tissues or organs.

The conditions of the gums is generally regarded as the test for the dosage. It is a most fallacious test; the same holds good for the bowel. Very large amounts of mercury are administered at Aix without the slightest effect upon the mouth, because I believe that nowhere is such scrupulous attention paid to the state of the gums. This detail of putting the teeth, gums, and mouth into a healthy state prior to treatment, and maintaining them in this state all through the mercurial course is of the most vital consequence to success. I know of no other detail to be compared with it in importance. Vegetable astringents, like rhatanny, and catechu alternating with alum solutions, and carbolic washes, should be most religiously employed during the months of treatment.

As a matter of fact, I have scarcely ever used opium with the mercurial. Should the bowel and stomach rebel, which is exceedingly seldom, I give them a rest and resort to the skin.

The syphilitic phenomena, that is, the rash, patches on the tonsils, condylomata, iritis, etc., afford a better indication for dosage than the mouth. If these remain uninfluenced or not sufficiently influenced, mercury may still be pushed fearlessly. As long as there is abundance of syphilitic virus, the drug may be pushed and the secondary manifestations are a rough estimate of the amount and activity of this virus.

But what indication has the physician for further dosing when these disappear and the mouth keeps healthy? Here, permit me to say, is a vital point. I believe body-weight affords the best of all guides. There is little danger (perhaps none) of doing any injury to a patient by mercury as long as he keeps gaining in weight and is not markedly anæmic. For nearly twenty years I have made careful weighings every fourteen days or more of all syphilitic patients, and soon one comes to know much of what is going on in the battle-ground between the virus and the antidote by placing the patient in the balance.

In a severe case of syphilis, especially in the late secondary stage, a weight chart is as essential as is the temperature chart in a case of grave typhoid. When weight falls without obvious cause the metal must be suspended (iodides come in here with benefit). Often a fall in the body-weight is the first sign that the syphilitic virus has been completely destroyed. This may be seen in the abortive plan of treatment, and may be taken as indicating that the mercury is beginning to cause deterioration of the blood, and increased metabolism having no longer its syphilitic antidote present to neutralise its action. These weighings, when possible, should be made upon an accurate machine in the physician's study.

The length of the course should be determined, in my opinion, not by any preconceived rule. I hesitate to state this (almost in the phraseology of a law) in the presence of so many distinguished members of the profession, many of whom, I have no doubt, have had a larger experience in the treatment of this affection than myself.

My experience as a teacher has shown me how dangerous it is, in a combination of circumstances like those under consideration, to place before the student mind the cut-and-dry formula that syphilis should be treated by any special mercurial salt in any fixed doses, for any given number of months under any hard-and-fast continuous or interrupted plan. We all know how prone such formulæ are to become lifelong rules of procedure. Each case should be treated upon its own merits, and the plan intelligently modified, and, above all, the duration of the course decided by the results, no two cases, perhaps, running exactly alike. After, say, nine months of the continuous method, if it has not been found necessary to interrupt it before, the patient may have a complete rest for two or three months, should no trace of the disease be present. It is a good plan, then, to give a mild mercurial course, combined with iodides every alternate six weeks for nine months more, and finally, after a rest of two or three months, a three months' course of fair doses of the iodide should complete a two years' course in all.

Sir William Gowers, in his Lettsonian Lectures, recommends that every syphilitic subject for at least five years after the date of his last symptoms should have a three weeks' course of treatment twice every year, taking for that time 20 or 30 grs. of iodide a day, and he asks, if this practice were generally adopted, is it not reasonable to anticipate that grave lesions would be much more rare ?

Time does not permit me to dwell upon the great importance of a wisely regulated diet, with hot or Turkish baths, occasional changes

to the seaside, with the necessary restrictions regarding alcohol and tobacco, and the avoidance of every conceivable depressing agent.

It will now be necessary to glance at the different methods of administering mercury by the mouth and the skin. The method of injections will be dwelt upon by a later speaker. A favourite mercurial preparation on the Continent, and as far as I can judge in America, is a substance which is much less used in England, that is, the proto-iodide or green iodide or mercurous iodide, prepared by rubbing iodine and mercury together. Owing to its liability to decompose it has been rejected from the German and *British Pharmacopœia*. Taylor begins with three daily doses of  $\frac{1}{4}$  to  $\frac{1}{2}$  gr. This dosage in a few days is increased to 1 gr. three times a day, which is to be kept up for six months. He states that it is rarely necessary to give more than 3 grs. of the protoiodide in a day, and that most cases will do with about 2 grs., or even less, and he condemns the combination of opium with the drug as unnecessary and mischievous.

Milner states that of all the forms of syphilis the vesicular rash is the most difficult to deal with. It is most frequently seen in fair-haired patients, chiefly women, and in those who drink large quantities of wine. For such the green iodide should always be selected. He urges the importance of the difficulty in treating barmaid's syphilis and of checking the disease in actors, commercial travellers, billiard markers, and the class of syphilitic patients who sits up late at nights. For all these the green iodide should be preferred to every other preparation of mercury. It appears to be the most active form for administering mercury in the early stages, but it is doubtful if it be so valuable or active later on. My own feeling is that it is not so manageable as the grey powder, but this is a matter of practice or of experience. Grey powder, that is mercury rubbed up with two parts of chalk, as already stated, is Mr. Hutchinson's choice. Though he recommends up to 6 or 7 grs. daily, I believe 3 or 4 grs. daily for nine or twelve months will meet all the requirements of the great bulk of cases.

My own practice is to administer calomel beginning with two Plummer's pills, 5 grs. each daily. Such a dose will contain 1 gr. calomel, 1 gr. sulphurated antimony, and 2 grs. guaiacum resin. The bowels are seldom influenced, and ptyalism is rare when the mouth is well cared for. After a week or ten days 3 pills may be given daily, and I believe it will be found an advantage to change the calomel to corrosive sublimate after about three months, and to combine iodides with it. As soon as the calomel influences the bowels I give the grey powder.

Blue pill does not seem to be a favourite amongst specialists; it appears to be more difficult to manage and more liable to cause salivation and diarrhoea when pushed for any length of time. It is the preparation which may be selected for a preliminary smart attack upon the disease for a few weeks, and in those cases not seeking early advice. When signs of ptyalism do show themselves under such circumstances I think they can be more quickly suppressed or checked than if produced by any other mercurial, even when another mercurial preparation in moderate doses is administered immediately upon stopping the blue pill.

There is much to be said against chopping and changing the mercurial during a course of treatment, but there is also something to be said in favour of it. I believe one can often get in more of the metal in this way. Suppose under any preparation signs of ptyalism suddenly show themselves without being able to offer a working hypothesis, I think it will be found that a change of the preparation often will more effectually restrain this than if the drug be stopped altogether. Excellent results are obtainable by using the red iodide, the tannate, and the bichloride.

It seems certain that the statement of Victor de Méric is correct, that is, that it does not matter in what form mercury be given, provided that it be kept up for one, one and a half, or two years at least. All practitioners complain of the great difficulty of getting patients to adhere to the treatment for a sufficient period. It cannot be denied that this difficulty is greatly increased by the habit of some physicians selecting a particular form for their mercurial preparation which they adhere to rigidly, and the patient wearies of the pill, powder, or mixture, and throws it aside, whilst he might be tempted to continue longer had the same dose and mercurial preparation been given in an altered pharmaceutical form.

The necessity of keeping the patient in a condition which will enable him to pursue his ordinary avocation has compelled me to describe a plan of treatment which is far from an ideal one. Thus if the subject of syphilis should be amongst the ranks of the wealthy and should he have the misfortune to belong to the idle class, a more certain and efficacious plan of treatment might be easily marked out for him provided he were willing to devote all his time to the therapeutics of the disease. Such a plan would be the inunction method at which we shall now glance for a brief moment.

The ointment of the *British Pharmacopœia* is much too strong, and the German *Pharmacopœia* preparation is preferable in every way. It contains one part of mercury rubbed up with two parts of a mix-

ture of lard and suet. With such an ointment every case of syphilis can be treated more certainly and more rapidly than by all plans of mouth medication. It is very inconvenient, requires care, often the aid of an attendant, and the free use of baths; it exposes the secret of the patient's malady to those about him, and soils his bedclothes and undergarments. These are reasons which will probably always operate in preventing the inunction plan from becoming a routine method of treating syphilis. Nevertheless it is the best of all ways for treating the disease, and in some cases it is absolutely essential to the patient's life that he resort to it.

By a careful attention to the state of the patient's mouth enormous quantities of the antidote to syphilis may be introduced into the system without producing any effect whatever beyond the rapid cure or total disappearance of all syphilitic symptoms. I do not know of any more marked and unmistakable result in therapeutics than the results of this method in severe cases of syphilis. It may be used with advantage in all cases, but there are cases where it becomes the duty of the physician to insist upon the method by inunction: (1) In all grave attacks of the disease where the symptoms set in with unusual severity it should be resorted to. (2) In all cases where time has already been lost and the patient has not sought advice till the secondary phenomena have been in full swing for several weeks, as, for example, when the patient first seeks treatment for a retinitis, iritis, or otitis. (3) In nearly all cases of cerebral syphilis and where spinal symptoms supervene at an early stage. (4) In syphilis appearing under certain conditions after marriage. (5) In so-called malignant syphilis.

To carry out the inunction method properly, it is almost essential that the patient gives himself up entirely to the treatment. This is the explanation of the very superior results obtained by the use of the ointment. One cannot say that in order to use inunction the patient must give up all business and keep to his house, but if he is able to do so, larger doses can be safely administered and much time saved. My own observation leads me to believe that where a patient, especially in the winter season, insists upon attending to his ordinary business, as good results can be obtained by grey powder, the green iodide, or calomel by the mouth. But if he can devote himself to 75 or 100 inunctions as carried out at Aix-la-Chapelle we can confidently assert no better or more certain results can possibly be obtained in the treatment of syphilis.

During the carrying out of a mercurial course by the mouth where the secondary signs do not show a tendency to disappear great benefit

may be obtained by suspending the pills and beginning inunctions. In the late secondary stage it is often an excellent plan to rub in the ointment and give the iodide by the mouth. The plan cannot be properly carried out without a good bath (to 98° F.) and a mild rubbing with carbolic soap, and occasionally the sponging of the body with weak permanganate solution. After thorough drying with warm linen towels, the ointment (33 per cent.) and recently manufactured, may be rubbed in. As regards dosage a good average rule will be 1 drachm or 60 grs. of this ointment to be used daily. At Aix the practice is to rub in 38 grs. of the ointment twice a day into the different regions of the body. Thus the professional rubber takes the requisite amount of the drug, and after squeezing it between his palms he rubs it upon the first day into the skin over the inner sides of both arms, upon the second day the skin over the inner aspect of the thighs is attacked, and so on, winding up with the back on the sixth day, and a rest upon the seventh. After each rubbing the patient puts on a flannel gown, and without washing, goes to bed. The warm bath is resorted to in the mornings.

In severe cases double this amount of the ointment may be rubbed in. Thus in cranial syphilis I have resorted to ℥j morning and evening for some weeks without producing salivation. As in the plan of mouth administration, each case must be closely watched and the dosage modified by the effects produced. Twenty to thirty minutes generally suffice for each inunction and hairy parts must, as far as possible, be avoided, or shaving may be resorted to. A distinct advance has been made in the treatment of syphilis by the observations of Taylor, who first pointed out that the small round cell infiltrations which surround the lymphatic and vascular channels are liable to break out into fits of active proliferation after apparent dissolution by mercury. In this way a general infection may occur after a period of latency or apparent cure, and hence the vital importance of attacking as large an area of the cutaneous surface as possible during the inunction course, with the view of destroying all foci of the disease. There is, therefore, good reasons for regarding inunction as the ideal plan, being a combination of the local and constitutional methods, even when commenced in the secondary stage of the disease. This consideration also would seem to support the view that the continuous plan should give better results than the interrupted. With the view, therefore, of allowing as few foci as possible to escape, Taylor divides the surface of the body into eleven regions, which are all vigorously attacked by the ointment. An ointment of white precipitate (6 per cent.) may be applied to the scalp and beard. In this way there can

be little doubt that his plan is better than the older methods. It has the one drawback of demanding the aid of a rubber or attendant, as the patient cannot possibly reach the dorsal regions.

With care in severe cases as many as 100 inunctions may be accomplished without producing salivation, but in practice it will generally be found that the rubbings must often be suspended for a few days at a time in the presence of signs of threatening saturation; and it must never be forgotten that salivation may more suddenly appear and be more severe than in the mouth administration. Hence the necessity for greater care and watchfulness and scrupulous attention to the state of the mouth and gums. It does not appear that any special virtue attaches to the sulphur baths or waters which are so often made a portion of the routine of inunctions in various Continental resorts.

Time does not permit me to touch upon the methods of treating syphilis by mercurial plasters, soaps, fumigations, thermal and other baths. As a rule, they are not suitable for routine, though all-valuable under certain conditions. As already stated, the officers of the Section will welcome any expression of opinion from anyone who has special experience in their use, or in the practice of treating the disease by hypodermic or deep injections of mercurial salts.

Our next consideration is the place that the iodides should take in the routine treatment of syphilis. If we believe that they have, like mercury, a germicidal action as well as a destructive effect upon the cell formations, theory would suggest that we should begin the campaign with these drugs in conjunction with mercury; but practice teaches us that they are of little, if any, use at the beginning of the secondary stage, and some authorities go so far as to state that iodides in the exanthem stage of syphilis do considerable harm.

I think I am correct in saying that in the great majority of cases of syphilis most authorities would agree in saying that the iodides need not or should not be given in the secondary stage at all, perhaps all would agree that for the first six months iodides should not be administered.

It is of importance to consider what are the conditions justifying the exhibition of iodides in the secondary stage. Hutchinson states that they should be given when the bone pains are severe, or when the mucous membranes suffer severely; but clearly there are other conditions which demand iodides in combination with mercury, and these are the supervention of symptoms in the secondary stage, which generally are to be considered as usually tertiary manifestations, such as brain and spinal complications, that is, convulsions, paraplegia, and

swellings or new growths appearing anywhere, as in the testicles, liver, or spleen. Eye and ear complications call for iodides early. In all these exceptional instances, the iodide of sodium, which is preferable to the potash salt, may be given with the bichloride of mercury in solution; but since all these cases belong to the category of severe cases, by far the best rule is to commence inunctions without delay, and give the iodide in full doses by the mouth.

I think another indication for the administration of iodide even at an early stage is marked febrile or fever temperature. The drug appears to possess a distinct power over the temperature in the eruptive stage, and since it effectually depresses the fever it may safely be employed when this is a marked feature.

After the termination of a six or nine months' course of mercury, when the secondary symptoms have disappeared, the French practice of a two or three months' course of doses of the iodide is an excellent one.

As regards the treatment of the tertiary period little need be said. When the disease in the secondary or primary stage has been treated in the thorough and energetic manner described, no tertiary symptoms will likely ever be manifested. The majority of cases presenting tertiary signs are found among those where mercury had been given only for a short period, or not at all. Often they are met with where a mercurial course has been commenced with severity, and where the salivation had caused the treatment to be soon suspended and never again resumed.

There can hardly be a doubt about the wisdom of immediately commencing treatment by large doses of iodide. But the very striking power of the drug over gummatous growths sometimes causes the physician to trust to it alone. Striking as these results are, they will not prove permanent without the assistance of mercury. Upon the suspension of the iodide after the melting away of the gummatous mass, a recurrence at the old or an appearance at a new site generally may be expected. Mercury in the form of bichloride should be given in solution with the iodide, or the latter may be given by the mouth whilst mercury is administered by the skin. There are two well-marked peculiarities in the action of the iodide which must be remembered. First is the fact of idiosyncrasy which is more frequently noticed in the case of this drug than in any other remedy. The symptoms of iodism generally follow upon small dosage, and they frequently disappear upon doubling or quadrupling the dose. Now and then one meets with a patient where the drug produces such serious symptoms that it cannot possibly be administered in any way; such cases must depend upon mercury. They are exceedingly rare.



The second point about the action of the iodide is still more important, it effects the question of dosage in a way which is seldom observed in the treatment of disease by any other remedy. I have many times satisfied myself that these gummatous growths will flourish for many months and even years under a certain dose of the iodide taken regularly. Upon markedly increasing the dose a visible result may be obtained in seven or fourteen days and the tumour may disappear entirely in a few weeks. For instance, a patient with a large gumma on the sternum took 20 grs. of potassium iodide daily for six months without the least result; upon increasing the daily dose to 60 grs. all traces of the tumour were removed in three or four weeks. This happens so frequently that it cannot be regarded as a coincidence. It is not observed when mercury is being given at the same time. Hutchinson insists that ammonia should be invariably given with the iodide, and it would be interesting to have the experience of some of the subsequent speakers upon this point. A very important matter is the duration of the iodide treatment in tertiary syphilis, and here a very valuable result may be gained by this discussion. Sir William Gowers maintains that it should never be prolonged beyond a period of six to ten weeks, and he is satisfied that grave danger may follow a further prolongation. Milner states that iodide of potassium, though useful in syphilis, had no curative action whatever. "In overdoses it was almost as detrimental as mercury, patients had their brains and every special sense destroyed, their legs and bellies got fat, and they looked and acted like eunuchs, having no more power than the n." It has been my own practice to give iodide often for four or six months without intermission, and I have never even in full doses seen any serious results, and I have known patients keep up the drug for twelve months without any injury.

It was my intention to dwell upon many important points in the therapy of syphilis, but when I realised the short space of time which was available for the entire discussion I endeavoured to select a few only of the most interesting and practical aspects of the subject, and to bring these before you in the briefest possible way. When, however, I learned from the pages of the British Medical Journal that this Section was to be honoured by a visit from the Section of Dermatology, it became my duty to omit even much of what I had already written, including the interesting side of the treatment of the congenital affection, and it remained for me to put a few points in the shortest and most condensed manner, so that time might be available for those members of both Sections to join in the discussion.

II.—JOHN V. SHOEMAKER, M.D., LL.D.

Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia.

From beginning to end syphilis is essentially one and the same pathological process. The initial lesion is more than a local sore. It is the first outward manifestation of a constitutional infectious disease. I am, therefore, firm in the belief that a patient should be placed upon constitutional treatment as soon as the diagnosis of chancre is made. In most cases the physical characteristics of the sore enable us to make a positive diagnosis. I regard local treatment, in the primary as in the later stages of syphilis, as of less importance than constitutional management. Effective but not too severe cauterisation will hasten repair when considerable ulceration attends the lesion. In many cases black wash is an excellent application. A dusting powder is preferable in most instances. Calomel, acetanilide, bismuth subnitrate, bismuth subiodide, aristol, europhen, iodoform, iodol, and salol are substances which may be used with good result. Excision of the chancre is, according to my belief, unphilosophical, and the practice has been entirely without success. In non-ulcerated chancre no local measures are required. Whatever form the initial sclerosis assumes, it heals more readily and more rapidly when systemic treatment is adopted. We possess remedies for syphilis which approach specific power. If we have reason to believe that we are dealing with syphilis why wait until additional manifestations supervene? The early adoption of general treatment attenuates the virus of the disease, alleviates its symptoms, and may almost be described as prophylactic. A strong argument in favour of early constitutional treatment is the fact that visceral lesions occur in secondary syphilis far oftener than is generally realised. As regards constitutional treatment, mercury is our main dependence. It is often a question as to the manner in which the metal should be introduced into the system or the preparation which should be administered. A mere routine treatment is particularly reprehensible in syphilis. Fumigation involves a troublesome arrangement of apparatus, and draws attention to the patient—a circumstance which, in private practice, we must avoid. Inunction is an uncleanly method. In both fumigation and inunction we are unable to regulate the quantity of mineral absorbed, and these procedures are, consequently, more apt to cause pytalism than when the drug is given by the mouth or thrown beneath the skin. In most cases the ordinary mode of administration by the mouth will be preferred by the patient, and is satisfactory to the physician. The most eligible preparations are blue mass, calomel,

grey powder, the green iodide or biniodide, and the tannate of mercury. The numerous forms more lately recommended possess no conspicuous advantages over the older salts. Calomel is prompt and efficient, but is too apt to excite salivation. As I agree with Mr. Jonathan Hutchinson regarding the importance of minimising the virulence of the disease, so I also have a favourable opinion of the value of hydrargyrum cum creta, and often prescribe it, especially where there is notable disorder of the secretions. Corrosive sublimate is reliable, and is best given in solution. It has the advantage of combining well with iron. The biniodide can be effectively given with potassium iodide, as in the syrup Gibert, and is particularly available in late secondary and in tertiary syphilis. My usual preference in cases seen early is the green iodide of mercury. In vigorous subjects it is serviceably conjoined with small doses (gr.  $\frac{1}{8}$ - $\frac{1}{4}$ ) of tartar emetic. If it occasions griping and diarrhoea a fractional quantity (gr.  $\frac{1}{2}$ - $\frac{1}{3}$ - $\frac{1}{4}$ ) of powdered opium should be added. After three or four weeks the antimonial may be discontinued. The mercurial is gradually increased until it gives some evidence of its physiological effects: It is then either gradually reduced or at once discontinued, and a simple tonic given in its place. The tonic remedies which I employ during this intermission are iron, strychnine, hoang-nan, cod liver oil, hydrastis, or coptis trifolia. Several of these may be given in conjunction. The mercury is then resumed for three or four months, stopped or alternated with a tonic, administered again for several months. At the end of a year, if manifestations of disease are absent, the intermissions are lengthened. By the end of the second year, under this mode of management most cases are cured. The patient's habits should conform to dietetic and hygienic regulations. Tobacco favours the production and continuance of oral lesions. Alcohol is detrimental unless given in medicinal amounts to debilitated subjects, or those habituated to its use. If such a plan is faithfully followed, the percentage of undoubted cures would be much increased. The difficulty is, that many patients, as soon as the tangible evidence is suppressed, abandon medicine and resume their reckless courses.

How rapid and efficient treatment may be under favourable circumstances is shown by the case of a young woman in whom the mode of infection could not be discovered. After suffering for a week or more from excruciating headache, attended toward the last with some fever and delirium, a plentiful macular syphilide appeared upon all parts of the body, including the face. There was a little thinning of the hair. In two week's time under the influence of the green iodide of mercury, the spots were scarcely discernible. In another week

every trace had disappeared, the complexion was pure, the skin rosy and soft. More than four years have elapsed, and there has been no return.

A much more difficult case, because it had reached an advanced stage without its nature having been recognised, is that of a young man who now presents only certain trivial lesions. When I first saw him he was a hideous spectacle. His face was covered with large tuberculous syphilis. The disease had been in existence for more than two years. In that space of time his skin had never been free from lesions; he had ulcerated sore throat, osteocopic pains, and an inflamed eye. He was steadily growing worse, was anæmic, weak, and emaciated. He was first placed upon a mixture containing tincture of *coptis trifolia* and tincture of *xanthoxylum*. Subsequently he was given tincture of *nux vomica* in large doses with fluid extract of *hydrastis canadensis*. The *nux vomica* was then discontinued, and the doses of *hydrastis* increased. The patient gained strength under these medicaments, and his blood improved in quality. He was then given mercury with chalk in 3 gr. doses thrice daily, and, with returning flesh and vigor, the last drug was replaced by potassium iodide. His general condition is now good, he feels well, and the only evidences of active disease are a small crusted lesion on the upper border of the right ear, and a similar one just within the left nostril. There are a number of small and medium-sized scars upon the face, but they are not very noticeable to a casual glance. Larger cicatrices exist upon the trunk and limbs. Treatment still continues.

For a rapid impression upon the disease I much prefer subcutaneous injections to fumigation or inunction. A soluble salt is, I think, equally efficient and less dangerous than an insoluble preparation. Abscesses and other severe manifestations are liable to follow the injection of calomel. The corrosive sublimate is my choice. In corpulent subjects I inject the solution into the subcutaneous tissue, in thin persons into the substance of a muscle. The solution which I use contains 4 grs. to an ounce of distilled water, and the quantity employed is 5 minims daily, augmenting the dose by a minim every second or third day until improvement occurs or the physiological effect of the drug appears. Lusty patients will safely bear larger doses given at longer intervals.

As syphilis is curable it is no permanent bar to marriage. If a patient can be kept under the constant surveillance which I have outlined he may marry in a year after all syphilitic manifestations have ceased.

## III.—J. NEVINS HYDE, M.D., Chicago.

Dr. Nevins Hyde thanked Dr. Whitla for his valuable contribution to the subject, and expressed a regret that the limits of the discussion forbade a full exposition of his views. Hutchinson had said that syphilis was an imitator of all diseases. The figure conveyed a suggestion of fact. No competent physician would think of treating tuberculosis, for example, by a routine method. There should be no routine treatment of syphilis. The phenomena of syphilis varied widely. On the one side were the cases which without question terminated formally without treatment. At the other extreme were the cases in which from the first a fatal result was imminent and inevitable. He had seen cases in which a patient died with gummata of liver or brain within a few months after infection. Between those two extremes were to be found the mass of cases in which science achieves its most brilliant results by the aid of mercury and iodine. With respect to the choice of these, the modern expert was to be measured by the degree of his skill in the handling of mercury rather than of iodine. The exhibition of these drugs was often set down as of the first moment in putting away the chances of what the French called *tertiarisme*, but before these should be named the constitution of the patient, his natural vigour and his habits, which were of prime importance. Dr. Hyde heartily commended the recommendation of Dr. Whitla respecting the keeping of a weight chart in all cases.

## IV.—MALCOLM MORRIS, F.R.C.S. Ed.,

Surgeon to the Skin Department, St. Mary's Hospital, London.

Mr. Malcolm Morris said he agreed with nearly everything Dr. Whitla had said. He thought that sufficient stress had hardly been laid upon the influence of alcohol on the course of the disease. Indeed, as regards the effects of the disease and the influence of treatment syphilis might be divided into those who take alcohol and those who do not. The action of mercury he believed to be an antagonistic one to the syphilitic virus, although its influence on the metabolism also played a part. He commenced mercurial treatment at the earliest opportunity, and regarded an expectant plan during the first stage as time lost. He thought it unwise to lay down arbitrary rules as to the particular preparation, but if driven to one only, he preferred inunction. Intramuscular injections were not so good, although well adapted to individual cases. For inunction he used a preparation of mercury with mullin, and he believed that this method of administration was often greatly helped by the systematic use of stimulants.

baths, as at Aix or Wiesbaden. If severe secondary symptoms were present, the mercurial air bath (calomel 15 grs.) was a useful mode of administration, and particularly if extensive ulcerations exist. These severe secondaries often develop after extragenital chancres. Iodine he only gave when the secondaries were assuming a tertiary form, and then not at the expense of the mercury. In the third stage he combined iodides with ammonia to increase their efficacy, and he thought as a vehicle nothing equalled sarsaparilla. Sometimes he found it necessary to introduce the iodides into the food.

---

V. H. HERVIEUX, M.D., Montreal.

Dr. Hervieux thought that the discussion on the treatment of syphilis would go on so long as the intimate nature of the syphilis was not perfectly known. The classical treatment, as so ably expressed by Dr. Whitt, was, after all, an empirical treatment, based on clinical observation only. He thought no one would deny that syphilis was a virulent disease, and until the nature of the micro-organism that caused the disease was known, until the circumstances which affected the degree of virulence of this micro-organism were thoroughly studied, the opinions on the means of fighting the disease would vary, at least in the details.

---

VI. C. W. ALLEN, M.D., New York.

Dr. Allen said that the treatment would remain much the same, even if the micro-organism of the disease were discovered. The treatment of many diseases of known cause had not been radically changed. He believed that mercurial treatment should be begun as early as possible. No late severe lesions, in his experience, followed by reason of it, as had been taught; and unless it was begun early valuable time was lost. The fact must constantly be kept in mind that we were treating an individual, and not combatting a disease. The form of drug, the dose, the method, must all be modified. The occupation and mode of life might make injections preferable. He preferred the soluble salt, and found many patients who preferred the injections and inunctions. In many instances the results were brilliant. As to the greater severity of extragenital chancres, while personally he had not found syphilis uniformly or generally more severe after extragenital primary lesions, he thought from the textbook statements and views of observers that such must be the case. He had thought perhaps that the barriers raised by the glands in the groin might account for a lesser degree of severity after genital

syphilis, while in chancre of the finger, for example, the poison became disseminated through the blood to a greater extent before the glands at the elbow and axilla were encountered, in which it could be stored up, so to speak.

---

VII. L. DUNCAN BULKLEY, M.D., New York.

Dr. Bulkley said that he believed that much of the rebelliousness and seriousness of syphilis from extra-genital lesions was due to the fact that the disease was too often overlooked and untreated, thus giving it opportunity thoroughly to infect the general lymphatic system. In regard to the treatment of syphilis, he wished to emphasise a simple point, and that in regard to the late lesions of the disease. He believed that mercury should be used even to the end—five, ten, twenty years after infection, if there were still lesions present. If mercury were used there would be much less iodide of potassium needed. In other words, the same amount of iodide would produce infinitely more results if a proper quantity of mercury was used at the same time, preferably in combination with it, as in the well-known Ricord's mixture. He believed that lives had been sacrificed by the neglect of mercury late in syphilis.

---

VIII. D. J. LEECH, M.D., F.R.C.P., Chairman.

Dr. Leech pointed out that in the discussion which had taken place there was one feature which deserved notice. No other remedies for syphilis had been alluded to except mercury and the iodides. The antisymphilitic power of the numerous drugs, such as sarsaparilla and guaiacum, once regarded as curative agents in syphilis, had been ignored, and the negative unanimity of the speakers seemed to show that faith in them had passed away amongst those best able to give an opinion concerning the treatment of syphilis, even though one of them—sarsaparilla—might still be regarded as a useful vehicle. To clear the ground of the many substances still ticketed in books as "antisymphilitics" was a step onwards in therapeutics. It was interesting to observe that the verdict of practical experience with regard to sarsaparilla coincides with the inferences to be drawn from its pharmacological investigation, which shows that the drug contains no active ingredient except a saponin-like substance analogous to that present in senega and quillia bark, the only effect of which is to stimulate the gastro-intestinal mucous membrane; fortunately the mucous membrane seems incapable of absorbing this active principle, which otherwise would exert an evil influence on the circulation. It

is quite possible that its stimulant action on the mucous membrane may be the cause of sarsaparilla being useful as a vehicle. Most of the main principles relating to the treatment of syphilis, which Prof. Whitla had laid down in his very able paper, had been acquiesced in by the speakers who had followed him. Some of the points debated, such as the time at which the use of mercury should be commenced, would probably only be finally settled when our knowledge as to the nature of the action of mercury was much more advanced than at present. And with regard to this, it might be pointed out that whilst the idea that mercury acts not directly but by causing the production by the tissues of some material analogous to an antitoxin, is only a suggestion calculated to lead to further experiments, it does not seem, that is, as one speaker had suggested, the utility of mercury applied locally is opposed to this idea; for if mercury, when introduced into the system, causes the production of an antitoxin, it may do so at any part to which it is applied, if the issues reacting with it are present there. There were only two other points, the Chairman said, to which he would venture to refer. The first was that of the dosage. He did not think it possible to lay down any rule with regard to the amount of mercury or iodide to be given. Each individual had his peculiarities, which could only be ascertained by trials. The drugs should be pushed until they produced a good effect, or such a physiological action as to prevent their continuance in full doses. This was especially the case with iodide of potassium. He had recently seen a case in which both mercury and iodide failed to do good until the latter was given in 60-gr. doses three times daily. The second point related to possible evils arising from the use of mercury in ordinary doses. In some ailments less fear is now entertained than formerly of moderate doses of mercury in syphilis, but where there was a tendency to ulceration evils sometimes followed its use. Especially is this the case in syphilitic ulceration of the soft palate. Ricord pointed out that in these cases the use of even small doses of mercury seemed to promote the perforating process.



## Case Reports.

### REMARKS ON A CASE OF PARANEPHRITIC ABSCESS, WITH RUPTURE INTO THE STOMACH.

BY

ALBERT G. NICHOLLS, M.A., M.D.,

Assistant Demonstrator of Pathology in McGill University ; Assistant Pathologist  
to the Royal Victoria Hospital, Montreal.

**Nephrolithiasis ; pyonephrosis ; para-nephritic and retroperitoneal abscess ; rupture into stomach ; gangrene of spleen and pancreas ; acute hepatitis and portal pylephlebitis ; acute suppurative colitis ; right acute parenchymatous nephritis ; left empyema and collapse of lung ; pure culture of *B. coli* from abscess.**

The case which I have an opportunity of recording, through the kindness of Prof. James Bell, presents several features of clinical interest, and in regard to its termination, namely discharge of a large para-nephritic abscess through the stomach, must be regarded as being of the greatest rarity, if not indeed absolutely unique.

Mrs. J. R., æt. 30, was admitted to Dr. Jas. Bell's wards at the Royal Victoria Hospital, on July 20th, 1897. Her illness began in May, 1896, with a dull aching pain in the left lumbar region which was felt into the left axilla, and was only relieved by assuming a dorsal or left lateral position. Prior to her admission there were one or two intermissions for a fortnight or so, but when present the pain was fairly constant. About June of 1897, she further began to suffer from an attack of sharp, continuous pain in the left groin, which lasted three days, being most marked at night. This was accompanied by nausea. A week later she had a similar attack, associated with fever and sweating, which lasted for a week. Between June 20th and 30th, she had five rigors with profuse sweating. For about a year the patient had noticed that her urine contained a white ropy sediment, and became thick and greenish. There was neither pain on micturition, frequent passage of urine, nor hæmaturia.

*Personal History.*—The patient had the usual diseases of childhood ; 12 years previously she suffered from pneumonia on the left side. In January, 1896, she gave birth to a child 3 weeks premature. Before delivery and after she had several convulsions. There was no history of renal colic.

*Family History.*—No inherited taint.

*Condition on Admission.*—The patient was emaciated and anæmic, with slight sub-icteroid hue of the sclerotics. She complained of a dull aching pain in the left lumbar region, which was aggravated by lying on the right side and associated with a dragging sensation in the left loin. In the left side of the abdomen was a large fluctuating tumour which extended vertically from a line one inch above the umbilicus to the 5th rib in the mammary line, and laterally to a point two inches to right of median line, shading off posteriorly. The tumour was most prominent in the epigastrium, was dull on percussion, and the dull area was not movable. The flanks were clear. Slight pulsation in the left intercostal spaces was noted, synchronous with the heart impulse. This dulness merged off insensibly into the liver and heart dulness, and posteriorly, was continuous with a dull area on the thoracic wall. This area on percussion gave an impaired note from the 6th to the 7th interspace, and then an absolutely flat note from that point to the base of the lung merging at that point into the tumour dulness. In the left loin posteriorly the subcutaneous tissues were distinctly boggy and œdematous.

The accompanying figures show very well the extent of the dull area.

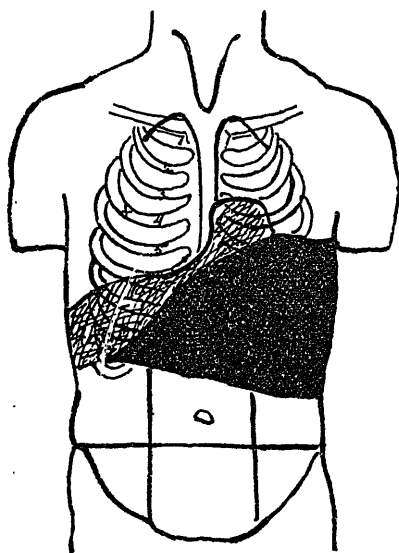


Fig. I. Front View.

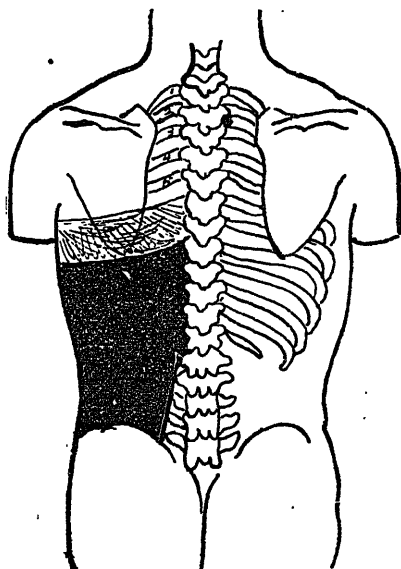


Fig. II. Back View.

In fig. 1, the stippled portion represents the liver and heart dulness; in fig. 2, the area of relative dulness over left lung.

Above the level of the 6th rib posteriorly, the note was hyper-

resonant. From the apex to the 7th rib the breath sounds were harsh and expiration prolonged; over 7th and 8th ribs blowing breathing was heard, and below this point the breath sounds were only faintly audible. There was no cough or expectoration. The movement of the diaphragm on the left side was much impaired. Right lung normal. The impulse of the heart apex was diffuse, being palpable in the 3rd and 4th spaces. The vertical cardiac dulness was not increased, but the right border of heart dulness began at the mid-sternal line. No murmurs.

The urine was acid, of a rich amber colour, turbid, sp. gr. 1020. The deposit was slightly flocculent consisting of pus, hyaline and granular casts, and a few red-blood corpuscles. A decided trace of albumen was present. No sugar.

On July 22nd the chest was aspirated in the 9th interspace about the posterior axillary line and thick pus and bloody fluid were obtained. A resection of portions of the 9th and 10th ribs was performed and the pleural cavity opened. The lung was felt about a finger's breadth above the incision. A small amount of clear fluid came away. In the diaphragm was a small puncture, evidently made by the exploring trocar, and through it pus was oozing. The incision was enlarged upwards and the visceral and parietal layers sutured together. An incision was made through the diaphragm and pus was seen coming from the region of the left kidney. The wound was packed with gauze and dressed, it being intended to open into the loin later.

July 23rd, The dulness over the lung posteriorly had largely cleared up, but swelling in the epigastrium was still prominent.

Aug. 7th. Swelling in epigastrium was distinctly smaller and patient vomited about 2 ounces of thick brownish fetid material.

Aug. 8th. Swelling over epigastrium was absent and the note tympanic. Vomited again. Material examined microscopically gave the appearance of broken down pus.

Aug. 9th. Great nausea. Involuntary stools.

Aug. 10. Delirious. Involuntary, tarry, stool. Vomited blood-stained fluid and one small clot. Death.

*Autopsy.*—Twelve hours after death. (Performed by A. G. N. and H. K. Wright).

Body that of a young female, with usual signs of death. Great emaciation. Post-mortem rigidity complete. Considerable lividity. On opening abdomen, muscles were small; subcutaneous fat absent. A small amount of clear fluid was present in the pelvis.

*Right Lung*—Pale and crepitant throughout. Lowest-lobe adherent posteriorly.

*Left Lung*—Upper lobe generally adherent with old adhesions. Lower lobe completely carnified. Surface covered with flakes of purulent lymph. The diaphragm

was blackened and infiltrated. The left pleural cavity contained about eight ounces of mixed pus and blood.

*Heart.*—Muscle pale.

*Spleen.*—Weight 255 grammes. Adherent posteriorly and to diaphragm with recent loose adhesions. The inner lower surface was covered with purulent lymph, and in lower angle was an area of necrosis, the size of a filbert, with purulent broken down walls, but with an attempt at a pyogenic membrane. The spleen pulp was soft and congested.

*Right Kidney.*—Cortex pale and fatty looking, and swollen. On section, pale and slabby. Pyramids not well defined from cortex. Acute nephritis.

*Bladder.*—Distended and slightly congested.

*Liver.*—Weight 1055 grammes. On section pale, friable and fatty. Left lobe showed condition of acute suppurative hepatitis and also suppurative portal pylephlebitis.

On examining the left side of the abdomen a large pus collection was seen to the inner side of the kidney. This was bounded above by the spleen, the diaphragm, and the cardiac end of the stomach, was walled in by fairly firm adhesions at the median line, and extended downwards to about the middle of the left kidney. The lower portion of the abscess on the right side was bounded laterally and slightly anteriorly by the descending colon, which was fairly firmly adherent.

*Intestines.*—The portion of the descending colon, bounding the abscess cavity, presented greatly thickened walls, with diffuse suppurative infiltration, but no perforation. It contained blood-stained clotted contents.

*Stomach.*—About half filled with mixed pus and blood. At the dependent part of the cardia, close to the spleen, was a circular perforation about 10 mm. in diameter. That this was due to perforation from outside the organ was evidenced by the fact that the erosion was of the shape of a short truncated cone with terraced walls, the base being towards the serosa and widely eroded, while the opening in the mucosa was much smaller, the infiltration less and the mucosa freely moveable, with sharp edges. The mucous membrane showed a condition of diffuse acute inflammation.

*Pancreas.*—The tail of the pancreas was contained in the abscess cavity; part of it had sloughed off and the rest was necrotic and gangrenous. The head was apparently normal.

Further examination showed that the peri-nephritic abscess was a direct extension of a large retro-peritoneal pus collection, which had burrowed from behind the left kidney upwards into the diaphragm and downwards along the ilio psoas to a point one inch below Poupart's ligament where it presented, laying bare the iliac vessels. The retro-peritoneal glands were generally enlarged, but not suppurating.

*Left Kidney.*—Was double the normal size, being converted into a pyonephrotic sac, distended with thick creamy greenish pus. At the proximal end of the ureter was a calculus the size of a small hickory nut, but not impacted. About 20 smaller calculi were found in the calices. Posteriorly the kidney was necrotic, but there was no direct communication between the pelvis and the retroperitoneal tissues.

Cultures from the pus gave pure growths of the colon bacillus.

To sum up, then, in this case we were dealing with a large fluctuating tumour in the left kidney region, associated with spontaneous and elicited pain, the boundaries indefinitely palpable, accompanied by hectic fever, rigors and sweating, œdema of the subcutaneous tissues in the left loin posteriorly, pus and casts being present in the urine. On exploratory puncture pus was found coming from region of the kidney, and shortly before death vomiting of purulent and blood-stained material occurred. Significant also was the fact that coincident with the vomiting of broken down purulent material, the prominence in the epigastrium disappeared.

In the presence of these symptoms and physical signs it was hardly possible to escape the conclusion that a peri- and para-nephritic abscess was present, which had ruptured into the stomach, although from what source arising it was not so simple to decide.

In such a case so many nice points in the differential diagnosis come up that it may not be without interest to briefly refer to them.

When a fluctuating tumour is present in the kidney region it has to be determined, first, whether the tumour is formed of a distended kidney simply, such as would occur in hydronephrosis, a pyonephrosis, simple or tubercular, a congenital cystic kidney, or an echinococcus cyst; secondly, a paranephritic abscess associated with suppuration in the kidney itself, as in pyonephrosis and nephrolithiasis, tuberculosis, and embolic suppurative nephritis, a suppurating carcinoma of kidney, suppurating echinococcus cysts, or actinomycosis; thirdly, a para- or perinephritic abscess arising from a source outside of the kidney, such as traumatism, perforative appendicitis and perityphlitis, caries of the spine, empyema, and rarely liver abscess.

The first group of cases are characterised by a more defined and bounded tumour mass of rounded form, without involvement of the abdominal wall and skin. Where the kidney is much distended the colon may often be made out crossing the tumour in front diagonally. Such tumours are not movable. Here the pleura would not be involved.

In doubtful cases the more circumscribed the tumour is, the more it speaks for kidney abscess, especially if there is no cedema of the parietes. When deep-seated suppuration is present the mass at first may be hard, resistant and indurated, later elastic, and finally, as the abscess increases, fluctuation may be made out, especially if the tumour is palpated with one hand in front and the other in the loin behind.

Having thus decided that a para- or perinephritic abscess exists, it is necessary to discover its origin. A careful examination of the spine should be made for points of tenderness or pain on movement to eliminate carious disease. Until secondary infection sets in such cases run along without fever, or when present it is slight and continuous. Psoas abscess arising from paranephritic suppuration occurs very late in the course of the disease, and is never so prominently to the fore as in the case of psoas abscess from caries. In the latter, too, the pain and the tumour are much more marked at the region where the pus presents. When empyema is the cause this can usually be easily differentiated from the history and the presence of a pleural effusion early in the disease.

Appendicitis and paratyphlitis only come into mind when the

tumour is on the right side. The history of these cases is of great value, and the position of the abscess at first is so different from that in paranephritic abscess that it is not very difficult to decide. Later on, however, it may be impossible. In a paratyphlitic abscess fluctuation is felt deeper down, and a slight tympany may be felt over the dull area on light percussion.

Liver abscess bursting into the peritoneum is a rare event. Such abscesses may be suspected from a history of pain over the liver, with or without enlargement, with or without icterus, and with rigors, sweating and a remittent or intermittent temperature curve, especially if we can establish a cause, such as tropical dysentery, traumatism to liver or cranium, gastric ulcer, typhlitis, gangrene of lung or malignant endocarditis.

We are justified in diagnosing paranephritic abscess if the following are present: pain in kidney region, either localised or radiating, intermittent fever, a fluctuating tumour in the loin with *œdema and reddening of the neighbouring abdominal wall*, and possibly pain on contraction of the psoas muscle. If the colon is involved, melæna may be present.

When there is any doubt as to whether pus exists, a puncture with a trocar is indicated. In this connection, it might be mentioned that a retroperitoneal lipoma or lipo-myxoma may cause a fluctuating mass in the kidney area. This usually grows very slowly, without fever, and attended by simple emaciation without cachexia. It can often be felt to be lobulated and is generally crossed by the colon, and, when punctured, no fluid can be withdrawn.

Having determined that the abscess is associated with a gross lesion of the kidney, it remains to differentiate between the various conditions before mentioned.

Actinomycosis and echinococcus cysts are so rare in this country as hardly to deserve discussion. An examination of the contained fluid will usually tell.

Carcinoma is also rare. This gives rise to a hard tumour, with perhaps soft areas to be felt in it. Metastases should be looked for, the cancerous cachexia and an exploratory puncture may decide its nature.

The vastly more important conditions to be discussed are nephrolithiasis and tuberculosis.

A history of renal colic is, of course, significant, but is often absent, as in the present case. In rare cases a stone might be felt on palpation or on exploratory puncture. The X rays might also reveal the presence of a calculus.

Tuberculosis of the prostate, vesiculæ seminales, testes, epididymes, ovaries, tubes and bladder should be looked for, as some of these lesions are almost invariably present in tubercular pyonephrosis. A careful search for tuberculosis in the lungs should also be made.

The most important information is obtained from the examination of the urine. The points to be looked into are the reaction, the presence of pus, blood, gravel, fragments of tissue, and presence of bacteria.

In suppurative nephritis the reaction is at first acid, but may become alkaline. Schmidt and Aschoff found that when the *B. Coli* was present alone, the urine did not become alkaline, but this only occurred when other bacteria, such as staphylococci, were present either alone or associated with the colon bacillus.

The amount of albumen is always small depending upon the presence of the contained pus. Casts are usually absent, but may be found. Blood is almost always present. A sudden discharge of pus into the urine may be due to the rupture of a small abscess into the pelvis of the kidney, a sudden dislodging of a plug in the ureter, or the rupture of a peri-nephritic abscess into the urinary ducts. Rarely portions of kidney tissue may be recognized.

The urine in pyelo-nephritis does not differ much from the last case, but we may expect to find kidney epithelium and sometimes casts, in addition to pus and blood.

To distinguish kidney-abscess from a suppurative pyelitis is not always possible, as in both a sudden discharge of pus into the urine may occur. The presence of casts and kidney tissue would suggest the former condition.

The urine in para-nephritis, of an origin extraneous to the kidney, is normal, except in the case where the abscess bursts into the pelvis of the kidney. In the latter event the urine is for a long time free of pus; pyuria only occurs late on in the process.

In a para-nephritis resulting from pyelitis, pyelo-nephritis, or tuberculosis of the kidney, pus is of course present.

The urine of congenital cystic disease is that of chronic interstitial nephritis.

The urine in hydronephrosis may be normal, or there may be a sudden increase in the amount of urine associated with a corresponding decrease in the size of the tumour (intermittent hydronephrosis). Such urine is of low specific gravity and usually contain a small amount of albumen, with epithelial elements derived from the pelvis.

When nephrolithiasis is present, the urine is almost always acid. The presence of gravel or small urinary calculi is conclusive if associated with colic. Bloody pus and epithelial cells are also present.

As renal colic can be caused by the passage of other bodies besides calculi, one would not be justified in diagnosing nephrolithiasis from hæmaturia, colic, and signs of pyelitis, unless concretions were found in the urine as well. To exclude vesical calculus, the character and localisation of the pain is suggestive, being usually not confined to one side as in nephrolithiasis. The reaction is of no importance, as alkaline urine can be found in stone in the kidney. Examination with the sound is necessary. Also in nephrolithiasis the pus is mixed with the urine as it flows, while in cystitis it is mostly passed at the end of the act of micturition. Catheterisation of the ureters will often give important information.

In tuberculosis of the kidney the urine is acid, cloudy, contains albumen, and the sediment consists of pus, blood, epithelium and detritus. Sometimes shreds of tissue and elastic fibrils are found. A certain means of differential diagnosis is only at hand in the recognition of the tubercle bacilli in the urine. A few isolated bacilli may be found in miliary tuberculosis of the kidney, but this is rare, and the rule is that even in widespread tuberculosis elsewhere the urine is free, unless the kidneys are the seat of a diffuse caseous process. We are only justified in diagnosing the latter condition, if after repeated examination of the urine, the bacillus of tuberculosis is constantly present. With respect to the technique of this examination, I might refer to an important practical point, the differentiation of the tubercle bacillus from smegma bacillus. Our experience at the Royal Victoria Hospital, based on the investigations of Dr. C. B. Keenan, is in accord with that of Grünbaum, who found that in the majority of urines taken from all cases, the smegma bacillus was present. In the urine of females this bacillus was present oftener than in that of males. Also in catheter specimens it was almost always absent. The method of staining is of great importance. Both the smegma and the tubercle bacillus stain by Gabbett's method and can scarcely be differentiated under the microscope. A point of difference lies in the fact that the smegma bacillus is decolorized by absolute alcohol while the tubercle is not.

The simplest method is to stain in the usual way with carbol-fuchsin heated over the flame and then to differentiate with a saturated alcoholic solution of methylene blue applied for five minutes. By this method (Weichselbaum's) only the tubercle bacilli are stained. So that by using catheter specimens and staining by this method we have a certain means of determining the presence or absence of the B. tuberculosis.

With a careful attention to the history, and an examination on the



lines previously indicated, a diagnosis can often be made, but in the absence of one or more of the leading factors it may be impossible to do so. A careful and repeated examination of the urine should be made, and where deep seated suppuration is suspected, exploratory puncture is indicated. Among the more remote signs of a burrowing abscess in the retro-peritoneum may be mentioned paraplegia, neuralgic pains in a limb, anæsthesia, and thrombosis of the iliac vessels.

With regard to the etiology of abscesses in the kidney region, it will be gathered from what has been already said that many factors come into mind as the exciting cause of the condition. But besides those mentioned, a few of the so-called primary cases have been found to be sequelæ of the infective fevers, notably typhoid, scarlatina and smallpox; a few are said to be due to exposure to cold. By far the most frequent cause, however, of the primary cases is traumatism, from falls, crushing, wounds, &c. In many cases, however, no cause can be assigned.

The most complete discussion of the subject which I have met with is an article by G. Nieden (*Deut. Arch. f. Klin. Med.*, Bd. XXII., s. 451). Unfortunately owing to the fact that Koch's discovery of the tubercle bacillus was not then published, the cases cited are likely to be misleading, inasmuch as the conditions of suppurative nephritis and tuberculosis, regarded as etiological elements, are probably often confused.

Nieden tabulates in all 166 cases which he was able to collect from the literature previous to that time (1878) and gives particulars of 6 other cases.

Traumatism was put down as the cause 26 times; suppurative nephritis (pyelonephritis), 21 times; nephrolithiasis, 14; exposure to cold, 11; unknown cause, 24; caseous renal tuberculosis, 3.

Among the rarer causes were pyelitis 6 times; echinococcus, 4; strongylus gigas, liver abscess, suppurating cysts, cholelithiasis, abscess of ligamentum latum, and caries of spine, 2 each; typhoid, carcinoma, perforation of colon ascendens, of colon descendens, perforation of cæcum, and perityphilitis, once each. Of the remaining cases the cause was doubtful.

Owing to the loose cellular tissue about the kidney the abscess is usually single, of large extent, and often develops rapidly. In a few cases, usually pyelitis or pyelonephritis, multiple small abscesses develop and may fuse or undergo spontaneous absorption, in the latter case resulting in fibrosis and contraction of the affected area. When operative interference is not resorted to early, the abscess burrows in the retro-peritoneal tissue and usually points either in the loin or at

Poupart's ligament. Rarely it presents below the gluteus maximus, between the biceps and sartorius, or at the inguinal ring. Perforation into the cavities of the body and other hollow viscera occurs less frequently. Perforation into the colon is the most frequent and a relatively happy result with regard to care. In Nieden's series it occurred 13 times. Duffin regards it as a more common event even than external rupture.

Rupture into the pleural cavity is the next commonest event, being noted in 8 cases. If the lung is adherent to the diaphragm the pus may discharge through a bronchus. This occurred 7 times. Perforation into the peritoneal cavity is excessively rare, occurring only 4 times. This is due to the fact that abundant limiting adhesions are usually formed.

Perforation into the urethra, bladder and vagina occurred in one case each.

Perforation into the stomach, mainly on account of which the present case is placed on record, seems to be unknown. It did not occur in any of Nieden's series. Rayer, indeed, mentions it as occurring, but Nieden states that he did not meet with any example of it recorded.

A careful search through subsequent literature has failed to reveal any such, so that we must conclude, at least so far as our information goes, that the case here recorded is unique.

# BRONCHIECTASIS TERMINATING IN PNEUMONIA, SIMULATING PULMONARY AND LARYNGEAL TUBERCULOSIS.

BY,

F. G. FINLEY, M.D.,

Assistant Professor of Medicine and Associate Professor of Clinical Medicine, McGill University; Physician to the Montreal General Hospital.

C. O., male, æt. 19, was admitted to the Montreal General Hospital on February 23, 1897, complaining of cough, loss of flesh and spitting of blood.

He had measles and whooping cough in childhood, and since the age of 8 years has suffered from cough, which has continued with more or less severity since. In September last it became worse, and he began to lose flesh. In January he suffered from a pain in the left side, which was extremely severe and catching at first, and lasted eight or ten days. On the day previous to admission, he spat up two or three drachms of clotted blood, and a little later a small quantity mixed with sputum.

*Examination.*—The patient is of medium size, fairly nourished, and not anæmic and the temperature normal. There is a slight lateral curvature of the spine, the convexity being to the right in the dorsal region. The right side of the chest is rather larger, measuring 16½ to 18 in., whilst the left is only 15½ to 17 in. The percussion note is slightly dull on the left side in front and in the axilla, whilst it is hyper-resonant over the right lung. The breath sounds are slightly feeble over the dull area, and there are here a few scattered single crepitant râles.

The heart is of normal size; a harsh systolic murmur is present in the pulmonary area, but there is no pulmonary accentuation. There is also a systolic murmur in the left supra-clavicular area. Until February 28th the expectoration was small in quantity, the temperature did not rise above 99°, and there was slight sweating.

On February 28th the temperature rose to 102½, the cough became severe and the expectoration copious, and a few days later extremely fetid.

From this time there was a steady downward progress. The temperature was remitting, rising from 102° to 104° at night and falling to 99° and 101° in the morning. He became pale and lost about three

lbs. weekly in weight. The expectoration increased, varying from 8 to 14 oz. daily, continuing extremely offensive. Profuse sweating was also noted. Coarse crepitant râles developed on both sides, and on March 12th, there was a dullness from the 4th to 6th rib, and in the lower axilla on the right side. Blowing breathing and bronchophony were present over the dull area. Evidence of consolidation ultimately spread over the whole posterior surface of the right lung.

Dr. Birkett examined the throat and reported marked anæmia of the soft palate and atrophic rhinitis and superficial ulceration of both the cords.

The sputum was examined repeatedly for tubercle bacilli, but they were never present.

Marked prostration of strength, slight wandering, and, on the night of his death (April 3), wild delirium preceded the fatal issue.

*Autopsy*—Performed by Dr. Wyatt Johnston, April 4, 1897.

*Anatomical Diagnosis.*—Chronic putrid bronchitis and bronchiectasis with multiple dissecting pneumonia: great enlargement of bronchial glands; chronic catarrhal ulceration of larynx; cloudy swelling of kidney.

Somewhat emaciated young man.

Rigidity present in all parts; lividity slight.

*Abdomen.*—Well marked anæmic areas over surface of liver; organ shows some furrowing on the surface; veins lying at bottom of these furrows.

No evidence of gummata.

Microscopic examination of liver tissue shows nothing special.

*Spleen*—Large, rather soft, one accessory spleen size of a cherry.

*Kidneys*—Large, moderately injected, typical cloudy swelling, but little opacity on M. E.

*Intestines*—Show nothing special.

Stillate injection along rugæ of the stomach.

*Thorax.*—Universal adhesions of both sides.

*Left lung.*—650 grams, partly collapsed, on separation greatly injected; a few consolidated areas; bronchi much dilated, with thickened walls; foetid yellowish-brown contents.

At base some consolidation irregularly distributed, but always in the vicinity of the small pocket containing the grumous foetid material just mentioned. It is difficult to establish whether these pockets result from necrosis or bronchial dilatation.

Bronchial glands enlarged to size of walnuts, gray, succulent, soft and cedematous.

*Right lung.*—1820 grams, greatly enlarged, practically solid throughout, and very heavy; pleura adherent throughout; pleural surface studded with grayish yellow elevations resembling tubercles, but seem to be collections of yellowish pasty matter in minute cavities. Similar pockets filled with pasty matter are distributed through the lung, involving greater portion of the tissue. On washing the surface these stand out as small rounded sacs with shaggy inner walls, not showing granulation tissue or lining membrane, though often surrounded by firm, indurated areas.

On microscopic examination these spaces show no signs of tubercles, and are lined by altered, and to a large extent, necrotic epithelial cells, which are large and loaded with fat granules, and have a somewhat villous arrangement like hypertrophic epithelium in bronchiectatic cavities. The interior of the cavities consists almost entirely of cells; shows little or no elastic tissue. The intervening space between

the small cavities shows extreme consolidation, with thickening of the walls of the alveoli and some fibroid change. Contents of cavities show no tubercle bacilli.

Trachea and bronchi show a rough, reddened, thick mucosa.

Larynx at posterior angle shows two round ulcers with undermined areas. No sign of tubercle.

Bronchial glands unite, and form a mass as large as an apple, almost diffuent in places.

Microscopic examination of glands shows no cells except various leucocyte forms.

*Heart*—Valves reddened; coronaries free; substance healthy.

*Brain*—Vessels filled. Otherwise nothing special.

*Testes*, nothing special.

The course of the disease was thus a chronic bronchitis and bronchiectasis, terminating in foetid bronchitis and septic pneumonia. The relation of the onset of the disease to whooping-cough and measles could not be determined, as the patient was unable to fix the dates at which he suffered from these maladies.

The clinical resemblance to tubercular pneumonia was very close; the sweating, remitting temperature and prostration, the extensive spreading consolidation of the lungs, the ulceration of the vocal cords, are all features which are familiar in such a condition. The result of systematic examination of the sputum was, however strongly against such a conclusion and pointed to a non-tubercular consolidation.

## IRRITATIVE TRISMUS.<sup>1</sup>

BY  
J. ALEX. HUTCHISON, M.D.,

Surgeon to the Montreal General Hospital.

G. M., aged 23, was admitted to the Montreal General Hospital Dec. 28th, 1897, complaining of difficulty in opening the mouth.

*Personal History.*—When three years of age fell from an upper window and has had epileptic fits at intervals since. The fits have been much more severe and frequent during the last year, usually at night, and as many as three attacks in twenty-four hours. Had used liquor occasionally to excess. Nothing of importance in the family history.

*Present Illness.*—About twelve months ago, while eating breakfast a peculiar creaking sound was noticed on opening the jaw. He had suffered from several severe fits during the previous night. This condition was present on entrance to the hospital. In February of 1897 an abscess developed in the right cheek. At this time he was taken to the Verdun Hospital. Had great difficulty in taking solid food owing to the fixation of the jaw, and lived largely on milk. He is now able to separate the teeth about one inch, but each movement is with pain.

*Present Condition.*—Mental condition is fair, but has from one to three epileptic seizures a day. On examination of the mouth the condition as above described is noticed, with the partial dislocation or a slipping forward of the right fibro-cartilage. If the lower jaw is held firmly the mouth opens in a fairly normal manner and no sound can be heard, but the pain on moving still exists. There is a sinus leading down to the alveolus of the last molar on the affected side. There are a large number of badly decayed teeth. Ether was administered and Mr. J. S. Ibbotson removed a number of these teeth, after which I made a careful examination but could detect no abnormality about the articulation on either side; the lower jaw could be freely moved. The following day the patient was able to open his mouth in a natural manner without pain and without noise, and continued to do so for a week when, on coming out of the bathroom, he was taken with a seizure, and when he awoke the old condition had returned. He complains of some spicules of bone or portions of teeth causing great pain. I propose administering ether again with a view to removing these.

Notes from the case report of Dr. Chas. Gurd.

---

<sup>1</sup> Read before the Montreal Medico-Chirurgical Society, January 21st, 1898.

## APPENDICITIS IN A CHILD.<sup>1</sup>

BY

J. ALEX. HUTCHISON, M.D.,

Surgeon to the Montreal General Hospital.

S. P., aged 2 years and 6 months, was admitted to the Montreal General Hospital, July 3rd, 1897, suffering from acute appendicitis. Two days before admittance the mother noticed that the child appeared to be suffering acute pain, would suddenly stop playing and begin to cry. There was some vomiting and diarrhoea. This continued, and on the third day the child was seen by Dr. Geo. Berwick, who diagnosed the condition and advised operation. I examined the patient in the evening, and in the absence of any immediate symptoms of danger I postponed operation till the following morning. At the operation a gangrenous appendix with a large perforation at the distal extremity was found in a large cavity well walled in, which was full of pus and involved the pelvis. After excising the diseased tissues and wiping out the cavity, it was packed with iodoform gauze and a large tube was placed in the wound. After operation for a time the patient had a high temperature and considerable abdominal distension. The following day the general condition was improved. Dr. Elder, in my absence, under chloroform, returned a hernia of the intestine through the incision, partially closed my wound, and carried in a rubber tube through a posterior opening. The case made an uninterrupted recovery from this time. So far as I have been able to learn, this is the youngest case successfully operated upon with recovery, and for this reason consider it worthy of bringing to your notice. In addition, it is not generally thought that children of this age suffer from this condition, one which could be easily overlooked without a careful abdominal examination. I can recall one case of a child, not very much older, who died some years ago of general peritonitis. His case was under my observation from the beginning of the attack, and I was aided by the advice of the late Dr. R. P. Howard, but I allowed the child to die without further treatment than the use of opium.

Notes from the case report of Dr. F. R. Wainwright.

---

<sup>1</sup> Read before the Montreal Medico-Chirurgical Society, January 21st, 1898.

# RETROSPECT OF CURRENT LITERATURE.

---

## Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

---

### **The Serum Treatment of Syphilis.**

*La Semaine Medicale*, April and June, 1895.

*British Medical Journal*, June, 1895.

*Lancet*, 1895.

*Journal of Cutaneous and Genito-Urinary Diseases*, 1895.

During the past seven years not a few observers have directed their attention to the treatment of syphilis by the use of blood serum. While syphilis is curable in the ordinary sense of the word, in a large majority of cases, by the intelligent use of the mercurial and iodine treatment, there yet remains a certain number which resist the best directed attempts at cure by the ordinary means. The fact that such cases occur lends considerable interest to any new method by which they might be combatted.

The first attempts of the kind were made in 1891 in Prof. Fournier's wards in the St. Louis Hospital in Paris, dog serum being employed for the purpose. Several investigators soon afterwards repeated the experiments made in Paris, and the same result was practically obtained in all, viz:—improvement in the general strength, diminution of anæmia, and a more rapid amelioration in the specific lesions.

After having tested the value of dog's serum in tuberculosis, Feulard turned his attention to its use in syphilis. He found that its beneficial action was shown principally in an increase in weight and in its general tonic action on the system. In one case in particular where the usual remedies had proved quite ineffectual, when administered in conjunction with doses of serum, a rapid and complete cure followed. He advises the use of a solution of bichloride of mercury



in serum (1-2000), from one to four drachms being given at a dose. The administration of serum in addition to ordinary specific treatment proved of great service in two cases reported by Richet and Héricourt. The first was that of a woman infected ten years previously by her husband and who showed signs of beginning locomotor ataxia. She suffered particularly from lightning pains. Specific treatment had had absolutely no effect upon her condition, but after three injections of medicated dog's serum (6 cc. at a time) considerable improvement set in with disappearance of the pain. The second case was that of a young woman who had numerous specific ulcers upon her limbs which had resisted ordinary treatment. Daily injection for one week of from 1 cc. to 3 cc. of prepared serum practically effected a cure. The patient also gained in flesh and lost her anæmia.

C. Pellizzari adopted another procedure in his investigations. He injected serum taken from syphilitics in the tertiary stage into those suffering from primary or secondary syphilis. Theoretically, such a method would have much to recommend it, but in practice it did not prove a success. He treated a large number of patients in this way, and although for a time the manifestations of the disease appeared to be lessened, the subsequent course of the syphilis was not materially altered.

Richet and Héricourt, Gilbert and Fournier, have further extended their investigations to the artificial immunization of some of the lower animals. They were immunized by being given injections of serum obtained from patients in the second stage of the disease. The first case was that of a woman with persistent ulcerating gummata. Injections of 12 cc. of serum obtained from an immunized dog were soon followed by cure, which however did not persist, the gummata again ulcerating. The second case presented the symptom of locomotor ataxia, the woman having been syphilitic for some twenty years. The patient received 6 cc. of immunized serum within a week and as a result, the nocturnal headache, gastralgia, vomiting and lightning pains disappeared. In the third case, the cure of three ulcerating gummata which had resisted ordinary treatment occurred within four weeks.

Gilbert and Fournier have conducted an extensive series of investigations in the immunization of the lower animals. In a first series of animals, they injected blood taken from a patient suffering from secondary syphilis; in the second series, a she goat was inoculated within two months with nine syphilitic chancres, and in the third series, a dog was inoculated with four chancres, two papules and 120 grams of blood. The effects of either substance appeared to be about

the same, for both success and failure attended the employment of all three kinds of serum indifferently.

The patients treated were divided into two groups ; those who had been or who were being treated in the usual manner and those who had not been subjected to treatment of any kind. In the first group, the injection appeared to have a beneficial effect, particularly in two cases (out of seven) where a most marked and rapid improvement set in. In the second group, some patients were benefitted, others apparently being unaffected. In all, ten cases were treated by injection, and of these, five derived considerable benefit from the use of the serum.

It is difficult to appreciate how much the serum of the animals treated by inoculation was made more curative, since previous investigations have demonstrated the beneficial effect of the unmedicated serum.

Other methods based more or less upon the same lines as those already mentioned have been tried by different observers, and with varying results. So far as serum therapy is concerned, investigators are confronted at the outset with the difficulty of our ignorance concerning the pathogenic micro-organism of the disease and its method of cultivation. The occurrence of cases of a malignant type, however, those which resist medication, will lend an interest to any new method of staying their progress.

*E. J. Semple.*

# Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

## On the Treatment of Whooping Cough.

THEODOR F. "Die Behandlung der Keuchheusten."—*Archiv für Kinderheilkunde*, Bd. xxiii, 4-5.

DOLAN, THOMAS M. "Pertussis,"—*Pediatrics*, January 1st, 1898.

Both these writers consider that in the treatment of this troublesome affection we can accomplish little more than palliation of the symptoms. Theodor, after trying all the vaunted specifics, has gone back to his old way of treating the disease, and employs for children under a year old, antipyrin; for those between one and two years old, bromoform; while for older children he prescribes the wearing of a mask wet with a ten or twenty per cent. solution of carbolic acid. Careful hygiene he considers to be of the first importance, and he endeavours to secure for his patients pure air and a warm liquid diet. So long as there is any catarrh he does not permit children to be taken out of doors, unless the weather is warm and pleasant.

Dolan still recommends as of much service in shortening the spasms and rendering them less frequent, bromide of potassium and belladonna, which, although he does not specifically say so, may with advantage be combined in one mixture.

Dr. Marfau very strongly urges the value of bromoform, and employs the following formula :

R	Bromoform . . . . .	gtt. xlviij	gt xlviij
	Ol. Amygdalæ Dule	grm. 20.	ʒv.
	Pulv. Tragacanthæ	2.	ʒss.
	Pulv. Acaciæ . . . . .	4.	ʒj.
	Aquæ	ad 120.	ʒiv.

Mix first the bromoform and oil, and then add the other ingredients. A coffeespoonful contains two drops of bromoform. For children under five years of age he prescribes as a dose one drop for each year of age, which should be given three or four times a day. This dose may be gradually increased until it is doubled.

Tussol, a derivation of antipyrine, has been strongly recommended by Röthschild. (*Deut. Medwoch*, Nov., 1896.) He states that in patients who were treated with this only from the outset, the dura-

tion of the disease was notably shortened, and its whole course rendered milder.

Inhalations in many forms have been tried by various experimenters. Hirschfield and Monti were among the earliest to use carbolic acid in a 1 to 2 per cent. solution in the form of a finely divided spray over the mucous membrane of the throat ; both reported successful results.

Mohn, of Christiania, some years ago strongly recommended sulphur vapour inhalations as cutting short the disease in eight to fourteen days. His plan of treatment was to burn 25 grammes of sulphur (6 ounces) in the bedroom of the patient securing the presence at the same time of a certain amount of steam. The sulphur vapour was allowed to remain in the room five or six hours with doors and windows closed. Afterwards the doors were opened until the air within became respirable, when the child was brought back to the apartment and allowed to sleep in it over the night. Two or three repetitions of this treatment was said to cure the disease. Used with care we have thought that we have seen good results follow this procedure.

More recently Raubitschek has urged the therapeutical value of painting with a sublimate lotion (1 in 1,000) around the epiglottis, uvula, tonsils, and palate. In a recent epidemic at Naples, Prof. Fede employed this treatment, and recommends it strongly, saying that the pertussis disappears almost after the first application. Others unfortunately report that no appreciable benefit was derived from carefully made applications.

Of drugs for internal use, which may act antiseptically, unquestionably quinine takes the first place. It should be given in somewhat full doses, and best in the form of a dry powder, the taste of which may be modified either with chocolate or liquorice. Enquinine, a new substitute for quinine, has been used lately with distinct success. Speaking generally, we feel that in the way of arresting the growth and activity of any forms of bacteria in the human body, there is little to be hoped from the internal administration of germicidal drugs.

Richet's experiments on this subject are of much interest to the physician. He sought to determine the quantity of an antiseptic necessary to arrest the growth of bacteria in a litre of sea water containing 10 per cent. of urine and .1 per cent. of peptone. He found the amount of any antiseptic required was much greater than that which sufficed to kill fish. We must consider, therefore, that the therapeutic value of any antiseptic when given internally in this

affection, lies in its action on the stomach, relieving the catarrhal condition so frequently present in pertussis.

O'DONOVAN, CHARLES. "The Use of Manganese in the treatment of Dysmenorrhœa."—*The Medical News*, November 27th, 1897.

The writer states that since writing his first article (*Medical News*, April 6th, 1889) on the value of manganese in this complaint, he has had many additional proofs of its value. At that time the observation of Ringer and Murrell, of London, called attention to the benefit to be derived from the preparations of manganese in disorders of menstruation. Other clinicians at that time also testified in its favour, but after enjoying a certain vogue, it seems in the avalanche of new remedies which are constantly being exploited, to have been forgotten. Dr. O'Donovan writes that since that date he has continued to use it in cases which he considered suitable, and while it will not relieve all, in many it does act very favourably. The cases which appear in his opinion to receive most benefit from this drug, are unmarried women in whom there is a history of general malaise for some time before the flow begins, with pain which rapidly grows worse as the flow commences, and remains more or less severe during the first day. The question as to whether anæmia is present or not appears to have little bearing on the action of the drug. In several instances he says that he has found dysmenorrhœa of several years' standing to yield under this treatment; unfortunately in others the remedy was of little service, and he is unable to state why it should succeed so well in some and fail with others, but he is certain that a considerable number of cases may by its use be relieved to a degree that no other drug can approach. In his paper he gives detailed reports of several cases. He recommends its administration in pill form, beginning with one grain three times a day and gradually increasing the quantity till three grains three times daily are taken. The drug should be commenced about the middle of the inter-menstrual period and continued till after menstruation for that period had ceased. This treatment should be continued for three or four months at least before the judgment of failure is pronounced.

#### Therapeutic Items.

*On the Value and Danger of Cantharides.* Editorial in *Therapeutic Gazette*, May 15th, 1897.—The writer says of this drug that while possessing power for good, injurious effects may be produced by its injudicious employment. Personally he is convinced that the internal use of cantharides is resorted to too infrequently, since in quite a large number of cases he has seen beneficial results follow its employment in small

doses in chronic or even subacute parenchymatous nephritis. Quite recently Du Cazal in one of the French journals has strongly supported this use of cautharides, following the recommendations of Lancereaux. Saundby, on the other hand, states that some years ago he has tried cantharides systematically in cases of nephritis, and came to the conclusion that it exercised no specific effect in controlling the excretion of albumen. The danger of deleterious effects resulting from the employment of cantharides externally was illustrated by a case reported by Huchard, of Paris, in which a violent acute nephritis with anasarca, intense dyspnoea and convulsions were produced by the application of a small cantharidal plaster to the epigastrium. A physician should remember that blisters of size should not be employed in the presence of renal inflammation, and should in no event be allowed to remain in contact with the skin longer than is necessary.

*On the Modern Neglect of Leeching in Practice*, Sir Dyce Duckworth in *Liverpool Medico-Chirurgical Journal*, January, 1897.—The writer complains that medicine is now suffering from a neglect of bedside study for laboratory instruction. Few practitioners are now aware of the value of the practice of leeching, and pharmacists at the present hardly think it worth while to keep leeches on hand. The common view is that local blood-letting is generally unnecessary, and can be dispensed with in favour of some analgesic or antipyretic tabloid form of drug; furthermore, bleeding is regarded as a lowering and devitalizing process, which has little or no power in modifying inflammatory conditions as explained by the modern laboratory pathologist. Familiarity with local blood-letting enables the writer to say that for the sharp pain which ushers in acute pleurisy, pericarditis and peritonitis from any cause, there is no remedy so certain to afford prompt relief as local leeching. Opium may thus be withheld, and other symptoms allowed to declare themselves without the masking effects of this drug. In cases of cardiac dilatation in an advanced stage, with hepatic and general venous engorgement, inducing respiratory distress, the application of half a dozen leeches to the epigastrium is often of singular benefit, bringing prompt relief sooner than any other mode of treatment he is acquainted with.

*On the Value of Antipyrin in Labour*.—In an editorial in the *Therapeutic Gazette*, November, 1897, the writer states that although antipyrin can under no circumstances supplant the ordinary anæsthetics, and is a useless remedy in the pains of a perfectly normal labour, yet it may prove of much service in those cases where the pains are so excessive as to reflexly interfere with proper uterine contraction. It is also indicated in those cases where the liquor amnii has been discharged too early, and there is rigidity of the os. Antipyrin is useless in the second stage of labour, but appears to be of distinct value in the relief of troublesome after-pains. It is stated that antipyrin may also be used with some success in quieting a tendency to the development of pains before the full term has been reached.

*The Internal Treatment of Renal Calculi*, Mendelsohn in *Berliner Khuische Wochenschrift*, November 14th, 1897.—If one considers how insoluble uric acid is, how largely diluted by the fluids of the body any drug taken internally necessarily becomes, and what a small surface is presented by the calculus to the action of the solvent, medical treatment would appear to be unavailing except in so far as it is preventive. Purely dietetic treatment is insufficient. The alkaline treatment is of service in some cases but not in all, since the acidity of the urine is not always

increased, and there remains always the danger of rendering the urine alkaline, and thus precipitating the phosphates. Ebstein has shown that the basis of formation of renal calculi is an albumin-like substance upon which the salts are deposited. Moritz and the author have further shown that this substance is a component of normal urine, and only stagnation is necessary for the formation of calculi. Mendelsohn therefore recommends as the most rational treatment the use of alkalies in those cases where they are specially indicated, exercising due care as to the amount taken, together with the free drinking of liquids, thus inducing copious diuresis, and in this way flushing out the upper urinary passages and carrying off any minute calculi that might give rise to future trouble.

*A. D. Blackader.*

## Reviews and Notices of Books.

### "Osler, mit etwas Anders."

**A Text-book of the Practice of Medicine.** By J. M. ANDERS, M.D., Ph.D., Professor of Clinical Medicine, etc., in the Medico-Chirurgical College, Philadelphia. W. B. Saunders, 1897.

While perhaps under many conditions imitation is the sincerest flattery, it is doubtful that this adage will apply to those engaged in literary pursuits.

The plan of the work above mentioned is precisely that of Dr. Osler's classical text-book, and the manner in which the various subjects are dealt with bears such a striking similarity to it that we are readily convinced of the truth of Dr. Anders' statement in the preface, viz. : that he has "gleaned without stint from medical literature." The medical literature referred to, evidently concerns mainly the volume just mentioned, and very little attempt is made to conceal the wholesale "gleaning" of paragraph and sentence without really much alteration of style or wording.

For example, the following extract from the two works is a fair instance of our meaning :

*Osler, Diphtheria, p. 106.* Local complications, hæmorrhage from the nose or throat may occur in the severe ulcerative cases.

Skin rashes are not infrequent, particularly the diffuse erythema.

Occasionally there is urticaria, and in the severe cases purpura.

*Anders, Diphtheria, p. 186.* Local complications may be mentioned, as when we have hæmorrhage from the nose and throat in the more severe ulcerative cases.

Skin rashes are not unusual, especially the diffuse erythema.

Sometimes urticaria will be noticed, and in very severe cases purpura will mark the skin.

Dr. Osler's characteristically concise style is, however, in marked contrast to the other author's diffuseness.

Some minor differences between the classifications of the diseases are worthy of mention, such as the assignment of acute and subacute rheumatism to a place among the infectious diseases, while lobar pneumonia is removed from the chapter on diseases of the respiratory system and classed among the infectious diseases. This is, of course, largely a matter of taste, though to be consistent the author might be expected to place in the same category such affections as purulent pericarditis, abscess of the liver, etc. Doubtless it would have been better to leave the classification as in Osler.

Dr. Anders' work may be in many respects up to date so far as the information and classification are concerned, but the lack of originality cannot fail to draw down the rancour of those who regard intellectual honesty as of supreme moment in literature.

C. F. M.



**Spinal Caries** (Spondylitis or Pott's Disease of the Spinal Column). By NOBLE SMITH, F.R.C.S., Ed., L.R.C.P., Lond. Surgeon to the City Orthopædic Hospital; Surgeon to All Saints Children's Hospital; Orthopædic Surgeon to the British Home for Incurables. Second Edition. London: Smith, Elder & Co. 1897.

Any work drawing the attention of the profession to this important subject is worthy of attention, more especially when the earliest indication of the commencement of the disease is clearly pointed out and emphasized, and the differential diagnosis, carefully set forth, as it is in the work of Mr. Noble Smith. In the first four chapters the development of the deformity, and the symptoms and diagnosis from the other diseases of the spinal column which may simulate spinal caries, illustrated by clear plates and the report of cases, are carefully and fully described.

The remaining chapters, four in number, deal with the treatment of the disease and the complications that may arise.

Simple confinement to bed is regarded as very ineffectual. Every movement of the extremities is liable to cause some motion in the spine when the patient is strapped to the bed. When, in other words, the bed is made to act as a splint as well, the position is irksome and its use for any prolonged period well nigh impossible, especially among the poorer classes. Apparatus is recommended instead of confinement to bed, and the different forms of mechanical appliances suitable to the seat of the disease is described and illustrated.

Gentle extension of the spine is recommended to the extent that relieves pain and makes the patient more comfortable. Forced extension is not commended. Mr. Smith argues that his "adaptable metal splint" accomplishes this object much better than plaster of paris. With this "adaptable metal splint" applied, the patient should be kept in bed during the acute stage of the disease, and the prone position is strongly advised.

Operative treatment is discussed. Laminectomy is advised in suitable cases.

The treatment of abscess in different situations is dealt with in a moderately conservative manner. It is advised that post-pharyngeal abscesses be always opened behind the sterno-mastoid, with which advice all surgeons will agree.

The nursing, clothing and diet receive the full attention that they deserve.

G. E. A.

**Medical and Surgical Gynæcology.** By W. A. GARRETT, M.A., M.D., Professor of Obstetrics and Gynæcology at Queen's University, Kingston, Ont., and Gynæcologist to the Kingston General Hospital. Pp. 419. J. A. Carveth & Co., Toronto.

The author states in the preface that the book is specially intended as an aid to students, so that they will not require to take notes. As such, the book is undoubtedly of value, and that part of the introduction which

is devoted to the care of the girl who is approaching puberty deserves especial notice. The description of the development of the foetus and ovum might be more fully entered into with advantage, and the rectum and perineum are not enumerated among the structures which support the uterus, but this is a question upon which, strange to say, authorities differ. Another omission is that of formalin in the description of the various antiseptics used for sterilizing the hands of the operator, etc., yet it is undoubtedly one of the most valuable antiseptic agents which we possess. The articles upon "examination in general," and plastic vaginal work are excellent, the latter being very clearly described and well illustrated with diagrams. As a rule the plates are well executed and correct, but there is one serious error, serious chiefly because the book is for students. Two plates are given to show the difference in the areas of dullness in ascites and ovarian cystic tumours. The plate with the dullness in the centre and to one side is marked "ascites," and that with a clear note around the umbilicus with dullness in the flanks is designated "ovarian tumour," which is exactly the opposite of what they should be. This mistake is probably a printer's error and will be corrected in the next edition, but one should be very careful about such things in publishing a book from which men will probably imbibe their first knowledge of a subject.

F. L.

**Transactions of the American Surgical Association.** Volume the Fifteenth. Edited by DEFOREST WILLARD, A.M., M.D., Ph.D., Recorder of the Association. Philadelphia: Wm. J. Dornan. 1897.

This volume of Transactions contains the papers read before the Association at the meeting held May 4, 5, and 6, 1897. The papers and discussions of such a body of leading surgeons cannot fail to be of great interest, not only to surgeons, but to physicians and general practitioners. The present volume is handsomely gotten up and the illustrations are clear.

The report of the committee on necrology contains brief, but interesting, histories of the lives of Sir Thomas Spencer Wells, F.R.C.S., Sir John Eric Ericksen, Bart., F.R.S., LL.D., Sir George Murray Humphrey, M.D., Cantab., LL.D., Edin., Sc.D., F.R.C.S., Eng., F.R.S., Willard Hunt, M.D., William H. Pancoast, M.D., Perry H. Millard, M.D., and J. Edwin Michael, M.D.

The Gross Statue is very clearly shown, its history given, as well as the address on the unveiling of the statue by Dr. Mastin. The address on receiving the statue by Dr. Sternberg, and a most able and inspiring address by Dr. Keen, of Philadelphia are also recorded.

The history of the influence of anæsthesia on surgery is written by J. Collins Warren, M.D., LL.D.

All the succeeding papers are of great interest as representing the latest thought and work upon the subjects treated, and this interest is enhanced

by the views of the other members of the association which are reported in the discussions.

The Use of Roentgen Rays in Surgery is dealt with very fully by J. William White. He shows that skiagraphy has added to the definiteness and precision of our management of many forms of disease of the bones and joints, and it is rapidly coming to be of as great or even greater service to physicians.

Dr. McLane Tiffany writes the paper on the Technique of Intracranial Surgery, dealing fully with the questions of "preparation of the patient," "the best way of gaining access to the brain," "the arrest of hæmorrhage," "the anæsthetic to be used," "the removal of intracranial sutures," and "the closure of the wound and dressings."

Dr. Parkhill, of Denver, read a paper, the subject of which was A New Apparatus for the Fixation of Bones after Resection and in Fractures with a Tendency to Displacement, with report of cases. He illustrates his apparatus by clear cuts.

In a paper on Removal of Stone in the Bladder, Dr. Forbes, of Philadelphia, makes very clear the advantage of litholopaxy over either suprapubic or lateral lithotomy. He quotes Surgeon P. J. Freyer, of the Bengal Army, India, who states that in the government hospitals of Punjab and Bombay alone, there were 7,694 litholopaxies performed on patients of all ages in four years (1891-94) with 255 deaths, or a mortality of 3.45 per cent.

A most exhaustive paper on the Surgical Treatment of Congenital Anorectal Imperfection is by Dr. Metas, of New Orleans.

Dr. Dudley P. Allen, contributes a paper on the Origin of Appendicitis, which is a description of the changes that, in many cases at least, precede a severe attack, emphasizing flexure of the appendix, stricture and thickening of the walls.

This is altogether a most interesting and instructive volume. G. E. A.

**Ringworm and Alopecia Areata.—Their Pathology, Diagnosis and Treatment.** By H. ALDERSMITH, M.B., Lond., F.R.C.S., Medical Officer, Christ's Hospital, London. Fourth edition, enlarged and rewritten, with new illustrations, pp. 327. London: H. K. Lewis, 136 Gower St., W. C., 1897.

The first chapter deals with the pathology of ringworm. The illustrations are good and the different varieties of this exceedingly troublesome disease are clearly pointed out, together with their relative frequency.

The manner of extracting and preparing the hair for diagnosis is very fully and plainly described.

The question as to the time when the disease may be certified as cured and the patient allowed to return to school is discussed, and the landmarks pointed out in a distinct and definite manner. This is a matter of very great importance. The disease occurs so often among children, it is so

contagious, and its presence so interferes with the education, that any light thrown on the question is of value. The author handles this question in a broad spirit and lays down definite rules that should be followed by all family physicians.

Unfortunately the treatment of this obstinate condition has not advanced as rapidly as the pathology. Of the many new remedies advanced during the past few years, none have come up to the expectations of therapeutists, and in the words of Crocker "the disease is yet the opprobrium of dermatologists." Nevertheless, the author lays down a thorough system for treating these cases which, if persevered in, will result in a cure, although not as rapidly as one might hope.

The chapter on alopecia areata reviews the discussion of late years as to the pathology, and the arguments in favour of the parasitic and neurotic origin are carefully compared. The treatment also is fully given.

Altogether the book is well up to date, is very readable, and can be very highly commended.

**International Clinics.** A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, &c., &c. Edited by JUDSON DALAND, M.D., Philadelphia; J. MITCHELL BRUCE, M.D., London; and DAVID W. FINLAY, M.D., Aberdeen. Volume III. Seventh series, 1897. Philadelphia: J. B. Lippincott Company. 1897.

This volume, in the main, is quite up to the high standard attained in the previous numbers. Among the thirty-seven clinical lectures contained, the following may be mentioned as specially worthy of note. A lecture by J. F. W. Ross, of Toronto, on the Surgical Treatment of Gall-Stones, and illustrated with five coloured plates, which greatly aid the reader in understanding the points brought out in the paper. Dr. Wm. H. Porter, of New York, reports the first case of Bilharzia Hæmatobia seen in America, the nature of the parasite having been recognised by Dr. Henry T. Brooks.

Other well written articles are: Practical points in the diagnosis of Inherited Syphilis in Infancy and Earliest Childhood, by Arthur E. Sansom, Congenital Defect of the Heart and other parts, by Francis Warner; and Bleeding in Pregnancy and Labour, by Freeland Barbour.

**Text-Book of Diseases of Women.** By CHARLES B. PENROSE, M. D., Ph. D. Pp. 529. Published by W. B. Saunders, of Philadelphia.

Professor Penrose has written this book not only for the use of students but also for the general practitioner, and has succeeded in producing a work which will be of service to both. It is clearly and well written, and is quite up to date. The illustrations also are very good. No mention is made of "deciduoma malignum," but no one will quarrel with the writer for the omission from a text-book of a disease about the existence

of which as a special form of sarcoma there is still so much doubt. Taking it altogether, the book can be recommended to those for whom it is intended.

F. L.

**Simon's Clinical Diagnosis**, New (2nd) Edition, Revised and Enlarged. A Manual of Clinical Diagnosis by Microscopical and Chemical Methods. For Students, Hospital Physicians and Practitioners. By CHARLES E. SIMON, M. D., Late Assistant Resident Physician Johns Hopkins Hospital, Baltimore. In one very handsome octavo volume of 530 pages, with 135 engravings and 14 full-page colored plates. Cloth, \$3.50.

Only a short time ago we reviewed in terms of high commendation the first edition of this very practical work. In the present edition the articles on the blood, saliva, feces, urine, and vaginal discharge have been to a great extent re-written. New methods of chemical examination have replaced older and more complicated ones, and throughout the text numerous additions have been made, increasing the size of the volume by about fifty pages. The author very truly says that no physician can make a scientific diagnosis, of diseases of stomach intestines, kidneys or liver, and treat them in a rational manner without some laboratory facilities. We know of no work in which the practical information required for such minute examination is given in such a clear and detailed manner. To our advanced students we cordially recommend the work, as one presenting modern laboratory methods not only with much thoroughness and exactness, but in a very interesting way, as far as possible pointing out the reasons which have led up to the conclusions reached. The work is unusually well illustrated.

**Diseases of the Eye.** By EDWARD NETTLESHIP, F. R. C. S., Ophthalmic Surgeon at St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfields) Ophthalmic Hospital. Revised and edited by W. T. Holmes Spicer, M. A., M. B., F. R. C. S., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children. Fifth American from the sixth English edition. With a supplement on Colour Blindness by William Thomson, M. D., Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. Handsome 12mo. of 521 pages, with 2 colored plates and 161 engravings. Cloth, \$2.25. Lea Brothers & Co., Publishers, Philadelphia and New York. 1897.

This new edition of a well-known text-book calls for few remarks from us. Its merits have been recognized both by students in ophthalmology, and by busy practitioners, who have found within its pages the needed information clearly and succinctly stated. We have much pleasure in stating that the present revision has been thorough. We regard it as one of the best of our smaller text-books on this very important subject.

A. D. B.

**A Text-Book of Practical Therapeutics**, with special reference to the Application of Remedial Measures to Disease, and their employment upon a Rational Basis. By HOBART A. HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc., etc. Sixth Edition. Enlarged and thoroughly revised. Lea Brothers & Co., Philadelphia and New York. 1897.

We have much pleasure in calling attention to a new edition of this practical text-book on therapeutics. A very considerable portion of the present edition has been rewritten. in order to render all the statements in the text clear and concise, while embodying the latest views on this subject. Measures which after experience have not proved useful and reliable, have been excluded. The rapid exhaustion of the last edition is evidence of the high estimation in which this text-book is held.

THE

# Montreal Medical Journal.

*A Monthly Record of the Progress of Medical and Surgical Science.*

---

VOL. XXVII.

FEBRUARY, 1898.

No. 2.

---

## THE BOARD OF HEALTH OF THE PROVINCE OF QUEBEC.

The publication of the third annual report of the Provincial Board of Health affords an opportunity to call attention to the excellent work that is now being done by Dr. E. P. Lachapelle and his small but energetic and able staff of workers. Few even in our own profession realize the amount of good work that is being done by them or the difficulties which they have successfully overcome. It is only, if we remember aright, four years ago since the President of the Board obtained authority to prepare tables of the vital statistics of the Province. For the collection of those vital statistics, the President undertook that for the first year there should be no expense to the Government beyond the few hundred dollars necessary to pay the statistician. There was no system of official registrars of the various parts of the province, and the President himself had to journey round to interest the Bishops of the various Sees in the work, and through them to obtain the gratuitous services of the parish priests throughout the province. Thanks to this episcopal aid, the statistics from all the wholly French portions, if somewhat slow in coming to hand, are nevertheless conscientiously prepared and are singularly accurate so far as regards the mere facts of birth, marriage and death, and to the parish priests, in their capacity of unpaid registrars, the fullest praise must be given. With reference to causes of death, the statistics are, as might be expected, in very scattered rural districts, far from perfect. Thus we notice in this last report that in one country district, the county of Charlevoix, of 406 deaths, 228 were from "unknown or unspecified" diseases!

When we come to the more Protestant portions and to regions where there is a mixed population, the statistics become imperfect. The parochial districts of the different sects do not correspond, hence it is difficult to be sure (more especially in the cases of the

Protestants in the larger towns), that births, marriages and deaths are fully registered. Indeed, in connection with the births in some of the sects, a further difficulty is involved, that it is not the births, but the baptisms that are registered, thus occasionally aged people newly baptised, are to be found among the newly born. Nevertheless, with great expenditure of disinterested labour, Dr. Lachapelle established the statistical department upon such good footing that the Government has been continually encouraged to aid forward the work. Add to this, that in the re-organisation of the board, Dr. Lachapelle has developed bacteriological and chemical departments, and herein has notably advanced the condition of affairs in the Province. It is no idle boast to say that during the last year the work of Dr. Wyatt Johnston upon dry blood-drop diagnosis of typhoid has brought the board of health of our province into the favourable notice of the whole civilised world. It is wonderful to think that all this good sound work upon demography and vital statistics, on prevention of disease, diagnosis of typhoid, diphtheria and tuberculosis for the whole province for the year '96-'97 has been accomplished for the remarkably small total of 10,500 dollars. It almost looks as though there was an inverse ratio between the stipends afforded to public servants and the value of the work done by them.

Dr. Elzéar Pelletier's report is full of interest. We would call attention to some few of the facts brought out in it and in the other articles scattered through the volume. The number (10,381) of cases of contagious diseases notified (smallpox, diphtheria, scarlet fever, typhoid fever and measles) is altogether in excess of what ought to be in this sparsely populated province. Of these cases 5,322 were from measles and 3,564 from diphtheria. With Dr. Pelletier, we would urge that there be a gratuitous supply of diphtheria antitoxin throughout the province. The ravages of measles with over 5,000 cases, as compared with only 736 due to scarlet fever, is very remarkable. It is evident that something must be done to bring this condition of affairs to an end; that municipal authorities and heads of families must not neglect to isolate and disinfect. Isolation will arrest the spread of measles, whatever be the popular disbelief in the efficacy of stamping out disease. With regard to disinfection, Dr. Pelletier points out that here there is frequent danger of disinfection being asked for too soon, and, as a result, the convalescing patient reinfects the dwelling. He gives a useful table of the periods during which the patients can communicate the various infections and of the periods of incubation, i. e., the time during which individuals who have come into contact with cases of infectious disease must be regarded as under suspicion. This table we would call to the notice of the



general practitioner, for the facts which it embodies are too little known and acted upon.

With reference to the gratuitous diagnostic service for typhoid fever, which this board was the first sanitary body to offer to the public, it is interesting to note that the total number of blood samples examined so far by Wyatt Johnston's method has been close upon 1,000. Positive results have been obtained in over 90 per cent. of all cases of typhoid. So far Johnston notes that he has not met with a clear and well marked reactions apart from typhoid fever. In about 0.5 to 1.0 per cent. of genuine typhoid cases the reaction is apparently absent, and in from 3 to 4 per cent. it is delayed, and only shows itself at the end of the first week, or disappears early in convalescence. The value of the dried-blood method is shown by the fact that some samples which gave satisfactory tests reached the laboratory from the north shore of the St. Lawrence in mid-winter, taking a week or more on the journey.

We would refer those interested in the subject to Dr. Johnston's record of his studies upon Formaldehyde as a disinfecting medium, and upon the testing of the relative value of methods of disinfection.

Dr. Ruttan (the Chemist to the Board) presents a valuable report embodying the weekly analysis of the Montreal water supply during 1895, 1896 and 1897.

Although appearances are against it, Montreal is to be congratulated upon the purity of its water supply, save for one short annual period.

The brown colour and the amount of sediment during the spring and summer indicate Ottawa water and peaty collecting grounds. In winter, the greater cold in the north largely arrests the flow of the Ottawa, and the supply, obtained close to the junction of the two rivers, is consequently from the St. Lawrence, and is colourless. Now, both Ottawa and St. Lawrence waters are singularly free from bacteria which give evidence of contamination by dejecta. There is, however, a period in April when apparently thaws and floods bring an abundance of surface water into the Ottawa, and the turbidity and carbonaceous organic matter (indicated by oxygen absorption), increase by leaps and bounds. At this period the water is certainly contaminated, and for three weeks or so in the spring it is assuredly wholly unfit for general distribution as a potable water.

We thus cordially re-echo the Chemist's recommendation that, at least at this season of the year, some suitable filtering apparatus be provided.

The broad facts brought out by M. Roy, in his report upon vital statistics, are not a little remarkable. No civilised nation can rival this province in high birth rate as compared with low death rate.

The birth rate for 1896 was as high as 38.57 per 1,000 inhabitants; the death rate, 20.05, or, leaving out still births, 18.58 per 1,000. In other words, the births practically more than double the deaths.

We extract the following from the report :

	Birth Rate.	Death Rate.	Surplus Births Over Deaths.
England and Wales.....	30.4	18.7	11.7
Scotland.....	30.4	19.7	10.7
Ireland.....	23.2	18.4	4.8
Italy.....	35.1	25.2	9.9
Austria.....	38.6	27.6	11.0
Hungary.....	41.5	29.6	11.9
German Empire.....	36.1	22.2	13.9
France.....	21.9	22.3	-0.4
Quebec Province, 1895.....	<b>39.3</b>	<b>20.4</b>	<b>18.9</b>
Quebec Province, 1896.....	<b>38.5</b>	<b>18.5</b>	<b>20.0</b>

Thus Austria and Hungary have higher birth rates, Ireland a lower death rate, but deducting the one from the other, Quebec is far ahead of any large territory in the civilized world.

The comparison has often been made between the birth rate and rate of increase of population in old France and the new. M. Roy still further emphasises the difference by compiling a table of the 35 counties in Quebec having an almost exclusively French population.

Population.....	658,756
Births (1896).....	58,615
Deaths ".....	13,977
Birth-rate.....	<b>43.43</b>
Death-rate.....	<b>21.21</b>
Surplus of births over deaths per 1,000...	<b>22.22</b>

In other words, the French of Quebec are increasing in numbers at the yearly rate of 22.2 per 1000; the French in France are dwindling at the rate of 0.4 per 1000. At this rate it is questionable whether Quebec will not have to return the compliment and prepare to re-populate l'ancienne France!

## THE NINTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

The provisional programme of the Ninth International Congress of Hygiene and Demography has been issued. The meeting will be held in Madrid from the 10th to the 17th of April, 1898, and is under the patronage of His Majesty, King Alfonso XIII. and Her Majesty, the Queen Regent. Under the heading of "Hygiene" the following

different sections are announced: 1st, Microbiology in relation to hygiene; 2nd, Prophylaxis of transmissible diseases; 3rd, Medical climatology and topography; 4th, Urban hygiene; 5th, Hygiene of alimentation; 6th, Hygiene of infancy and of schools; 7th, Hygiene of exercise and labour; 8th, Military and naval hygiene; 9th, Veterinary hygiene—civil and military; 10th, Sanitary architecture and engineering.

Under the heading of "Demography": 1st, Technique of demographic statistics; 2nd, Statistical results in relation to demography; 3rd, Dynamical demography.

The organizing committee explain that delay in issuing the programme has been caused by the Government being fully occupied with the two colonial wars with which Spain is at present engaged. This is the first time that an assembly of such importance is to be held in Spain, and the organizing committee have secured the hearty co-operation of the Madrid authorities in the entertainment of their guests, to whom they hope to demonstrate, that in the care of public health they are in every way abreast of the age.

---

#### THE PHILADELPHIA MEDICAL JOURNAL.

We have received several numbers of the new weekly medical journal published in Philadelphia, under the editorial management of Dr. George M. Gould. Dr. Gould is universally known as an able and conscientious writer on all matters pertaining to our profession. He has had previous experience of editing a weekly journal, and will, we have no doubt, soon place the *Philadelphia Medical Journal* in the front rank of American medical weeklies. The new journal presents several new and important features. It is to be conducted solely in the interests of the profession, and as proof that this is no empty boast, we have only to mention that the price is only \$3.00 yearly, a very low figure for a weekly of forty-four pages. We are also promised a journal which will not advertise preparations of a secret nature. We hope that the editor will go a step further and refrain from publishing advertisements laudatory of preparations whose value is not only not proven, but cannot hope to be proven. A very useful feature is a brief synopsis of the leading articles of American English and Continental journals. In this way the busy practitioner can, at a glance, see what is being done elsewhere that is of importance to him, and if within access of a good medical library, he will be able to save much outlay in medical journals.

We wish the new enterprise the success its worthy and independent stand so justly merits.

## AN ADDRESS BY DR. DR. HERTER.

We have much pleasure in announcing that Dr. Herter, of New York, will deliver an address in the large hall of the Faculty of Medicine, McGill University, under the auspices of the Montreal Medico-Chirurgical Society, on the evening of March 4th. He has chosen for his subject "Uræmic Intoxication," with special reference to its pathology and treatment. Dr. Herter has given much study to the subject, and we feel confident that his address will prove very interesting. The profession generally are invited.

## Obituary

---

### ERNEST HART.

With Ernest Hart there has passed away one of the most uncommon characters in our profession during this century, a strong man whose influence has been felt throughout the whole English-speaking world. I say this advisedly. It was not merely our profession that felt his influence, but the general public, and that not merely in the old country, but in the British colonies and the United States. To the public, it is true, his name may not have been known—indeed, as has recently been pointed out—only a single New York daily paper troubled to give any notice concerning him when the news of his death was cabled to this side. But he it was who made the *British Medical Journal* an influence in moulding public opinion and directing legislation, and making it his duty to call attention more especially to matters of public health, and to direct aright the opinions of the profession and so of the populace, his opinions upon these matters were echoed everywhere. Through his exertions it was that the *British Medical Journal*, from being inconsiderable and unauthoritative, became the most widely read and most important organ of any profession throughout the civilized world. How he achieved this it was my good fortune to learn during the last summer from his own lips. It seems a simple means, but only a man of persuasive influence could have brought it around. Briefly, when any matter of professional or public interest came to the fore he obtained the expression of the recognized leading authority in that subject in an unsigned leading article. I should exceed my privileges were I to recount the names given to me by Mr. Hart—name after name of men of European reputation in their several departments who thus formed the subsidiary staff of the *Journal*, men who were glad to sink their personalities while enforcing their views. What other medical editor has ever collected around him such a staff as that he named to me. To these with a happy instinct he added the coming men among the younger workers.

With this power of gaining the aid of the strongest men and best writers he combined a remarkable business capacity. Only a man endowed with such could have directed the *Journal*. Herein, it is true, lay his weakness as well as his strength. The ideal always

before members of our profession is medicine for medicine's sake, apart from business advantage. We find it hard to appreciate any-one of our number in whom keen business instincts show themselves prominently. Had Ernest Hart been an ideal medical man he never could have brought his *Journal* to its present powerful position. Because he was not such there was always, it must be confessed, an undercurrent of doubt, not to say fear, about him and his methods—a feeling that the man who was the mouthpiece of our profession did not in himself truly represent our body—and this in some few passed to hostility. Characteristically he knew himself, and went his way despite the feeling. A strong man, he was prepared to make, and made enemies, but that same active business capacity rendered him absolutely essential not only to the *Journal*, but to the leaders of the profession in England, whenever any project bearing upon the interests of the profession had to be brought to a successful head. When we call to mind the many reforms he either initiated or was the means of accomplishing, it is a small matter and trivial, if, also, he ventured to have a pecuniary interest in sundry reforms, which, to be gained, necessitated the establishment of commercial undertakings—supply of pure milk, coffee taverns, pure aerated waters, and so on.

In my old university for long years one of the familiar figures was a snuffy oriental scholar, a Polish Jew, if I remember aright, with more than one sneeze in his name, stumpy and as broad as he was long, whose portentous paunch could be seen day after day on the road to or from the University Library, followed immediately by an armful of books on the one side, a faded gingham on the other. He was learned in the Torah and all the colossal casuistic literature of his religion: no one in England more learned; hence scholars came from all sides to consult him. Add to this that his piety was profound and notorious; he kept scrupulously all the fasts and all the feasts, and on the Sabbath would not so much as trim his lamp—and his lamp was always smoking,—but must call in some next-door Gentile to perform the office. So great was his known piety that the other oriental scholars of the university, simple, good men, were affected by it, albeit they were Gentiles. This I know, that when it was reported that being aggrieved he had cast his eye upon sundry of them, uttering appropriate Talmudic exorcisms, they were distinctly most uneasy, and, true it is, that one after another they sickened and died. Parenthetically it may be mentioned that he, also, died about the same time. I remember the brightest and best of these orientalists, himself a chronic invalid, destined to pass away a few months later, referring to the episode after the Talmudist's death, and expressing, half in jest, his

belief that now, assuredly, the exorcism must have worked off. "Yet," said he, "while — — might in his learning and piety exorcise us so that we sank and died, it is good to think that he could do no more; for in the Talmud it is stated that, whoever he be, he who has done good work in this life, has increased knowledge and benefited his kind, will be received into heaven, because heaven cannot afford to lose such an one."

Few, in our time, have accomplished so much as did Ernest Hart for his kind—for the ordinary every-day people throughout Great Britain. As a writer in the *British Medical Journal* remarks: "Mr. Hart brought his keen interest to bear on the glaring evils of the time, and by a persistent attack on one blot after another he let light into many of the dark corners of our social life. He had the not too common gift of seizing the most favorable opportunity for securing attention to glaring evils, and he had the tact and courage to persevere until the reforms he had in view were attained."

So long ago as 1856, when still a medical student, he, with Timothy Holmes, started a successful agitation to improve the position of junior naval surgeons. His first great work, begun in 1865, was on behalf of the sick poor in the London workhouses, just as one of his last was to expose the miserable condition of many provincial workhouse infirmaries. He it was who led the crusade which in two years caused the establishment by the Government of state hospitals and asylums for the sick pauper. He accomplished a much needed reform in the abolition of the barrack schools for pauper children. The commission which he and his paper appointed led to an exposure of the hideous evils of baby farming, and to the passage in 1872 of an act for the Protection of Infant Life. The influence of milk in spreading zymotic disease and the distribution of pure milk, water-borne disease and the best forms of filters, smoke abatement, vaccination, practical means of aiding temperance and the development of the coffee tavern system—these are but some of the movements in the development of which he was the means of accomplishing more than any of his contemporaries. Of a truth he did good work. Of slight build, active and nervous, he was all energy despite the diabetes, which for fifteen years had relentlessly undermined his constitution. It was a touching sight last summer, when already he was the prey of diabetic gangrene, to see him, the invalid, at his lovely country cottage outside London, full of his projects, actively pushing forward half-a-dozen good and useful movements, with a keenness and an enthusiasm which shamed us who were in good health; yet with an interest in everything connected with medicine and art and life in general, over and

above his own pet schemes. We in Canada have especial cause to hold him in esteem for to his visit and his efforts we owe the establishment here of branches of the British Medical Association and owe therefore the signally successful gathering of last summer. He was one who loved his fellowmen and worked for them, and now this earth is poorer for his death—and heaven the richer.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Transactions of the American Ophthalmological Society. 33rd Annual Meeting. Published by the Society, Hartford, 1897.

Elements of Latin for Students of Medicine and Pharmacy. By Geo. B. Crothers, A. M., M. D., and Hiram H. Rice, A. M.; F. A. Davis Company, Philadelphia, New York, and Chicago.

Outlines of Rural Hygiene. By Harvey B. Bashore, M.D. F. A. Davis Company, Philadelphia, New York, and Chicago.

Surgical Diagnosis and Treatment. By J. W. Macdonald, M.D. W. B. Saunders, Philadelphia, 1898.

"Antivene" in the Treatment of Leprosy. By Isadore Dyer, Ph. B., M.D. Reprint from the New Orleans Medical and Surgical Journal.

Third Annual Report of the Board of Managers of Craig Colony to the State Board of Charities. 1898.

A Clinical Study of Widal's Serum Diagnosis of Typhoid Fever. By J. H. Musser, M.D., and J. H. Swan, M.D. Reprint from the Journal of the American Medical Association. 1897.

On the Disappearance of Endocardial Murmurs of Organic Origin. By J. H. Musser, M.D. Reprinted from the British Medical Journal, 1897.

Angina Pectoris; its Relation to Dilatation of the Heart. By J. H. Musser, M.D. Reprinted from the American Journal of the Medical Sciences. 1897.

Case of Carcinoma of the Descending Colon, Excision and Anastomosis Recovery. By J. H. Musser, M.D., and Thomas S. K. Morton, M.D. Reprinted from the University Medical Magazine. 1896.

A Case of Leucæmia. By J. H. Musser, M.D., and Joseph Sailer, M.D. Reprinted from the Transactions of the Association of American Physicians. 1896.

Deficient Excretion from Kidneys not Organically Diseased, and Some of the Diseases Peculiar to Women, and Diseases of the Skin. By L. D. Bulkley, M.D. Reprinted from the Journal of the American Medical Association. 1898.

The Cure of Vesico-Vaginal Fistula by the Free Dissection of the Bladder from its Vaginal Attachments and Closure with the Buried Continuous Tendon Suture. By H. O. Marcy, A.M., M.D., L.L.D. Reprinted from the Journal of the American Medical Association. 1897.