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## BEFORE AND AFTER OPERATION. \*

Sir Berkeley Moynihan, Bart.

President of the Royal College of Surgeons of England.

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The distinguishing feature of the intellectual life of the last half century has been the progress of science. The advance has been revolutionary. New ideas are to-day expressed in so new a language, new conceptions and changed methods have created so new a vocabulary, that to the scientist of 50 years ago much of the literature of to-day would be unintelligible. In every department of scientific work the advance has, indeed, been stupendous, almost passing belief. Nor is the wonder of it lessened when we compare or contrast it with all that has happened in other departments of intellectual activity. In painting, in sculpture, in the design or the craft of architecture, in literature, we have altered our immediate interests perhaps, and have changed our tastes, but when we compare our efforts with the ideas and achievements of days gone by we remain, as we were, in a state of profound and reverent humility. In craftsmanship, as we have learned only in the last two or three years, perhaps nothing more exquisite has been wrought by men's hands than the finished perfection of the works which have been hidden for over 3,000 years in the tomb of Tutankhamen.

### Advance in Surgery.

In applied science nothing so beneficent has ever occurred, nothing surely of greater advantage to humanity, than the progress of surgery in the days since Lister introduced his new methods. Of Lister, whose centenary we have celebrated, it may truthfully be said that no man has laboured so fruitfully in the material service of mankind. He has saved more lives

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\* Sent by the Author by request.

than all the wars of all the ages have thrown away; he has lifted a heavy load of suffering and of sorrow from millions of hearts; his fame is imperishable. So great are the changes which he brought about that none can adequately appreciate them to-day.

The first result of Lister's work was the perfecting of the accepted methods of operation. Operations which had been of formidable danger became safe; recovery was not only more frequent and more rapid, but the severity of an operation and the suffering it entailed were so much diminished that the hindrances to its performance were no longer serious either to the patient or to the surgeon. The operations which had long been practised always with anxiety, and often with remorse, grew more frequent, and of unimagined safety. This led to notable invention of new methods and their quick adaptation, perhaps after frequent change, to new experiences. Not only were new methods quickly discovered, modified, and steadily improved, but their appropriate application to the conditions disclosed during operation was by degrees fully established. At almost every step embittered controversies arose. The old quarrels as to priority in the invention or modification of methods and of new instruments seem now merely laughable, though at the moment so much was felt to depend upon them and to centre round them. Controversy is the life of scholarship, though, unhappily, scrimony and coarseness are apt to creep in and to soil the contestants.

Among the great adventures and the new enterprises which grew slowly out of improving methods were two which changed the face of surgery. These were, in the first place, the recognition and study of earlier stages in structural diseases than were ever before accessible, and secondly, the institution of plans to search for associated lesions beyond the immediate field of operation as soon as this latitude to the surgeon was made permissible by success. When in any abdominal operation the inspection of structural changes in the organ arraigned was made, conditions were at first disclosed of which neither the eye nor the hand of the surgeon had any experience, nor could the literature of medicine offer any help. Discrepancies were soon recognised between those pathological changes with which the long experiences of the post-mortem room and of the museum had made us familiar and those changes seen during operation. And when, unhappily, a patient died, a comparison of the description given by the operator with the conditions found on the autopsy table led to a considerable measure of disagreement. The surgeon was rebuked, not without contempt, for proclaiming the existence of conditions not discoverable to the same extent, or in the same degree, in the post-mortem room. And post-mortem experience was held to be infallible. It was to counteract this foolish view that I coined the phrase "pathology of the Living," and in exposition upon this text endeavoured to show

that it was the condition of the parts during life which it was most essential for us to know if we were to help the living. Death not only changes the lineaments of a man's face, but so profoundly alters the parts affected by disease that the conditions before and after death may seem to be hardly comparable.

A study of the pathology of the living has led to a complete revision of our knowledge of abdominal diseases. Before the surgeon came our acquaintance with duodenal ulcer as a disease affecting multitudes of men and women hardly existed; a diagnosis of duodenal ulcer apart from its lethal complications had almost never been made. Of gastric ulcer, in respect of pathology, we knew much as a result of the work of Mathew Baillie, Cruveilhier, and Brinton, but the correlation between our pathological knowledge and our clinical acquaintance with the disease was woefully incomplete. The diagnosis of gastric ulcer was wrong in a very large proportion of cases as the surgeon was quick to discover. So with cholelithiasis. To read the first edition of Fagge's work on Medicine, one of the greatest books ever written and my sheer delight in student days, and to compare what he knew of cholelithiasis with what we know to-day, is to realise the immense gain to clinical medicine which has resulted from the work of the surgeon. Surgery, indeed, is the strongest of all research weapons in the hands of the physician, and posterity, I fear, will not hold us guiltless of the sin of allowing hostility, or imperfect understanding, to grow up between physician and surgeon in this great creative period in the science and the art of medicine. How much more rapid our progress would have been, how much more accurate our labours, what waste of time and effort would have been spared, if, instead of living each inside his own impenetrable ring fence, the physician and surgeon had met on common ground in the interest of the patient. Our only excuse, the only condonation, is that the sin was not so much of our own creation as hereditary.

### Visceral Interaction.

A further most interesting feature of our extended operative work has been the disclosure of the interaction between the various viscera. We believe now that all gastric and duodenal ulcers are secondary affections; that their cause often lies in an infection elsewhere; and that this infection travelling by various paths may be revealed at the operation which is undertaken primarily for therapeutic purposes. So, too, with the origins of cholelithiasis, and with the causes of acute and chronic pancreatitis, and with their relationship to diseases of the appendix and gall-bladder. The interaction between the liver and the spleen is admirably illustrated by the effects of splenectomy. In cases of acholuric jaundice this operation has in the clearest manner settled for ever the old controversy as to the possibility of hæmolysis as a factor, a causative influence, in cases of icterus.

When the spleen is removed in Banti's disease, the terminal stage of splenic anæmia, the effects on the ascitic condition give the clearest proof as to the influence of spleen upon the liver. The truths so learnt could be mastered in no other way than the way of surgery, by means of an operation which is not only curative, but is also a research method of the highest value. Surgical research demands infinite patience, great insight, dispassionate intellectual integrity, and sound judgment. A great generalisation of relevance not only in surgery but in medicine and in physiology may spring from all these. Experiments of immeasurably less value, of far less difficulty, involving no arduous responsibility, not demanding a sustained clinical observation, when performed upon animals in a laboratory are hailed as scientific achievements deserving and receiving the recognised reward which the Royal Society, a society founded to "Improve knowledge," hastens to convey. But when man with his diseases, in all their baffling and manifold relationships, is submitted to inquiry the labour, judged by the standards of its reward, is unscientific! At least I am compelled to draw this lamentable conclusion when I see that no surgeon in active practice to-day is a Fellow of the Royal Society.

The mere craft of surgery is now hardly capable of great advancement. It is admittedly rash and dangerous to make such a statement with confident assurance, but I have no hesitation in so doing. If, for example, ulcers or malignant growths in the stomach are to be removed, is it possible to imagine that the mechanics or the artistry of the accomplished surgeon can be changed in any notable degree for the better? There is nothing in the craft of any art so exquisitely beautiful that it can surpass that shown by the skilful master of surgery. To watch such an artist is to realise that only infinite practice, the most solemn devotion to the details of craftsmanship, and a profound sense of spiritual dedication to a high purpose, are capable of creating and so ennobling the work of a man's hands. The results, too, of such labour by the most expert craftsmen, if they have not quite attained are almost as near to finality and perfection as human effort can make them. This truth surely needs no illustration. A word of comment and of warning is, however, necessary. Surgery is not learned easily. The training is arduous and protracted; indeed, it lasts a man's lifetime. It must begin under a master's eye and be influenced by his criticism, and not less by his spritual encouragement. It must not be light-heartedly or recklessly undertaken, nor can it ever be a matter of display. In recent years, and especially, I think, since the war, the incompetent and ill-trained operator is allowed too free a hand and enjoys too wide a scope. The methods of surgery learned in the war do not fulfil the needs of civil life. The exigencies of war, the haste of war, and the sudden and heavy pressure of urgent work made it necessary to

have many operators at once available. Their methods could not, and should not, be the same as those in the deliberate, full, and scrupulous ritual which alone is permissible in our more tranquil daily work. There is to-day too much bad surgery; surgery performed by those who have, perhaps, some natural skill which has never been trained and moulded to right practice. It is for the student of surgery

“To act to-morrow what he learns to-day:

Here work enough to watch

The Master work and catch

Hints of the proper craft, tricks of the tool's true play.”

Our art at least must not be made tongue-tied by authority, but be given the freedom, vigour, and inspiration which come, perhaps insensibly, from contact with great masters. In surgical work craftsmanship is much and knowledge is much, and wisdom, which is the timely and rightful application of knowledge, is more, but as we establish our place in the world it is chiefly character that counts. Much of the inferior work now being done could not continue and would never have begun if the large hospitals to-day were doing their full duty to the public. There is need of more beds, of new departments, of more lavish equipment, but there is not sufficient money to supply our wants. Debts are heavy, overdrafts are many, waiting-lists are long. The public needs are great and urgent and should be met. We should regard the maintenance of the nation's health as worthy of the first demand upon the public purse and upon private beneficence.

#### **Improvement in Methods.**

If, then, the mere technique of surgery has almost reached its limits, if no further great development of the power of our hands is possible, how is surgical work to advance? I believe that there is great room for improvement in two directions. We should seek to obtain an earlier access to our patients, and we should use far greater efforts than now seem general to improve the chances of the patient before operation and to help him after the operation is completed. Many patients come to us when their condition is so gravely affected either by the general advance of their disease, by its very nature, or by some sudden complication such as infection or hæmorrhage, that operation upon them cannot be contemplated without the deepest misgiving. Our first thought, and all our efforts must then be directed, not so much to the operation itself as to the resuscitation of the patient. By methods which are growing in number and in value he must be restored to a degree of health and of resistance which, so far as it is possible, will make the operation safe.

An earlier access to the patient is abundantly justified by the success of surgery. The aid of surgery must no longer be withheld until there is otherwise the prospect or the certainty of a loss of life. Relief from suffering is sometimes no less important than rescue from impending death. So many conditions are to-day allowed to drag their weary way along until the patient is suddenly confronted with a new and far graver peril, or is driven by the misery of suffering, when his health is squandered and spent, at last to seek relief. How is it that chronic duodenal and gastric ulcers are permitted to continue their destructive march until perforation occurs? At least nine out of ten of these perforations should be prevented. Why cannot the surgeon have the chance to help the sufferers from cholelithiasis in earlier stages of their disease? How is it that so very few cases of cancer are seen in an early condition? Every accessible cancer is at first curable. The statistics of the Leeds General Infirmary show this truth beyond dispute. Our cases of cancer of the breast are divided into three classes—

**Class I.**, including cases in which there was no invasion of the axillary glands or of any other tissue than the breast, even at operation or after microscopic examination.

**Class II.**, including cases in which there was invasion of the axillary glands but in which, apart from the skin over the tumour, there was no other part affected so far as could be ascertained.

**Class III.**, including all other operable cases; cases of deep ulceration of the skin, &c.,  
The percentage survival after three, five, and ten years is shown by the following figures, given by Miss Gretta Wardle, M.B.:—

		After three years.		After five years.		After ten years.
Class	I. ....	88.2	....	87.5	....	77.7
	„ II. ....	39.5	....	21.7	....	15.8
	„ III. ....	25.9	....	3.54	....	0.0

More cases are operated upon now than formerly, but the increase, unhappily, is almost exclusively among Class III. cases. The efforts of the Yorkshire Cancer Campaign, however, are already resulting in opportunities for operation in earlier stages of the disease, and there appears to be a clear obligation upon our profession now to give such a general instruction to the public as will make them realise the importance of seeking medical advice for conditions which they have too long regarded as trivial, or have ignored. A campaign of public education in matters of health is long overdue. If it is frankly and fearlessly undertaken we shall enlist public understanding and sympathy

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with the work of our profession, and we shall never again witness the lamentable exhibition of bitter prejudice against our attitude and ideals which recently spread throughout the country. Prejudice is the emotional reaction of ignorance to truth. Let us dispel ignorance. Our case is surely unanswerable.

Before any surgical operation is undertaken we must, in the first place, be sure that mechanical treatment rather than medicinal or any other form of medical treatment is necessary or preferable by reason of its greater expedition or greater safety. In the second place, we must ensure that the patient is in the best physical and mental condition to undergo operation. In the third place, we must pay great regard to the exact appropriateness of the procedure employed to the conditions disclosed. And finally, we must not be content to believe that our interest in the patient ceases if he survives the operation, or on the day when his wound has soundly healed.

When contrasted with medical treatment, an operation is often considered as the method by which a new risk to the patient is being added, and little thought, if any, is given to the far greater risk from which the patient is, perhaps, being rescued. If a patient chances to be the victim of a disease which causes a good deal of discomfort, even it may be a formidable degree of temporary suffering, yet does not on the whole greatly impair general or physical efficiency, and does not appear to be a grave menace to life, it may well seem that an element of danger is being introduced when an operation is mentioned. We have, however, to recognise that the safety of surgery has become so assured that its methods may be employed, and are daily employed, not only for the rescue of a threatened life, but for the relief of recurring pains, discomforts, or any other forms of physical disability. But there is something far more important than this, something which requires the most positive statement, and it is this: that surgical treatment for many diseases is not only more effective than medical treatment, it is far safer. In my little book on Gastric and Duodenal Ulcer I review ten years' work in the operation theatre, and I discuss the material available from the post-mortem room over the same period of time. The irresistible conclusion must be drawn that by comparison with surgical treatment in competent hands, medical treatment is so dangerous in the chronic form of these diseases that fresh and far sounder arguments for its continuance, or for any reliance to be placed upon its permanent effects and value, must now be brought forward. Medical treatment having been faithfully tried in one or two attacks of gastric and duodenal ulcer, and having failed, a repetition of the treatment will be followed by a higher mortality than is now associated with surgical treatment in skilful hands, and the chance of permanent relief is not to be compared with that which surgery affords. And the same arguments hold good with regard

to cholelithiasis. The deaths that follow upon surgical treatment are deaths resulting from operations necessarily extensive because of the advanced state of the disease, which must too often be performed upon patients suffering from jaundice, hepatic insufficiency, acidosis, carcinoma, chronic pancreatitis, or some often preventable complications. The early recognition of these diseases should be the quest of the physician. In those stages they may be amenable either to prevention or to relief. In the stage when we see them to-day there is no skill even of the most practised physician which can do more than render the diseases somnolent, not only ready to awake and create afresh the old disturbance at any moment, but in their slumber to cause changes which hasten a patient to the grave. If the physician instead of a too tenacious hold upon the declared case of cholelithiasis, for example, would seek out the symptoms and the signs of the earliest phases of the disease, its antecedents, or its causes, and so enable us to counteract its origins and to check its development, we should all be happier. Our hospital system, with its most inadequate supply of beds, unfortunately restricts the activities of the physician to the patients whose diseases are advanced. The forward-looking minds in medicine are attracted by the prospects of preventive medicine.

Surgical treatment, in many abdominal conditions, may therefore often truly claim to be speedier and safer than medical treatment, and to be able to restore the patient to a brighter degree of health and to a greater freedom for enjoyment. But it must be competent and careful surgical treatment, carried out by those who have trained themselves to secure the best results.

In the future we must, I think, look for advance in surgery not so much to improve methods of operative technique, as to a wiser application of methods now almost perfected. It is therefore our task to improve surgical judgment, and to that end a long survey of past experience is essential. And it is most necessary for us to devote a greater measure of attention to the preparation and after-care of the patient. Surgery has been made safe for the patient; we must now make the patient safe for surgery.

#### **Blood Transfusion.**

The procedures by which we lessen the risks of operation are already increasing in number and in efficiency. Among the most valuable I would place the direct transfusion of blood. For my early knowledge on this subject I am greatly indebted to Crile. In the spring of 1908 I paid a visit to him in Cleveland for the express purpose of learning something of his technique, and brought back with me the instruments he then used to anastomose the radial artery of the donor to a vein of the recipient. The method was difficult, and had the disadvantage that we had to judge of the amount of blood given by observing the



effect on the receiver or upon the donor, or by measuring the time during which blood flowed between them. The results, nevertheless, were good. From that year onwards I have transfused blood in all needful cases, and there can be no doubt that many lives have been saved thereby, and in many more cases convalescence has been hastened.

Transfusion is used when severe hæmorrhage has recently occurred, as in cases of ulcer of the stomach or duodenum, in splenic anæmia, in fibroid tumours of the uterus, or when carcinoma is present; in cases of anæmia associated with growths in the stomach or colon; in cases of general enfeeblement when the red cells are fewer than 4,000,000. It is also used not infrequently in cases of inoperable malignant disease when deep X ray therapy is being applied, since a considerable reduction in the number of red cells is sometimes found to follow exposure to these powerful rays. As a rule only one transfusion is necessary, but I have on a few occasions given as many as five transfusions. For example, in a very severe case of splenic anæmia which I saw with Dr. G. W. Watson the red cell count was 900,000, the abdomen was full of fluid, and the liver enlarged. Five transfusions of blood brought the count up to 4,300,000; the abdomen was twice tapped and about 30 pints of fluid removed. I performed splenectomy. Convalescence was easy and assured; health and strength were regained, and no fluid has since accumulated within the abdomen. Transfusion may be employed, too, both before and after operation. On many occasions after the operation of gastrectomy, especially for carcinoma or for jejunal ulcer, the transfusion of 15 ounces of blood a few days after operation seems to alter the whole prospect of the case. The patient feels better at once, is more hopeful as to his recovery, and inclines to food for which he may before have felt distaste.

The transfusion of blood has many virtues: the red blood cells seem to act as well in their new surroundings as in the old; they last a sufficient length of time to tide the patient over a crisis; they appear to encourage and, indeed, to cause the red marrow of the recipient to produce red cells more rapidly and in greater number than before; the fluid remains in the vessels far longer than is the case when saline solution alone is infused; and finally, conditions such as the mobilisation of cholesterol, which may be of incomparable assistance in the fight against infections, are at once established.

#### **Post-Operative Procedure.**

Too much has been done by catharsis and starvation to reduce the condition of patients before operation. I encourage patients to drink as much fluid as possible for a day or two before operation, and of all fluids a 5 per cent. solution of glucose appears to be the best for this purpose. And I suppress the

philocathartic propensities of nurses. An evacuation of the intestine the evening before an operation is all that is necessary if the patient has been accustomed to a daily action. If constipation has been the habit it is, perhaps, a mistake to change it, or to endeavour to do so, in the last few hours before operation. I am sure that patients suffer far more from flatulence if they have been purged. And the deprivation of fluids after the ardent administration of pills and draughts and enemata is a grave disadvantage to all patients. It is a mistake to begin an attack on the patient by the same ritual immediately after operation upon any of the abdominal viscera. They have been subjected to a rude invasion and are no doubt feeling the affront. Why not leave them alone for 24 or 36 hours at least until their self-respect is recovered? There is too much meddling interference in these matters, both before and after operation, and a great deal of quite needless discomfort is added to the patient's ordeal. There is in the great majority of cases no difficulty in compelling the intestine to act, whenever this is desired, by aperients, enemata, the administration of eserine, or even of pituitrin if there has been intestinal obstruction. The stretching of the anal sphincter after the operation of colectomy, or the introduction of a short tube within the rectum in other cases is often a help in allowing the unimpeded escape of gas.

#### **Blood Examinations in Surgical Work: Acidosis.**

We are quickly learning the great advantage of blood examinations in surgical work, and we are realising how closely the clinical condition of a patient corresponds with and is explained by the chemical state of the blood. One of the most serious post-operative conditions, formerly almost invariably fatal, is acidosis. It may occur as a sequence to operation upon a dehydrated and starved patient, upon patients who have jaundice or hepatic insufficiency, or whose kidneys work inadequately; or it may occur as a direct consequence of the anæsthetic, especially if chloroform is used. It is some years since chloroform has been given to any patient of mine; it is far too dangerous a drug, and over its late effects, often unrecognised but none the less serious, we have had little or no control until recently.

Acidosis was formerly one of the most dreaded of post-operative complications; now, happily, by foresight and by after-care the risks of it are greatly diminished. The reaction of the blood is always faintly alkaline, and even in extreme degrees of acidosis shows little change: it never, of course, becomes acid. When in the body fixed acids, oxybutyric acid, and diacetic acid are produced they are at once combined with the sodium bicarbonate of the blood as a result of the "tampon action" of Bayliss, and, carbonic acid is produced. The respiratory centre being extremely sensitive to this acid is stimulated, respirations

are increased, and the pulmonary ventilation throws off the acid until the original relationship of bicarbonate of soda and carbonic acid is restored. In this reaction bicarbonate of soda has been used up, and there is consequently a diminution of the alkali reserve, and there results that "modification of the normal equilibrium between acids and bases whereby the power to neutralise acids is diminished," that is acidosis. There are other buffer substances in addition to bicarbonate of soda; the blood cells may lose their potassium and sodium to the plasma and so help to keep the balance between acids and bases. So far as elimination is concerned the power possessed by the kidneys to excrete acid salts and to leave behind a part of the base with which the acids are in combination is one of high value. By the intestinal canal phosphoric acid is excreted. The loss of equilibrium between acids and bases may clearly be due, not only to increased production of acids which engage a large quantity of bases, but also to a primary deficiency in the alkali reserve, or even to a combination of these two conditions, hyperacidity and hypo-alkalosis. The acids produced in excess are intermediate products in imperfect fat katabolism. The incineration of fats is set alight by carbohydrates, and a deficiency in carbohydrates is therefore the main causative influence in acidosis; accordingly the indication is to supply more carbohydrates.

The carbohydrate upon which we rely in cases of acidosis is glucose. It is, however, not seldom difficult to administer it, for vomiting is often so constant that none can be given by the mouth; little is absorbed when introduced subcutaneously; and none in sufficient amount, or with sufficient rapidity is absorbed from the rectum in a patient greatly enfeebled. Happily, the intravenous method of administration has proved to be extremely satisfactory. We now adopt the method suggested by Matas of giving a 5 per cent. or 10 per cent. solution of glucose, with or without bicarbonate of soda, continuously, and apparatus being used which maintains a constant temperature. And the glucose is utilised by administering insulin at the same time either intravenously with the glucose or hypodermically under very careful restrictions. Though this method has only been used by us for the last two years it has already proved its high value, and beyond question has saved lives.

The necessity for the control or the prevention of acidosis is at its highest in cases of diabetes. The risks of operation were formerly very high and not infrequently any surgical measures considered desirable were either reduced to the very smallest degree or were postponed or even denied to the patient. In cases of cholelithiasis, for example, I have for this sole reason often known a necessary operation withheld because of the fear of death or of imperfect and protracted healing of the wound. To day I regard the co-existence of glycosuria and cholelithiasis

as a still more urgent call for operation. And there is no longer any doubt that, with care before and after operation, with regular blood examinations as a part of the routine, the risks of surgical treatment are no greater in these cases than in others. It is important to recognise the value of a supply of utilisable sugar in diabetes, and possibly the administration of carbohydrates before operation, together with insulin in quantities sufficient to ensure their assimilation may sometimes be necessary. Fluid must be given generously and catharsis and starvation both avoided. Glucose intravenously and insulin subcutaneously in the proportion of 2 g. of the former to 1 unit of the latter must be given to the extent deemed necessary, a constant watch being kept on the urine for sugar and diacetic acid. The importance of avoiding any infection during or after operations upon diabetic patients, because of its effect in hastening, or even causing, coma is probably familiar to many surgeons. In such cases insulin appears to have less value than usual. The necessity for dealing actively with infections in those who suffer from diabetes is not less important.

#### Alkalosis.

The opposite condition, alkalosis, is sometimes, though more rarely, a source of anxiety after operation.

Alkalosis is also a result of a change in the ratio of free carbonic acid concentration to bicarbonate of soda concentration. The free acid may be reduced either by increased pulmonary ventilation, or by augmentation of the combining power of the blood plasma with carbonic acid. In either case alkali reserve in the blood is increased, and there is a consequent tendency of the blood to veer more strongly towards the alkaline side. Expressed by Henderson's formula, the blood reaction at any moment depends upon the balance—

$$\frac{\text{Free CO}_2 \text{ concentration}}{\text{NaHCO}_3 \text{ concentration}}$$

An increase in the numerator or a decrease in the denominator indicates acidosis; a decrease in the numerator or an increase in the denominator indicates alkalosis. A change in both numerator and denominator in the same case may at times be observed. Any change in the numerator excites an attempt on the part of the body to compensate by causing an equal change in the denominator and vice versa. In alkalosis resulting, for example, from a greatly lowered CO<sub>2</sub> content of the blood the compensatory effort takes the form of an increased excretion of alkali and a consequent lowering of the bicarbonate of soda in the blood plasma. If, on examining the blood, this lowered plasma bicarbonate is found, the tendency is to assume that it is due to acidosis. There is, consequently, a danger of confusing the two opposite conditions. They can, however, be distinguished

after an examination of the urine. In acidosis there is an increased excretion of ammonia, produced in order to economise the "fixed" alkalis of the blood, whereas in alkalosis the chief need being the riddance of these attacks, ammonia production is no longer required, and is, therefore, reduced to the smallest degree. The two conditions, acidosis and alkalosis, are alike, too, in this—that acetone bodies may be present in the urine in either condition. In acidosis they are in part at least the cause of the condition; in alkalosis they are produced as a part of the compensatory mechanism which seeks to neutralise the excess of alkali.

Alkalosis, then, may result either from an excess of alkali or from a decrease in  $\text{CO}_2$ . The clinical conditions in which it may occur are:—

1. **Excessive Overdosage with Alkalis.**—The danger of this is small, except, perhaps, in cases in which the renal functions are impaired. Venables reports<sup>1</sup> seven cases of alkalosis following the alkaline treatment of duodenal ulcer. One patient, a male aged 50, who had suffered for a few months from excessive vomiting, died comatose. He became very depressed, complained of severe headache, of intolerable itching of the skin, and of complete anorexia; he suffered a recurrence of vomiting, and was extremely irritable. The blood-urea was almost quadrupled [was this a case of uræmia?] Hardt and Rivers<sup>2</sup> relate a similar series of cases of toxicity. Alkalosis has resulted from the administration of sodium bicarbonate in cases of acidosis, especially when associated with poor renal function.<sup>3</sup>

2. **In Certain Gastric Disorders where Free HCl is Diminished.**—For example, in cases of duodenal or gastric obstruction, either accompanied by copious vomiting or controlled by frequent lavage of the stomach, both involving a constant loss of acid. The condition has been produced experimentally by McCann.<sup>4</sup>

3.—**In Hyperpnœa due to Increased Pulmonary Ventilation with Excessive Loss of  $\text{CO}_2$ .**—Alkalosis is accordingly found when there is a want of oxygen, as in those living at high altitudes and in carbon monoxide poisoning. It may follow prolonged immersion in hot water, in consequence of the hyperpnœa induced to keep down the body temperature, and it may be present in cases of high fever. In alkalosis the rise in the carbon dioxide combining power of the blood may increase from a normal of about 60 per cent. to 120 per cent. or even more, and there is a diminution in the chlorides to nearly one-half of the normal. The blood-urea is raised.

<sup>1</sup> Guy's Hospital Reports, 1925, lxxv., 152.

<sup>2</sup> Archiv. Int. Med., 1923, xxxi., 171.

<sup>3</sup> Harrison: Jour. Amer. Med. Assoc., 1925, i., 671.

<sup>4</sup> Jour. Biol. Chem., 1918, xxxv., 553.

I have only a slight experience with this condition, but I have no doubt that it has been overlooked in my earliest experience, and I should have remained unfamiliar with it but for my colleague Dr. MacAdam. The difficulty in its recognition is largely due to the resemblance which the symptoms caused by it may bear to those present in acidosis. It is to be feared in those cases where vomiting has been long-continued and distressing feature before operation. The chief symptom is vomiting, which is both copious and frequent. The stomach may be emptied of a large quantity of fluid and yet fill again very quickly, for within an hour or two severe and prostrating vomiting may begin afresh; headache, generally occipital, is severe and often throbbing in character, and intense dizziness occurs on the slightest movement of the head; there is much pain in the back. Numbness of the extremities appears early with facial rigidity. This is quickly followed by tetany with the characteristic spasm of feet and hands. In the severe cases general convulsions may appear. There is increased electrical excitability and Chvostek's and Trousseau's signs are both present. The patient after a period of irritability will drift into a comatose condition unless the cause of the symptoms is recognised.

The treatment consists in supplying fluid by the rectum and subcutaneously, and by the intravenous injection of saline solution in quantities of from one to two pints twice at least during the 24 hours. There is a good deal of experience to show that a saline infusion produces only a temporary effect, an effect which rarely lasts for more than six to eight hours, and a repetition of the administration is therefore necessary and is to be preferred to the injection of a larger quantity on a single occasion. A very dilute solution of hydrochloric acid, one teaspoonful to 10 ounces of water, may be given as a beverage, but the frequency of the vomiting in the acute phase of the condition makes this of little value. With a Jutte tube in the stomach the fluid has a better chance of absorption and may for a time be given in larger quantities; the excess will escape by the tube.

#### Cholelithiasis.

Evidence as to the high value of blood examination is found also in cases of cholelithiasis and of genito-urinary diseases. The work of Dr. Cecilia Shiskin and of Mr. G. Collinson upon my cases of cholelithiasis has shown that a knowledge of the cholesterol content is helpful in diagnosis. The work of Dr. MacAdam and Dr. Shiskin<sup>5</sup> upon the cholesterol content of the blood in genito-urinary sepsis has shown how significant a low value may be in demonstrating the need for the rehabilitation of the patient before an operation is undertaken. In such cases the determina-

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<sup>5</sup> Brit. Jour. of Surgery, 1925, xii., 425.

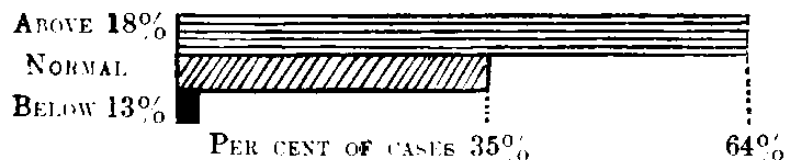
tion of the blood urea is also of great importance. It is not an extravagant claim to make for these methods that in many cases, perhaps even in a majority, they may prove a more reliable guide than the clinical sense of the surgeon. In the series of 80 cases examined by MacAdam and Shiskin there were 18 with hypocholesterolaemia, and of these 16 died of pyelonephritis; in only one-half of these cases "did the clinical opinion of the general condition of the patient contra-indicate operation." A low cholesterol content and a large excess of blood-urea indicate the need for delay in operating and for the wise employment of all methods in repairing the damaged health of the patient. Among these methods are continuous slow drainage of the distended bladder in cases of enlarged prostate, a dietary generous in carbohydrates, and the intravenous administration twice, or even thrice, daily of normal saline solution in quantities of one pint on each occasion. The direct transfusion of blood finds useful application here also.

I have realised the possibility of augmenting the cholesterol content of the blood by transfusion; the increase is found to be out of all proportion to the cholesterol content of the transfused blood, and it would seem that there is a quick and lasting mobilisation of cholesterol from the storage deposits in the body of the recipient. This hypercholesterolaemia indicates very probably a strengthened defence against infection. Perhaps no operation in surgery shows so striking a difference between procedures of haste, and of judiciously used delay, as the operation of suprapubic prostatectomy.

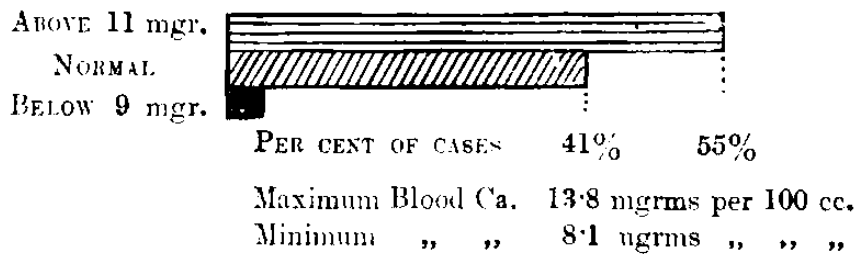
#### Post-Operative Results in Jaundice.

One of the most satisfactory results of the careful preparation of patients before operation has been seen in those who were jaundiced. Formerly such patients were not seldom denied the relief of surgery because of the grave risks attached to it, and no less an authority than J. B. Murphy advised against operation in cases of carcinoma of the head of the pancreas. One of the disasters which occurred after operation was unceasing leakage of blood from many vessels. On post-mortem examination large masses of blood were found in the peritoneal cavity, in the subperitoneal tissues, in and around the wound, after a great deal had been already lost in the dressings. An examination of the blood showed a delayed coagulation time. After a visit to Kroneker's laboratory in Berne I began the administration of an alien serum to all jaundiced patients; antidiphtheritic serum was first tried when needed in haste; afterwards freshly prepared rabbit's serum given in doses of 20 c.cm. twice or thrice repeated. Blood examination before and after showed a reduction in the coagulation time. It is supposed that the prolonged coagulation time in jaundice may be in part due to a reduction in the amount of calcium in the blood. To reduce this period the administration

of calcium chloride by the mouth was first suggested by Almroth Wright, but my experience seemed to show that little or no good came from it. An examination of the blood in a series of 55 consecutive cases of cholelithiasis has shown that the calcium content is often high. If the normal is assessed at 9 to 11 mg. in 100 c.cm. of blood, 30 patients were found to have a calcium content of over 11 mg. 22 had a normal content, and 3 had a content below 9 mg.; four of the patients were jaundiced; their blood calcium was 9.2, 8.6, 8.6, and 8.1 respectively. If a diagram is made showing the cholesterol content of the blood in cholelithiasis it is found nearly to correspond with a similar diagram showing the calcium content; hypercalcaemia and hypercholesterolaemia almost coincide. To increase the calcium content is not easy. A very slight and a very transient effect is produced by the oral administration of a calcium salt; a very definite and not so transient an effect is produced when 5 c.cm. of a 10 per cent. solution of calcium lactate is introduced into the veins; being in crystalloid form the calcium is quickly excreted by the



#### BLOOD CHOLESTEROL



#### BLOOD CALCIUM

Examination of the blood in cases of cholelithiasis to show the cholesterin and the calcium contents.

liver cells and escapes into the bile. To counteract the quickly passing stage of calcium increase a repetition of the dose on three or four consecutive days, before and after operation, reduces the coagulation time when this is most needed. (My chemical assistant, Mr. G. Collinson, is responsible for the estimations and for the diagram.)

In jaundiced patients, or in patients in whom there is hepatic insufficiency (the tests for which are not very satisfactory), a direct transfusion of blood, the intravenous administration of glucose, with or without a little carbonate of soda, on two or three occasions, or continuously, a very generous carbohydrate diet, and an abundance of fluid by the mouth, all help to lessen



the dangers of operation. In such cases chloroform should never be given, and as little ether used as possible. Local anæsthesia with gas and oxygen will often suffice; the surgeon, remembering that it is not his comfort during the operation but the patient's safety that counts, does not ask for a complete relaxation of abdominal muscles.

Vomiting is sometimes a distressing and a dangerous symptom after operation. It may be due to many causes, adynamic or obstructive; it may be the warning symptom of acidosis; it may occur in cases of urgent surgery for acute peritonitis. The moment that it appears to be anything more than the result of the anæsthetic the stomach-tube should be made ready. Early evacuation of the stomach with a little lavage may check the further development; the discomfort caused is amply compensated by the relief which soon follows. If vomiting is frequent, small amounts only being ejected, it is certain that the stomach is overloaded; the tube may evacuate two or three pints of dark fluid. There are times when it is necessary to wash the stomach repeatedly. In such cases I have found great advantage from the Jutte tube passed through the nose. The tube is very small, weighted at the end; it is easily slipped down the nostril and then swallowed. It may lie in the stomach for days, and the evacuation of fluid may be hastened by the application of a syringe to the other end. One great advantage of it is that the patient may drink copiously while the tube lies in the stomach. This is a very great relief to the patient, and the excess of fluid trickles away by the tube. As Matas has shown, in cases of high fever, iced water given generously causes the stomach to act as an icebag conveniently placed beneath the heart and over the aorta and vena cava. I have found the greatest help from this tube on several occasions.

### Conclusion.

My thesis, then, to-day is one with which all will agree: it is that surgery is not only a question of operating. The surgeon in the last generation has had immense and unprecedented opportunity for research. Of these he has not failed to avail himself. He has not only brought relief to countless numbers of patients, but his investigations have created new knowledge, and have corrected old knowledge, as to the causes and conditions of disease. He has become very expert as a craftsman. But more than craftsmanship is needed. It is now his duty to concern himself with all relevant inquiries as to the condition of his patient before operation, to change those conditions to his patient's advantage, and to control his patient after operation, in order that the safety and the permanent success of his operation may be ensured. I foresee, therefore, a change, not only in the aspirations and the labour of the surgeon, but in the methods by which he is trained for his task. In my day far too much time was

spent in anatomy, and a needlessly intricate knowledge of some of its branches was required of us. The years of training might now be profitably spent in learning more of physiology, biochemistry, pathology, and in saturating the surgeon in his plastic years with the faith and the practice of the religion of research. The science of surgery in days to come will be advanced by men trained in the methods and imbued with the spirit of experimental research, though it will no doubt continue to be practised to their profit by those who are merely craftsmen. The surgeon is not simply the tool of other minds; he is not merely required to carry out the mechanical and routine details of a procedure the necessity for which, and the plan of which, others have decided. A life is entrusted to his hands. It is for him to safeguard it. It is he who must finally decide when surgical treatment is needed, and what shall be its scope and application. It is he who must take pains so to prepare or to rehabilitate his patient that the anxieties, the discomforts, and the perils shall fall as lightly as possible upon one who at the moment is perhaps less than ever able to bear them. The surgeon may in some degree share his responsibilities with others, but the chief responsibility must always lie with him, and being his, must be exercised not only during the operation but also before, perhaps long before, and also after, perhaps long after, the operation is performed. The operation itself is but one incident, no doubt the most dramatic, yet still only one in the long series of events which must stretch between illness and recovery. The patient, passing through the deep waters, may find them chill and bitter, but the thought of our labour in his service, when the toilsome days are ended, will lie as a glowing coal at his heart.



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**INFANTILE TETANUS (Tetanus Neonatorum)  
IN HONG KONG.**

**Its Prevalence and Source of Infection. \***

C. Y. WANG.

Professor of Pathology, University of Hong Kong.

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Tetanus was at one time not an uncommon cause of death among the new-born in Europe, but since the introduction of aseptic and antiseptic measures for dealing with the umbilical cord at birth, and with the general enlightenment of the public in domestic hygiene, the disease as occurring in infants has now become one of some rarity in that region. Unfortunately in China, and in some other tropical countries, owing to ignorance, neglect and practice of unscientific methods based on superstition, tetanus neonatorum is still very prevalent among the poorer classes, and in some localities has been responsible for the death of as many as 30 per cent. of the new-born infants.

This paper records the results of an investigation which was undertaken with the view to determine, in the first place, how many of the new-born who were admitted into the Italian Convent Foundling Home in Hong Kong and succumbed with symptoms similar to that manifested in tetanus actually died of the disease, and, in the second place, the source of such infection. The clinical aspects of the cases are dealt with in a paper appearing in this issue of the Journal by Dr. T. C. Wong, who is visiting physician to the Home.

It was observed that in nearly every case where a child was brought into the institution with tetanus-like symptoms the cord had previously been treated with some kind of Chinese medicine which is commonly known as sealing-cord powder and suspicion was at once raised that this form of medicament may have been the source of infection. Accordingly, such cases as were admitted into the Foundling Home, showing tetaniform symptoms, were examined for the *B. tetani*, the powder which was still adherent to the cord, or that which was known to have been used for the child, furnishing the material for the investigation. Owing to shortage of experimental animals at the time, it was decided to confine the examination to only those cases which would come under observation during one single month. The investigation was begun in June, 1926, and during that month alone there were admitted for treatment eight infants exhibiting symptoms of the disease, and these were examined bacteriologically. The investigation was extended to include

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\* The expenses of the research were defrayed from a grant from the University, for which I desire to express my thanks.

the examination of various samples of the sealing-cord powder which was sold by the Chinese druggists in different districts of the town. These were purchased in the ordinary way. In all, 121 samples, one from each shop, were examined, of which 66 were bought in the central district, 39 in the western district, 7 in Kowloon and 9 elsewhere in town. From the general physical characters of the powders it was apparent that they have not all been prepared according to one fixed formula, 6 being red in colour, 8 white, while the rest either dark grey or blackish in tint. Some were found to float, others tend, in part, to sink, but they were all mostly insoluble in this medium. The Chinese pharmacopoea gives various formulae for the preparation of this medicament, but it is important to note, as shall be observed later, that practically all have in them as a constituent some dry earth, charcoal or dry animal manure. In a few samples the powder contained a certain amount of red mercury. The cost was 2 or 3 cents for a packet containing about half an ounce of the medicine.

#### Method of Examination.

The powder bought direct from the shop or removed from the cord was put into glucose broth with a reaction of  $\text{PH}_{7.6}$ , care being taken to have as much of the material immersed in the fluid as possible, by slowly rotating the tube for a number of times. The tube was heated at  $55^{\circ}\text{C}$ . for one hour, in order to destroy all but the spore-bearing bacteria, and immediately incubated in M'Intosh jar under anaerobic condition for three days. Examination of the culture was then made in smear preparation for tetaniform bacilli, and in each instance where these were found the question as to their being tetanus organisms was determined by animal inoculation. For each culture showing morphological *B. tetani* two guinea-pigs were used. Guinea-pig 1, acting as control, received intraperitoneally 400 units of anti-tetanic serum, followed by the injection into the thigh subcutaneously of 4 ccm. of a mixture containing equal parts of the suspected culture of 3-4 days old and a milky suspension of fine sterile silica. Guinea-pig 2 received by the latter route 4 ccm. of the culture and silica suspension alone. The importance of adding a little sand or other irritants of like nature, e.g., ionisable calcium salts, to the culture for animal inoculation lies in the fact that these substances serve to induce a local defence-rupture of the tissue, thus facilitating the growth of the bacillus tetani. For, unless this defensive mechanism is broken down, it is found, as Bullock and Cramer have shown in their study with the *B. welchii*, that many pathogenic organisms would be harmless to an animal on injection, unless their presence is accompanied by a local change in the tissue, such as that determined by certain irritants or some recognisable forms of injury.

The identity of the organism as being that of tetanus was tentatively established when symptoms of the disease, characterised by contraction of the musculature, first appearing near the seat of injection, but ultimately becoming general and ending in death of the animal, appeared in the guinea-pig which had not received the antitetanic serum, while the control guinea-pig survived without exhibiting any ill-effects. In all cases the diagnosis is confirmed on autopsy of the diseased animal by microscopic and cultural examination of the tissue at the site of inoculation, the finding of typical drum-stick organisms being accepted as proof.

### Results of Examination.

Of the eight samples of powder which had been used for the cord, seven were definitely shown to contain living tetanus bacilli, capable of conveying infection. With regard to the one which failed to yield the organism on cultivation it was found that, in this instance, the amount of powder available for examination was scanty, and this might give explanation to the negation of the finding. Or, as it seemed not improbable, the source of infection in this case might have been the instrument used in cutting the cord at the time of birth.

From 8 out of the 121 specimens of the powder procurable from shops in different areas of the town the *B. tetani* in the living state was demonstrated in culture and its identity confirmed by animal inoculation. Out of the eight infected powders, three were purchased in Des Vœux Road, two in Queen's Road, and one each in Wellington Street, Caine Road, and Kowloon.

### Discussion.

Since the discovery of the *B. tetani* by Nicolaier and the introduction of methods for its isolation by Kitasato, it is shown that the bacillus has an ubiquitous existence. Thus it is commonly found in garden soil, particularly that which is fertilised with natural manure, in the dust of streets and houses, in the intestines and skin of many herbivorous animals, especially horses and cattle, and in the dejecta of these and other animals and occasionally of man. With the exception of the idiopathic form of tetanus, which was assumed to arise with apparent absence of any form of injury, but which existence is now generally denied, or at all events must be very rare, the disease practically always develops in the presence of a wound, though this might be very small, or might even escape observation. It occurs most frequently in wounds, particularly severe or lacerated wounds, exposed to contact with earth. It may ensue upon the wound produced by a bullet, a bee-sting, a rusty nail or a splinter of wood. It has been found to follow the application on a raw skin of fuller's earth, which is a porous aluminium silicate containing some iron and was at one time obtained from the neighbourhood

of Reigate in Surrey. It has also been known to take place after the injection of gelatin or the application of vaseline to a cut; in the latter case the infection was shown to have originated from the paper disc separating the stopper from the contents. But of tetanus in infants the cause can almost invariably be traced to an infection taking place at the umbilicus. The source of infection is usually a pair of dirty scissors, a ligature for tying the funis or some kind of medicament with which the cord had been treated. Here in Hong Kong it is found that the last form of infection is not only a very potent but also a prevalent cause of the disease among the new-born, as judged by the large number of proved cases of infantile tetanus which are admitted every month into the Italian Convent Foundling Home—which is after all only one of the many institutions admitting infants for treatment in this city—, by the high percentage of contamination with living tetanus bacilli of the cord-powders sold locally, as the results furnished above have shown, and by the wide practice of treating the cord with such material among the poorer classes of Chinese. Undoubtedly the powder carrying the bacillus tetani derives its contamination from earth or manure, either of which is an almost constant ingredient of this preparation and in them the organism commonly abounds. Being extremely resistant to destruction it will remain viable for a long time in the dry condition and in the presence of a moderate degree of heat.

In the last annual report of the Medical Officer of Health there are given 129 deaths from tetanus and convulsion among infants under one year. The actual number of deaths from the disease must be considerably higher than the figure indicates as there must have been many cases which in the absence of bacteriological examination would not be returned as tetanus, although they may actually be such, and many more cases still which were uncertified but brought to the post-mortem room where the disease cannot usually be recognised, for the simple reason that it leaves little or no pathological changes which are striking and from which a diagnosis can be made with any degree of certainty. Bearing on this point it is significant to note that included among these *uncertified* cases which are examined in the mortuary every year in the thousand is a large number of infants dying with tetanus-like symptoms in the Foundling Home alone, (164 cases in 1926, vide Dr. Wong's paper) and of this seven out of the eight cases which came under observation in the month covered by the investigation were proved to be tetanus by bacteriological tests, but for the explanation given the nature of the disease was not ascertained on autopsy. Hence infantile tetanus as a cause of death rarely figures in the mortuary return. From this it may justly be inferred that the total number of deaths from the disease among infants in Hong Kong in the year must reach an appalling figure.

Tetanus is a preventable disease. Its high incidence among the new-born here, as disclosed in the recent return of the Medical Officer of Health and amplified by my investigation, reveals a deplorable state of ignorance amongst the Chinese mothers generally, and should demand the institution of appropriate measures for its prevention. Much can be accomplished in this direction by the creation of popular lectures, which should be given with regard to elementary hygiene necessary for women and their new-born children and to the dressing of the cord, on the proper treatment of which the prevention of infantile tetanus almost entirely depends. But still more can be achieved by the Hong Kong Government, in so far as this disease is concerned, by prohibiting the sale of the sealing-cord powder, as made by the Chinese druggists, or the use of infected ingredients, such as earth and animal manure, in its preparation. Here, there are laws prohibiting the free sale of drugs which are listed under poisons, and the sale of food which is unfit for human consumption, but there should be a law also forbidding the preparation and sale of medicine in any form for human use which is infected with highly dangerous bacteria.

#### Summary.

1. Observation was made with the view to determine the number of actual cases of infantile tetanus as were admitted into a Foundling Home during the period of one month, taken at random. Seven were proved to be tetanus, and in each instance living tetanus bacilli were found by microscopic, cultural and animal tests in the cord powder with which the umbilical cord had been treated.
2. Examination was made of 121 samples of the powder obtained from different Chinese drug stores, one from each, in various parts of the town. Of these 8 were shown by bacteriological examination to be contaminated with the *B. tetani* in the living state.
3. The source of infection of the powder is the earth or animal manure used in its preparation.
4. The investigation shows that the actual number of deaths from tetanus in the new-born in the year must be very much higher than the figure given in the recent return of the Medical Officer of Health.
5. Infantile tetanus being a preventable disease proper measures, such as those outlined, should be taken for its prevention. In this respect the local authority with the co-operation of the various Chinese educational and charitable organisations can accomplish much.

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SOME OBSERVATIONS ON THE CLINICAL ASPECTS  
of  
TETANUS NEONATORUM (INFANTILE TETANUS).

T. C. WONG.

Hong Kong.

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In a place like Hong Kong where there is every facility for engaging trained nurses and good provision of maternity institutions for conducting obstetrical practices one would be very much surprised to come across cases of tetanus neonatorum. As visiting physician to the Italian Convent Foundling Home for some years past I have observed that amongst the number of children admitted to the institution there were many cases of infantile tetanus. Out of the total number of 2,264 admissions in 1926 alone, there were 164 infants showing on admission symptoms of the disease. Excepting in one instance they all succumbed to the affection, and the bodies were sent to the Public Mortuary, uncertified.

The cause of the disease is the tetanus bacillus introduced through a cut of the umbilicus at the time of birth. Thus any article or material, such as scissors, ligature, dressing or dusting powder which happens to be infected with the causal organism and comes in contact with the wound may be the source of the infection. An old idea amongst the ignorant class of Chinese is that if the cord is severed and not properly sealed the child will develop abdominal pain, due to winds entering into the abdominal cavity through the cord. Hence the use of a powder or a plaster for sealing the cord at birth. Neither substance is of uniform composition, the most simple being composed of burnt ashes of coarse paper or dryobalanops aromatica powder which is a preparation of camphor. The following ingredients are commonly used by the Chinese druggists in the preparation of the cord dusting powder:—ashes of red cotton cloth, ashes of cow's dung, ashes of human hair, rouge and dragon bones, all being finely ground.

The first indication of the disease is that the child cannot suck, due to spasms of the masseter muscles. The spasms rapidly extend to the orbicularis oris and palpebrarum muscles giving rise to the typical risus sardonicus. The spasms then extend to the neck and trunk muscles. Tonic and clonic contractions of the voluntary muscles generally are present and the slightest irritation even the shaking of the bed will provoke these spasms. As such symptoms are characteristic features of the disease which can thus be readily recognised, the cord is not as a rule ulcerating and in a good number of cases appears



quite healthy. In all these cases whether the stump of the cord is present or not some kind of powder or plaster has usually been applied.

*Age incidence.* Of the 164 cases of infantile tetanus observed in the Foundling Home in 1926, 11 developed signs and symptoms of the disease on the 4th. day after birth, 47 on the 5th. day, 40 on the 6th. day, 37 on the 7th. day, 16 on the 8th. day, 9 on the 9th. day, 2 on the 10th. day, 1 on the 11th. day, and 1 on the 12th. day.

*Mortality.* Of these cases 8 died on the 5th. day after birth, 26 on the 6th. day, 27 on the 7th. day, 28 on the 8th. day, 24 on the 9th. day, 14 on the 10th. day, 13 on the 11th. day, 10 on the 12th. day and the rest between the 13th. and 27th. day.

One case was discharged on the 20th. day with relief of symptoms.

The child was seen again six month afterwards for bronchopneumonia. In the majority of cases death occurred within six days of the onset of the disease.

*Topographical distribution.* Out of the 164 cases 21 came from the central district, 40 from the western district, 2 from Pokfulum village, 13 from Aberdeen village or junks, 1 from Shaukiwan, 59 from Yaumati, 17 from Hunghom, 6 from villages in the New Territory, 3 from Cheung Chow island, and 2 from Ping Chow island.

The disease is almost uniformly fatal. During my 5 years' experience in the Foundling Home there is on record only one recovered case of tetanus.

*Treatment.* Prophylaxis is the only measure to reduce the mortality of the disease. Once the symptoms have developed nothing can be done in the way of effecting a cure. Various drugs have been tried but without success. Antitetanic serum has been used in one case but failed. The cost of the serum and the doubtful results obtained with its use have prohibited further recourse to this remedy for treatment. Injections of carbolic acid solution and intraspinal and intramuscular injections of magnesium sulphate have also been tried but were unable to influence the progress of the disease. The only drug that I now use is saturated solution of sodium luminal. A few drops of this solution are given in the mouth and repeated every hour until the spasms are relieved. As a rule not more than three doses are required to stop the trismus. In a few cases milk can be given in small quantities after exhibition of the drug which has however to be repeated on the recurrence of the spasms.

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**CISTERN PUNCTURE AND MYELOGRAPHY.\*****Modern Methods in the Diagnosis and Treatment of  
Spinal Cord and Brain Diseases.**

M. O. Pfister,

Hong Kong.

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Since Quinke in 1891 introduced the puncture of the lumbar region as a therapeutic means to relieve pressure in cases of hydrocephalus, the lumbar puncture has developed into a most valuable diagnostic method, and also its use for therapeutic purposes has become more generally practised.

By examining the spinal fluid we are able to distinguish the various forms of meningitis from each other and to establish by bacteriological findings an exact and early diagnosis in cases of tuberculous or epidemic meningitis. A moderate simple lymphocytosis with an increased globulin content in the spinal fluid was the only reliable laboratory test and considered as an early sign of neurosyphilis at the time when the Wassermann reaction was not known yet. The cytological studies of the spinal fluid have since been carried further.

The quantitative methods of determining the globulin content, the globulin and precipitation tests, of which the colloidal gold and mastix curves are instructive examples, have greatly added to the refinement of the diagnosis of the pathological conditions of spinal cord and meninges. In the so-called Froin's syndrom: Xanthochromia and increased globulin content—(often to a degree of spontaneous coagulation)—but without increase of cells we have an almost unfailing sign of subarachnoidal block.

In syphilis of the C.N.S. the examination of the spinal fluid plays an important role nowadays for it gives information as regards the stage and prognosis of the disease and the efficiency of our therapy. With the modern conception of syphilis and the experience that syphilis of the C.N.S. has become alarmingly frequent, the control of the spinal fluid as a routine has to be considered as indispensable in the treatment of the disease.

For **therapeutic purposes** the lumbar pucture has been made use of more frequently in recent years and its application is no more confined to purely nervous diseases.

In tabetic crises the painful attacks are often checked by repeated punctures and withdrawal of fluid. In cases of tuberculous meningitis the punctures have occasionally not only a temporary effect of relief, but have been followed in a few cases

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\* Read before the Hong Kong and China Branch of the B.M.A. in March, 1927.

reported in the literature by complete recovery. The success is probably due to the increase of liquor production stimulated by the withdrawal of fluid. The amount of toxic material is thus removed or at least reduced to a quantity which may be successfully overcome by the immunisatory powers of the body. The same holds good in epidemic encephalitis and meningitis.

Since Walter by his experiments with the bromine method has demonstrated that the permeability of the meninges is altered in certain pathological conditions and then toxic substances more readily penetrate into the spinal fluid through the meninges which normally form a safe barrier, new indications for the liquor drainage are given. In uraemia with convulsions repeated punctures diminish the attacks in quality and quantity and have proved more effectual than cupping. The urea content in the spinal fluid has been found increased in uraemic conditions, the puncture therefore probably acts by dilution of the irritating toxins. Similar good results have recently been observed by repeated punctures in cases of alcoholic neuritis and intoxications with wood alcohol, in the latter the symptoms of amplyopia have greatly improved. Considering that 1.5—4% of alcohol has been found in the spinal fluid of drunken individuals within the first two hours of the intoxication the L.P. might also successfully be tried in serious cases of this kind.

**These recent experiences open a new field for investigation and encourage one to extend the indications for the puncture treatment upon all cases in which the effects of an endogenous or exogenous toxin on the C.N.S. have led to the menacing cerebral signs of convulsions or to increasing somnolence.**

By administering **therapeutic agents** into the spinal fluid we are able to influence pathological conditions within the vertebral canal in a still more effective way. Thus the epidemic meningitis has lost a good deal of its danger and hopeless outlook through the good results with the intradural injections of meningococcus serum. In acute epidemic encephalitis similar treatment with convalescent serum has been reported to have improved the lethargy. In tetanus the intradural treatment is the most effective one.

Besides sera various medicaments have been introduced into the spinal fluid, especially with salvarsan given by the endolumbar method excellent results have been obtained in cases of acute syphilitic meningitis and those forms which we call neurorecidives.

Finally the lumbar puncture has gained great importance in surgery as a method for administering anæsthetics (spinal anæsthesia).

I have dwelt somewhat lengthily on the manifold possibilities of using the spinal puncture in order to show that it is

not only the neurologist who has daily to deal with it, but that its usefulness also in non neurological cases postulates that every practitioner should become quite familiar with the puncture of the cerebro spinal fluid.

The method heretofore commonly practised is the puncture in the lumbar region below the second lumbar vertebra where the spinal cord ends and an injury to the latter is thus avoided. The puncture at this place usually is not difficult although in some cases a narrow foramen intervertebrale may render the performance especially for beginners not quite easy. As the subarachnoidal space which contains the spinal fluid is comparatively wide we may of course tap the fluid also at places higher up along the vertebral column without injuring the cord if only care is taken not to introduce the needle too far.

There is another place where the surrounding bones offer a still wider opening than the intervertebral foramina and where the subarachnoidal space is enlarged and the nervous parenchyma situated at a comparatively great distance from the dura. This region where therefore the anatomical conditions are very favourable for a puncture is the space between the first cervical vertebra and the occiput at the level of which the wide subarachnoidal space between cerebellum and medulla forms the so-called cisterna magna or cerebello medullaris.

The **cistern puncture** (C.P.), as I have to show has proved in many ways superior and is technically even easier to perform than the lumbar puncture. It has already surpassed the latter to a certain extent and probably will do so still more in the future.

As the method is little known and still less practised in China I wish to advocate its more general use with these lines.

The first who endeavoured to puncture the great cistern was Ayer in 1919, but it took several years before his method was generally adopted. The close presence of the medulla oblongata at the field of operation seemed to have discouraged most of those who read Ayer's articles. For myself I must confess that when I first saw a young physician who had been trained in Ayer's clinic, perform the cistern puncture and this was followed on account of faulty technique by sudden stoppage of breathing and deep cyanosis, I felt everything else than favourably impressed by the method. After some experiments on dead bodies, I nevertheless found the method quite easy and have since done over 100 cistern punctures without the slightest complication or inconvenience for the patient.

**The cistern puncture is performed in the following way:—**

An hypnotic is given half an hour before the puncture, preferably in the form of an injection of 0.3 scopolamine (1: 1,000); morphia should be avoided for it is liable to produce nausea, for

which the puncture might be held responsible. The patient is lying on his right side in horizontal position with the head slightly flexed in order to tighten the atlanto occipital membrane; too much flexion renders palpation difficult therefore the neck muscles must be relaxed. **It is important that the head be held and kept exactly straight in the middle line.** Local anæsthesia is unnecessary, the puncture does not cause more pain than the anæsthetising needle does; besides infiltration impairs the facility of feeling the underlying bony structures which serve as landmarks. In my experience the cistern puncture is more easily tolerated by the patient than the lumbar puncture; when the skin is pierced the patient feels no further pain and has himself not the slightest sensation in which direction the needle is going. I never used local anæsthesia in my punctures. The idea of a "head puncture" may somewhat upset a neurasthenic individual and the performance may thus become less easy, but local anæsthesia will not improve the situation.

The tip of the left middle finger is then put on the spinal process of the second cervical vertebra and slightly above it in the middle line the needle is inserted with the direction towards the upper margin of the external auditory meatus and the glabella (see fig. 1.)

To insert the needle exactly in the middle line one has to remember that the spine of the axis is divided, thus usually two bony marks are felt, a point midway between these represents the middle. After the skin, subcutaneous tissue and the strong ligamentum nuchae have been pierced the needle by gentle and steady pressure is pushed forward in the same direction as mentioned before, until the point meets with a second marked resistance: the firm atlanto occipital membrane with the underlying dura mater. Slightly increased pressure on the needle is now necessary to pierce this last resistance. Immediately the latter is passed the point of the needle having entered the cistern is felt free and spinal fluid at once will drop out after the removal of the stylet. The depth to which the needle has to be inserted naturally varies according to the thickness of the subcutaneous layers, but there is less variation than in the lumbar region. In an ordinary sized adult the distance between skin and cistern amounts to  $4\frac{3}{4}$ -5 cm., in the average of our lean Chinese patients spinal fluid appeared when the depth of  $4\frac{1}{2}$  cm. was reached. In obese people the needle might be pushed further, but normally 6cm., is the maximum depth to which the needle may penetrate without danger. **The last and easily felt resistance of the atlanto occipital membrane always indicates the mark after passing of which the needle has to be handled with great caution and must not proceed further than one cm.** If then no fluid is obtained the needle probably has not been inserted in the proper direction and should be withdrawn. According to measurements on frozen bodies the distance in the cistern from dura to medulla is

from 2½ to 3 cm. at an angle at which the puncture is performed with the direction towards the glabella; with the needle inserted less obliquely the distance becomes smaller.

As it is of essential importance that during the whole course the needle does not deviate from the middle line the beginner may as well puncture the patient in a sitting position in which it is easier to keep the needle in the median plane. But in erect position the pressure in the cistern is negative (except in a few pathological conditions, for instance, in Epilepsy) and the fluid therefore does not appear spontaneously but has to be aspirated. By letting the patient force his expiration with glottis closed or move his head into extreme flexion and extension we may succeed in obtaining some fluid. For the same purpose a neck bandage has been advised with two lateral pads for compression of the jugular veins. But with all these methods the fluid will never flow so freely as in horizontal position. The latter has the further advantage that the patient's head can be kept well fixed by an assistant pressing it against an underlying cushion. To compare manometer readings at both the lumbar and cistern punctures the horizontal position is, of course, the only one feasible.

As regards the needles to be used the simplest model is the best, they should be made of good rustproof material, preferably of platinum and iridium which, although somewhat soft, do not break; the needle need not be longer than 8 cm. and about 1 mm. wide. The point should not be elongated too much but more oval in shape and the stylet should fit well into the point of the instrument. I have marked my needles with a line at 5 and 6 cm. from the point; **one should never introduce a needle without exactly knowing at each step how far the instrument has gone.**

Among the various kinds of needles which recently have been constructed there is a model with a broad metal band at the base adapted to the curvature of the neck in order to guarantee a more steady manipulation with the needle. In my experience this construction like similar other still more complicated instruments are only liable to impair the fine touch and sensations which a simple free needle transmits to the finger when piercing through tissues of varying resistance. **The hand should be the guiding instrument and the less interfering with the close contact between needle and hand the easier is the orientation.** The head end of the needle must be fitted to admit a three way stop cock to the upright arm of which a glass manometer can be attached.

Since my publication on cistern puncture in 1924, introducing Ayer's method into German medical literature **various modifications of the technique** have been suggested. Most writers insert the needle at a place higher up just below the palpable lower border of the occipital protuberance or midway between the latter and the spine of axis. The needle is then directed towards

the lower brim of the occipital squama until it impinges upon the bone. By slightly withdrawing the needle and raising its outer end the point is gradually guided downwards along the bone into the foramen magnum.

With this method the direction of the needle is less oblique. Owing to the varying inclination of the occipital squama the orientation at the occiput proved to me more difficult than to fix the spine of the axis as a landmark. For the beginner the indirect method of touching the bone first may render the operation easier but I consider it as a sign of poor markmanship. It is not irrelevant to scrape along the bone with the point of the needle whereby injuries to the venous sinus which encircles the great foramen may easily follow. These haemorrhages which scarcely ever occur with the direct method, although of no harmful consequences yet should be avoided. Furthermore the indirect method involves the danger of breaking the needle and as the latter is proceeding in a direction more rectangular to the medulla the possibility of striking this organ seems to me greater than when the needle is directed more obliquely.

An able "surgical" hand will always prefer the direct method in which the quality of sensations produced by the various resistances represent the finest marks for orientation and make the cistern puncture one of the most elegant punctures. Everyone who has become familiar with its technique must admit that it is less difficult than the lumbar puncture. Certainly in careless hands the possibility of injuring vital parts of the body is greater than with the lumbar puncture, but by carefully observing the details of the method no harm will be done and the danger is not greater than in any other puncture. Among many thousands of cistern punctures, already reported in the literature I was able to find the reports of only four deaths which were due to anatomical anomalies or pathological conditions in the area of the puncture. The only complication which I have seen was in the case already referred to in which the needle had probably injured the medulla by being introduced too far and having deviated out of the middle line. Sudden asphyxia and cyanosis followed which made artificial respiration necessary. The symptoms at first were very alarming but gradually subsided and complete recovery took place after a few days. Two similar cases, also followed by recovery, are described by Ayer.

After-effects as headache, nausea, pain in neck and shoulders are occasionally observed. As already mentioned in over 100 cistern punctures, most of which I have performed during my activity in the P.U.M.C. I personally have never met with the slightest accident, not even haemorrhage. I prefer the cistern puncture as it causes less inconvenience to the patient than the lumbar puncture. None of my patients complained— even after withdrawal of 30-40 c.c. fluid—of headache or other

symptoms of meningism which are so often met with after the lumbar puncture. All other authors agree in the same experience. The explanation of the phenomenon of meningism is probably the disequilibrium of the total liquor column due to leakage at the puncture hole. As the pressure in the cistern in erect position is negative and the covering tissues are more dense no leakage is to be feared and therefore no reaction of the nervous system follows. For this advantage the cistern puncture can be performed in out-patients, the latter need not lie down—(prone position after the puncture should even be avoided in order to prevent leakage)—but can be discharged soon afterwards without disadvantage to their health. In syphilis clinics where the examination of spinal fluid has become a routine, the cistern puncture is therefore the ideal method and has already in some European clinics completely ousted lumbar puncture.

**The cistern puncture as a method of its own as well as in connection with the lumbar puncture has opened up new ways in the diagnosis of the diseases of the central nervous system.** Under normal conditions the spinal fluid obtained by spinal or cistern puncture shows no essential difference as far as cells, protein and sugar are concerned. If any cells were found the fluid of the lower region usually contains a few cells more and accordingly the protein content may also be slightly higher. The mark to which the spinal fluid rises in the manometers will reach the same level provided that the needles are lying in the same horizontal plane.

Oscillations due to pulse and respiration are seen at both manometers but slightly more marked at the cistern according to the larger size of the arteries there. Cough and forced expiration with glottis closed increase pressure and readily produce quick and equal rising of the fluid at both ends. Compression of one or both jugular veins at the neck has the same effect, but the rise shows quicker at the upper manometer. With this method the fluid may easily be brought to 200 mm., or higher marks. If fluid is withdrawn from one end the level quickly sinks at the other manometer.

If with a syringe air is injected through the lumbar needle the bubbles appear at the upper end after about 20 cc. have been introduced, indicating that the passage in the subarachnoidal space is free.

By introduction of coloured media into the liquor its hydrodynamic conditions have been studied. Trypaflavin injected into the ventricles a few minutes after death appeared shortly afterwards in the great cistern, demonstrating herewith that the fluid obtained by cistern puncture at least to some extent is withdrawn out of the ventricles. **By the simple method of the cistern puncture we are thus able to examine the contents of the cerebral ventricles.**



If after withdrawal of 1-2 cc., of spinal fluid by the lumbar puncture 1 cc. of 0.5% solution of phenolphthalein is injected in a sitting person and afterwards the cistern is punctured without changing the patient's position, the fluid will be bound tinted reddish after 8, usually after 13-15 minutes, the first few aspirated drops already showing this reaction which therefore is not produced by the effect of the aspiration. Mercurchrom appears somewhat later, from 15 to 20 minutes. In prone position the colour reaction can be obtained quicker.

From these experiments we learn that **there exists a well established active circulation of the cerebro-spinal fluid within the subarachnoidal space**; the coloured media do not travel by simple diffusion as it takes at least 40 minutes for phenolphthalein in an upright test tube to ascend a height of 50 cm.

If air is injected at the lumbar region together with the colouring agent the latter appears still sooner at the cistern. We have to keep these facts of liquor circulation in mind when performing injections for spinal anæsthesia; too concentrated solutions might seriously affect the higher centres in the brain.

#### **Air Injection.**

As already stated air can be injected by means of a simple sterilised syringe without harm if care is taken that the same amount of fluid is withdrawn. **The air injection serves diagnostic and therapeutic purposes.**

In cases of beginning inflammatory processes of spinal cord or brain the examination of a few cc. of cerebro spinal fluid may not always reveal pathological changes, but we may find such in another specimen of fluid after air has been injected, the latter replacing and bringing into circulation the fluid of the immediate neighbourhood of the affected area. When changes of the brain are suspected the cistern puncture is the method of choice.

In cases in which after the puncture the fluid will not flow out or run freely the injection of a few cc. of air will often bring on the free flow. When a considerable amount of spinal fluid has been withdrawn its replacement by air prevents the development of meningism to a certain extent.

For the purpose of rendering the subarachnoidal spaces and cavities of the brain visible on the x-ray film the air method has become very valuable. In 1918 Dandy introduced 40-300 cc. of air by puncturing the posterior horn of the lateral ventricle through an opening in the skull, in children through the fontanelle (Ventriculography). In 1920 Bingel found that the same effect could be obtained by a much simpler method, namely by injection of air by means of the lumbar puncture. Still more to be recommended is the introduction by the cistern puncture.

By this way already 25 cc. of air give a satisfactory filling of the ventricles whereas with the lumbar puncture at least 45 cc. are needed.

The technique of encephalography as the latter method is called is quite simple. A three way stop cock at the canula is used and the amount of air injected into the cistern as well as that of fluid withdrawn are carefully noted. The total of cerebral spinal fluid measured in bodies, amounts to about 150 cc. of which ventricles and cerebral arachnoidal space each contain about 35 c.c. and the spinal sack the rest. Withdrawn liquor is quickly restored; 100 cc. within about 3 days. With 25 cc. of injected air the third ventricle and the anterior horns of the lateral ventricles become visible, showing the characteristical butterfly figure on the film taken in fronto-occipital position. If more air is injected also the inferior horns, the median longitudinal fissure, the cisterns at the base and the frontal sinuses appear; a transparent zone around the convexity of the brain marks its subarachnoidal space.

As the ventricular system is directly or indirectly affected in most pathological conditions of the brain, the encephalographic method assists in locating obscure brain diseases. With it we are able to recognise disfigurations or dislocations of the ventricles as they are produced by hydrocephalus internus, tumours and shrinking or adhesive processes following inflammations (Epilepsy!). If the lateral ventricles do not fill with air a blockage of the aquaeductus Sylvii may exist due to swelling of the mid-brain in cases of epidemic encephalitis. Instead of air oxygen and carbon dioxide have been used, but are less satisfactory as they are more quickly absorbed; besides oxygen has proved more irritating to the meninges.

The X-ray pictures, preferably stereoscopic pictures, have to be taken immediately after the air injection. In order to exclude fallacies it is advisable to take several films at certain intervals. The correct interpretation of the details of the encephalogram requires a good deal of experience, the method will therefore be of value only in the hands of a clinical expert.

If more than 25 cc. of air are injected headache, nausea giddiness and profuse sweating may inconvenience the patient, although these symptoms are less pronounced in individuals with organic diseases of the central nervous system, when already pathological changes have taken place. We make the same experience with the lumbar puncture after which marked symptoms of meningism indicate rather a functional than an organic ailment.

On account of the disagreeable reactions the encephalography should be applied only in obscure cases when other diagnostic means have failed or in order to corroborate the clinical findings in cases in which operation is considered.

For graphic demonstration of the spinal subarachnoidal space the air injection does not give satisfactory results, but it serves as a most useful method in ascertaining obstructions which interfere with the free liquor circulation within the vertebral canal. The so-called **subarachnoidal block** is produced by intra—and extra medullary processes or by bone diseases of the vertebrae with compression of the medulla. The block may be complete or incomplete and according to its localisation we can distinguish:

1. **The spinal block**, following inflammatory processes, meningitic adhesions, tumours and vertebral caries.
2. **The cistern block**, in cases of pachy—and leptomeningitis when the free flow of the fluid is checked at the continuance of the cerebral into the spinal subarachnoidal space. At this place also tumours or otogenic abscesses of the cerebellum (Zange) may cause lateral deviation of the medulla and thus block the free passage.
3. **The cerebral block** by occlusion of the foramina Magendi et Luschkae in the fourth ventricles, usually followed by hydrocephalus internus.

By means of the double puncture with injection of air or colouring media a **spinal block** can easily be proved: neither air nor stained fluid will appear at the opposite end; artificial increase of intracranial pressure by compression of both jugular veins will readily be responded to by a rise in the cistern manometer, but will not be transmitted to the lumbar end. From the amount of air, we are able to inject at the lumbar region until we meet with resistance, and from the amount of spinal fluid, which has flown out at the same time, the distance to the obstacle can be estimated, provided that the block is complete. If, for instance, we obtain 40 cc. fluid the obstruction is situated high up in the cervical region.

Another **important diagnostic symptom** is the **pain** which is felt by the patient after the air injection and described as radiating from a point at the vertebral column along the ribs to one or both sides. This typical root pain indicates in its projection the level at which the obstruction is situated.

A patient under my observation with complete paraplegia of both legs regularly complained of intense pain at the level of the 4th thoracic after about 25 cc. of air had been injected. At the operation a small extradural tumour was found at exactly the described level. Six weeks after the removal of the growth the patient walked out of the hospital.

The **cistern block** can be diagnosed by the “dry puncture” at the cistern when fluid is obtained at the lumbar region. Further

increase of pressure by compression of the jugulars will not affect the level at the lumbar manometer.

In **cerebral block** the communication between cistern and lumbar space is free, but air injected into the cistern will soon meet with unusual resistance and will not enter the ventricles.

With the aid of the cistern puncture we are further able to ascertain a thrombosis of the sinus transversus. Compression of the jugular vein of the affected side will not cause any rise of fluid in the cistern manometer, whilst compression on the normal side will promptly do so.

With regard to **therapeutic use** the cistern puncture has greatly added to the efficiency in treatment of diseases of the central nervous system.

By means of the double puncture and injection of saline or Ringer's solution into the cistern the subarachnoidal space can be irrigated and the base of the brain as well as the lateral ventricles can be washed out. Cases of tuberculous meningitis and of purulent meningitis after gun shot wounds, which I have treated in this way on account of their rather advanced stages showed only temporary improvement, but in early cases and supported by valent serum the method seems to me very promising. Good results are already reported with intracisternal application of tuberculin in tuberculous meningitis and convalescent serum in encephalitis epidemica. Since we know that it is mainly the brain which is affected by the tetanus toxin its antitoxin should also be applied per cisternam.

It is striking that chemicals and drugs given by way of the cistern are well tolerated by the brain, for instance salvarsan even in higher concentrations than they have been proved suitable for the endolumbar treatment shows no untoward effects. Janessy reports that hypophysin extracts injected into the cistern had no effect on the secretion of urine except when given undiluted; the same dose given intravenously proved less effective. Atropin, adrenalin, cardiázol, optochin, pilocarpin and others have recently been tried with good results. The cisternal application seems especially indicated in cases in which a direct stimulation of the medulla oblongata is required as for instance in sudden cessation of respiration. Thus lobelin injections per cisternam have been found of great value in asphyxia of the new born. Perhaps also the time is not far when general anæsthesia will effectively be produced by a single intracisternal dose!

Referring to the experiments with colouring media a more thorough effect can be obtained when together with the therapeutic agent a few cc. of air are injected whereby quicker circulation is stimulated.

Of the various remedies thus introduced into the cerebrospinal fluid **salvarsan in its intradural application deserves more**

**general attention** for its apparent efficiency in certain cases of syphilis of the C.N.S. Swift Ellis first advised salvarsanised serum for spinal injection; later Gennerich injected salvarsan directly into the spinal fluid.

I have treated over 30 cases with Gennerich's endolumbar method and have found the latter especially efficient in the early and acute stage of meningeal processes.

Later I injected **neosalvarsan directly into the cistern**. The dilution is done in the same way as I have described for the endolumbar method.\* Doses up to 3 mgr. neosalvarsan are tolerated without any untoward after-effects.

The cisternal application is indicated in basal meningitic processes of recent origin with cranial nerve involvement. A striking good result was effected by this method in a case of syphilitic retrobulbar neuritis to which I have already referred in a former paper.\* The patient entered the P.U.M.C. hospital totally blind in both eyes, without even the slightest light sensation. After six weeks' treatment, the left eye had much improved, the man was able to read again and also the colour vision had partly become restored. Although in this case neosalvarsan had been given not exclusively into the cistern, but also intravenously and intraspinally, after my experience in other cases I had the impression that the improvement was especially marked after the drug had been administered per cisternan.

### **Myelography.**

As already mentioned the spinal subarachnoidal space can not be filled with air well enough as to reproduce marked outlines on the X-ray film. To introduce shadow giving substances into the spinal fluid as they are used for instance for graphic demonstration of the renal system, seemed a rather risky experiment, but Siccard a few years ago showed that an iodine compound of even high concentration can be injected without producing an irritant effect. Lipjodol or "huile d'oeillette" as it is called in Siccard's paper, contains 40% iodine and gives a well marked shadow on the film. Probably on account of the incorrect translation huile d'oeillette has figured later on in the literature as iodized poppy seed oil or oil of cloves. It has nothing to do with either of the two, but is an iodine fatty acid compound which does not contain any free iodine; it has the same chemical constitution as iodipin Merck which has been in use for pyelography already for many years.

After experimenting on animals I used 40% Iodipin in my cases with the best result and without experiencing any untoward reaction. Only fluid of white or slightly yellowish colour should be used as iodipin which through long contact with air

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\* Caduceus July 1927 p. 116.

has become dark is liable to irritate the tissues. Also 20% iodipin can be used, but is of no advantage compared with the higher concentrated solution.

**The method of myelography** is quite simple. Siccard originally injected the fluid by way of the lumbar puncture; in this case the patient has to be brought into Trendelenburg's position with elevated hips in order to allow the fluid to travel towards the neck. As the iodipin is also well tolerated when given through the cistern, the latter method is evidently preferable since it saves the patient from changing into inconvenient positions.

After withdrawal of a few cc. of spinal fluid  $1\frac{1}{2}$ —2 cc. of iodipin are slowly injected into the cistern of the sitting patient. Under normal circumstances the iodipin will gradually sink down in the subarachnoidal space and reach the cauda equina in about 5 minutes.

Finally the whole mass collects at the lower end of the lumbar sac, where it can be detected on the film even after several weeks: gradually absorption takes place without causing any irritation.

In cases of a spinal subarachnoidal block the iodipin will be arrested in its free course and collect above the obstruction, producing there a distinct shadow on the film. (Fig. 2 & 3).

In case of an intramedullary tumour the shadow is of a cup like shape with its lower outline concave towards the tumour. If the block is incomplete the main mass of the iodipin is visible as a compact shadow above the obstacle and from there leading downwards along the cord one or several narrow lines occasionally in form of droplets are to be seen. But this picture can only be obtained soon after the injection has been made as the iodipin will gradually pass the obstruction and at last will collect at the lumbar end. Therefore it is necessary in all cases to take several pictures in succession in order to control the course of the shadow; one immediately after the injection—preferably also one before:—and others at certain intervals according to the progress the injected fluid is making. Usually pictures taken  $\frac{1}{2}$ ,  $1\frac{1}{2}$ , 3, and 6-8 hours after the injection will give sufficient information. After-effects as headache, neck or shoulder pains are seldom observed and of no long duration.

The method has nowadays become quite indispensable in the diagnosis of spinal cord tumours. By giving the iodipin through the cistern we are able to locate the upper level of an obstructing process and by performing the same operation by way of the lumbar puncture also the lower level can be determined. **With this combined method a most accurate segmental diagnosis can be made and the surgeon knows exactly where to go in.**

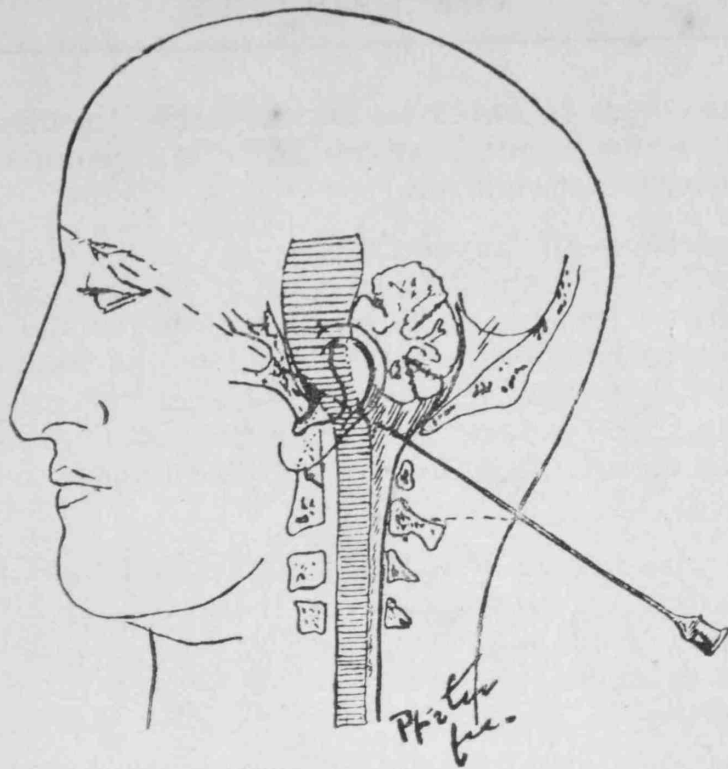


Figure 1. (See page 259.)  
(Cistern puncture)

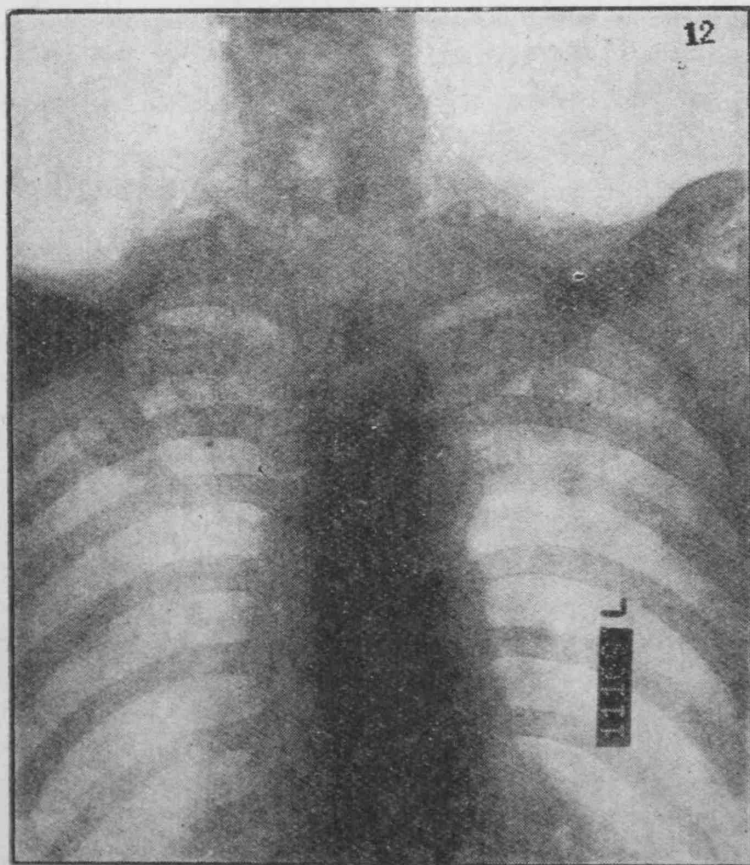


Figure 2. (See page 268.)

\* Shadow of iodipin soon after intracisternal injection.  
The shadows in original photograph can be distinctly observed.

Certainly the myelography does not reveal the nature of the obstruction, for this we have to consult the history and clinical neurological findings. In cases where the latter are insignificant, not allowing any diagnosis as for instance in caudal tumours or meningeal adhesions the myelographic method is the only means which promises some diagnostic help.

The injection of lipjodol has also been used on the hanging head in order to fill the liquor containing spaces of the brain; 30 cases are reported in the literature in which obscure brain conditions could be cleared up by this way. I have no personal experience with the latter method and as in several cases disturbances of respiration and paralysis of the 6th nerve occurred although of only temporary duration, I do not feel inclined to recommend the encephalography with an iodine compound before longer experience has proved its harmlessness.

The following case may illustrate the method of myelography:

Nan, policeman, 40 years admission 5. 7. 25.

No history of syphilis. Present illness started 9 months ago with numbness of fingertips of both hands, 3 months later the same feeling in both legs, sensation of a tight girdle round the chest at the nipple line, patient was unable to walk long distances.

Since 3 months arms and legs can not be moved, numbness of the whole body, pain in the neck, incontinence of urine.

**Examination:** Cranial nerves o.k., complete tetraplegia, only fingers can be moved a little. Head can be moved and shoulders raised, thorax rigid, respiration only by action of the diaphragm. **Sensibility:** Partial anaesthesia for all qualities, but upper level not well defined (in front at about the 2—3 rib.)

Tendon reflexes exaggerated to clonus, skin reflexes absent, Babinski positive. Urine o.k. Blood WaR negative.

#### 8. 7. 24. Double puncture:

Cistern Puncture. •	Lumbar Puncture.
Fluid: colourless, clear.	colourless,
Protein: 0.22 mg per cc.	2.82 mg.
Pressure: 110 mm.	85 m.m.
Cells 3	2
WaR negative	negative.

**Air injection:** 20 cc. at the lumbar region; air does not appear at the cistern nor does the level of the fluid there rise in the manometer, but a distinct pain is felt in the left, later also in the other shoulder (area of the 4th cervical).

At a later date—20th July—the spinal fluid taken by the lumbar puncture was distinctly yellowish in colour and the protein content had risen to 3.11 mg.

• August 4th, 11 h. a.m.: Cistern Puncture 4 cc. clear fluid withdrawn, then 2 cc. 40% iodipin injected. No pain. Immediately afterwards X ray of neck. Film shows a dark shadow from occiput downwards to the intervertebral disc between second and third cervical.



On the two following films taken at 3 h.p.m. and 10 h. a.m. of the next day no essential change, the lower border of the shadow remains at the same level as before (see figure 4).

**Diagnosis: Tumour of the spinal cord at the level of the intervertebral disc between 2nd and 3rd cervical.**

The patient had a slight rise of temperature up to 38.6° the following day and pain in the neck, but this reaction was only of short duration.

**August 10th Operation (Dr. Webster):** Exactly at the place where the tumour has been located a spindle shaped intumescence of the whole mass of the cord was found, which of course was inoperable. The patient died a week afterwards. The swelling was later on diagnosed as syringomyelia.

### Summary.

The importance of the examination of the spinal fluid for diagnosis as well as the good results obtained with the intradural treatment not only in nervous disorders but also in cases of general toxic conditions demand a wider use and more general practice of the spinal puncture.

The suboccipital region offers still more favourable anatomical conditions for withdrawing cerebro spinal fluid than the lumbar region, as the opening through which the needle passes at the cistern puncture is wider; therefore the technique of the latter method is easier.

The cistern puncture is not followed by after-effects (meningism).

The patient need not lie down after the puncture, the cistern puncture is therefore the ideal method to be used in outpatient departments, especially in syphilitic clinics.

The cistern method is indicated:

- (1) In cases in which purulent or septic conditions of the skin and subcutaneous tissue (deep abscesses!) in the lumbar region do not permit the lumbar puncture for fear of infecting the spinal fluid.
- (2) In pachymeningitis lumbalis.
- (3) When the lumbar puncture is impossible or has not been successful.
- (4) When by repeated lumbar puncture the flow of the fluid has become scarce (adhesions!).
- (5) In inflammatory conditions which we consider are still confined to the brain or its meninges, in order to avoid infection of the spinal meninges by draining liquor downwards by way of the lumbar puncture.
- (6) In otogenic abscesses and thrombosis of the transversal sinuses.



Figure 3. (See page 268.)  
 (Same patient as in Figure 2.)  
 One hour after injection.  
 \* Iodipin arrested above the obstruction.



Figure 4. (See page 270.)  
 \* Iodipin arrested at 2-3 cervical  
 —24 hours after cisternal injection.  
*The shadows in original photograph can be distinctly observed:*

- (7) For examination of the cerebral fluid, especially the contents of the ventricles.
- (8) For cerebral decompression.
- (9) For application of drugs to stimulate the respiratory centre in cases of acute asphyxia or in diseases of the brain, medulla and cranial nerves (tetanus, meningococcus and syphilitic meningitis, epidemic encephalitis).
- (10) For injecting air — encephalography — or iodipin—myelography.
- (11) For irrigating the subarachnoidal space in cases of meningitis.
- (12) Cistern and lumbar punctures combined are a valuable help in the diagnosis of subarachnoidal block.

The only objection which can be raised against the cistern puncture is that the method involves the possibility of injuring the medulla oblongata. But by strictly observing the details of the technique injuries can and must be avoided. The psychical factor, the consciousness of the close neighbourhood of the medulla may prevent the method from being generally accepted as a routine by the practitioner, but for hospital practice it is superior to the lumbar puncture and therefore will become the method of the future.

#### Literature.

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**FUNCTIONAL TESTS OF THE LIVER.****S. Y. WONG.**Lecturer in Biochemistry and Pharmacology, University of Hong Kong.

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The liver occupies such an important position in the economy of the body that a reliable method for the test of its functional activity will no doubt render a great service to both experimental biology and clinical medicine. Owing to the many-fold activities this organ plays in metabolism and the complex relationship it has with other parts of the body, the determination of the hepatic function cannot be so simple as that of the renal function for which there are several easy and accurate methods. Although new methods for the functional test of the liver have been proposed from time to time, none has yet been found to be free from serious objection. Being handicapped by the very limited number of references at my disposal, I have not been able to explore the literature of this subject in an exhaustive manner; all I can do at present is to review the few outstanding facts known to me and express my opinion on them as far as my experience goes.

The fact that the transformation of ammonia into urea takes place largely in the liver may at first sight lead one to think that the urea-ammonia-elimination in the urine would afford a safe basis for the interpretation of the hepatic function. But extensive experiments have not lent any support to such conclusion. Though in most cases in which damage has done to the liver, there is a reduction of the amount of urea in the urine, and an increase in the ammonia content, experiments by giving ammonium carbonate or citrate to patients suffering from liver disease have not yielded concordant results. Notwithstanding the general belief that the liver is the main source of the urea of normal urine, exclusion of this organ from the portal circulation does not invariably abolish or even reduce in any marked degree the formation of urea. This may probably be explained on the ground that the ability of urea is not confined to the liver, though it normally contributes a large share, but like the power of protein combustion, urea formation is one of the common characteristics of all living cells.

Normally the excessive amount of aminoacids which are left over from the anabolic construction of living matter is deamidised in a large measure in the liver and consequently there is only a trace of these compounds found in the urine even when a diet very rich in proteins has been taken. But under certain pathological conditions of the liver, as in phosphorus poisoning, yellow atrophy, cirrhosis, cancer, fatty degeneration, syphilis and other severe hepatic disturbances, the elimination of aminoacids

has been found to be notably increased. For this reason, feeding experiment with aminoacids has been looked upon to give promise for the diagnosis of the functional integrity of the liver. However it is now more or less certain that such an expectation cannot be realised; because increase of aminoacid excretion has also been met in a variety of cases in which the liver is not involved, as in pregnancy, gout, leukaemia, after large hemorrhages and in certain infectious fevers.

A misconception regarding the liver as the site of enzymatic anhydration of the creatin led at one time some investigators to expect that the study of the metabolism of this substance might give rise to a method for the determination of the hepatic function. It has been claimed that increase of urinary creatin with reduction of creatinin was found to occur in phosphorus poisoning, and in degenerative processes involving the hepatic parenchyma, especially in hepatic carcinoma. But this claim has not received further support and doubt is thrown upon it. No material change of the creatin metabolism seems to take place when the liver is excluded from the portal circulation.

A method basing upon the synthesis of camphor-glycuronic acid and its subsequent elimination in the urine may deserve more than a passing remark. When camphor is taken into the body, it appears almost in theoretical quantity as glycuronate in the urine in the course of the day. This process is distinctly inhibited in patients suffering from hepatic cirrhosis or severe catarrhal jaundice. Although the synthesis of glycuronic acid cannot be attributed to the liver alone, there is reason to expect that the purposive administration of camphor and its subsequent estimation as glycuronate in the urine will bring out some information regarding the hepatic condition. It requires now, however, a convenient and reasonably accurate method for the estimation glycuronic acid in the urine.

Finally the glycogenic power of the liver respecting various types of sugars may be taken as a plausible measure of the hepatic function. Indeed, for this purpose, the low tolerance of galactose has found a number of advocates. As much as 100-150 grams of glucose may be given to a fasting healthy man at a time without leading to alimentary glucosuria; but more than 30-40 grams of galactose usually results in galactosuria. It is rather a singular fact that galactose and fructose are better tolerated by human diabetic than is glucose. In the case of fructose, this is not difficult to see since it is probably the most reactive of the sugars known. Even when the liver is poisoned with phosphorus and its power of forming glycogen from glucose lost, it is still able to freely construct glycogen from fructose.

Clinical study of alimentary galactosuria seems to offer a way for the functional test of the liver. Normally 30 to 40 grams of galactose can be tolerated without difficulty; but in certain

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disturbances of the hepatic function an appreciable portion of this quantity is found to be excreted in the urine. Positive reaction has been obtained in the various cirrhosis of the liver, in catarrhal jaundice, in phosphorus poisoning, acute yellow atrophy, and the fatty liver of tuberculosis. However, it must not be expected that this rule is invariably followed.

Typical fructosuria is rather of rare occurrence. When it does occur, however, it is found to be frequently associated with disturbances of the hepatic function. Thus alimentary fructosuria has been met in cirrhosis of the liver, in marked biliary stagnation, phosphorus poisoning, and analogous conditions. It should be, however, remembered that such functional faults offer sharp contrast to true diabetes in which the tendency is for glucose rather than for fructose to diminish in tolerance. With the new method I have elaborated for the detection and estimation of small amount of fructose in blood and urine, I expect to throw more light on this question in course of time, and see whether working with this sugar a more reliable test may be established for the hepatic function.



**CLINICAL REPORT OF THE SCHOOL OF MIDWIFERY AND  
GYNAECOLOGY, UNIVERSITY OF HONG KONG.  
MATERNITY DEPARTMENT.**

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**Maternity Bungalow, Government Civil Hospital.**

During the year ended 30th April 1927, 518 cases were admitted to the Bungalow under us. Of these 479 were delivered, 39 patients not in labour were discharged. The total deliveries for the previous year 1925-26 were 463.

There were 6 deaths, 442 infants were born alive, 6 infants died before leaving hospital.

According to the B.M.A. classification of morbidity (i.e. a temperature of 100 or over on any two occasions between the 2nd and 8th day, all deaths included) there were 35 morbid cases:

11 Patients left hospital against advice; no case of eclampsia occurred during the year.

In 72 cases albumin was present in the urine in slight to moderate amount.

In 17, the amount of albumin present was considerable; two patient showed symptoms of definite pre-eclamptic toxæmia, both were treated by starvation and purgation, in one case however as the albumin showed no signs of decreasing after 8 days' starvation, labour was induced; both patients made uneventful recoveries.

There were 15 cases of breech presentation. 3 infants were born dead (one premature, 2 macerated).

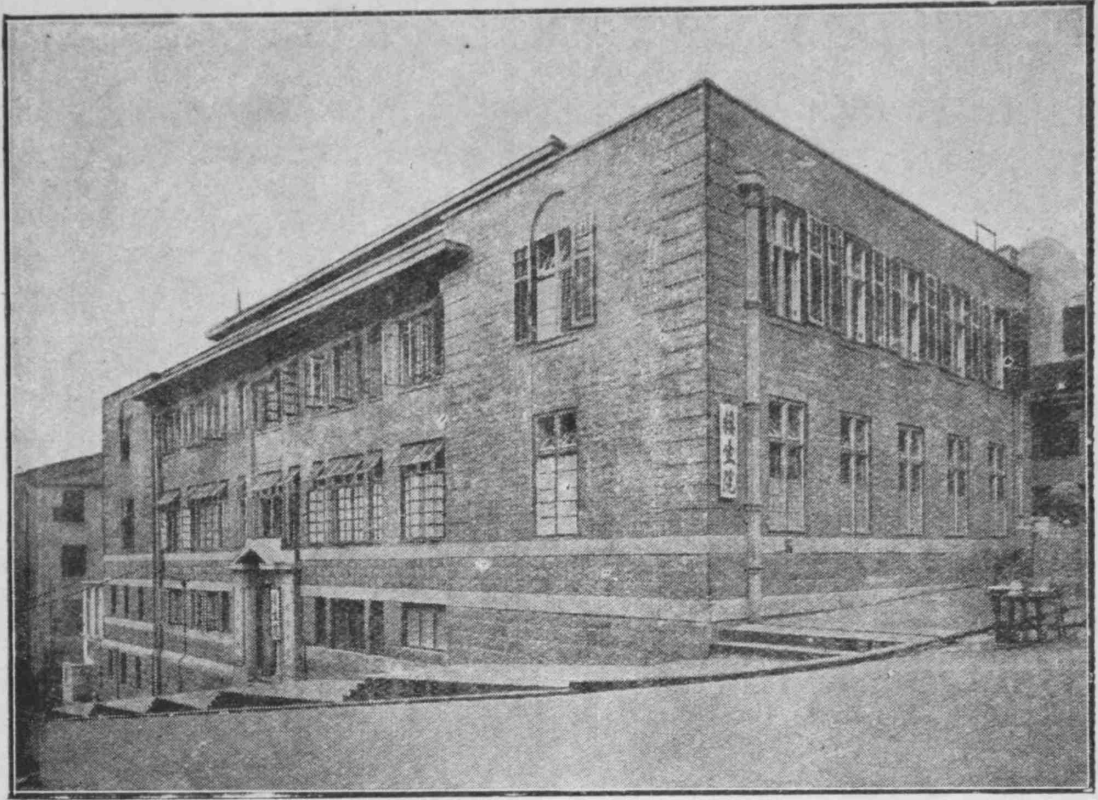
The placenta was manually removed twice. Forceps were applied 7 times, one mother died (beri beri), one foetus was delivered macerated. There were 59 lacerations of the perinaeum. Craniotomy was performed once.

Y.Y.H. age 40, 10 para. History of previous labours 2 forceps, 7 spontaneous, all infants born alive. Forceps were applied but the blades slipped, in view of the patient's history, version seemed to be indicated rather than more any radical procedure. The child was turned, but the after-coming head had to be crushed before it could be delivered. The infant weighed 8 lbs. 2 oz. (without brain) which is large for a Chinese baby. (Average weight of a Chinese baby a term is 6 lbs. 8 oz.). See table XI.

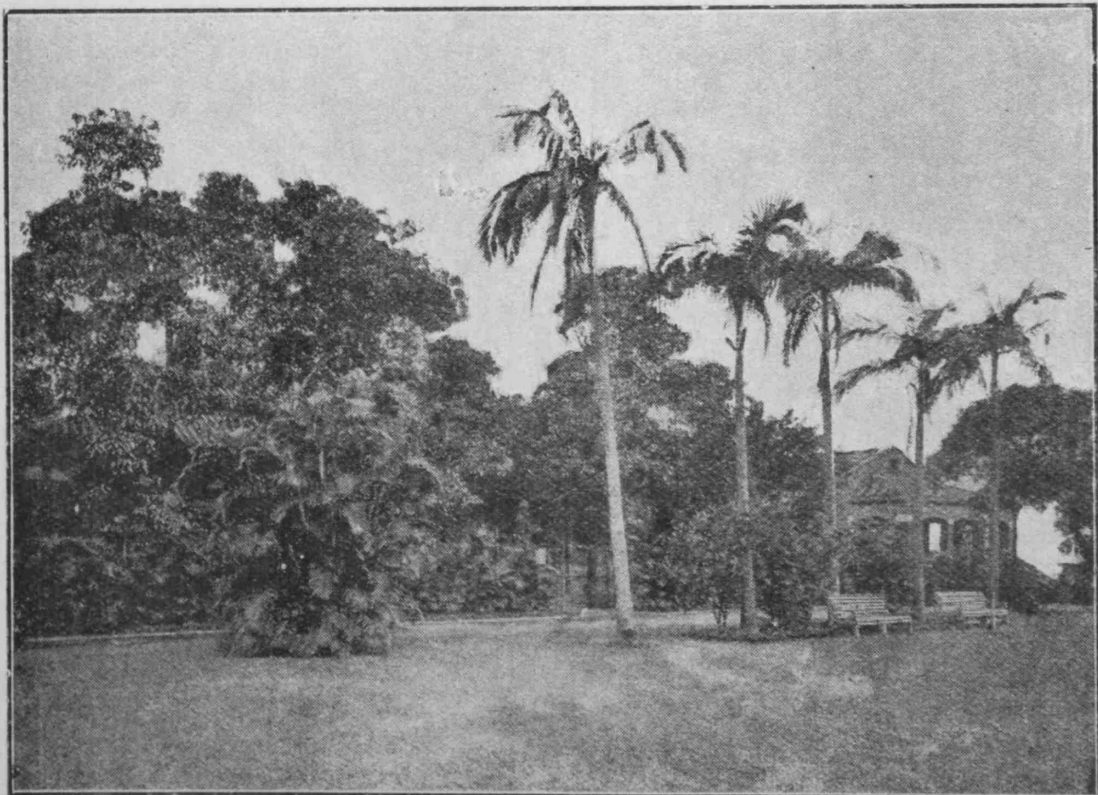
There was no case of accidental haemorrhage during the year, nor was caesarean section performed.

*Morbidity.* Our morbidity rate of 7.3% would be very good for a tropical country, if it fulfilled the B.M.A. conditions, the B.M.A. standard necessitates the patient being under supervision





The Tsan Yuk Hospital, from Western Street.



Lawn, Government Civil Hospital; Maternity Bungalow in Background.

up till the 8th day; I regret to say that only 32.9% of patients remained 6 days or more in hospital, this however shows a slight improvement on the previous year's figure of 16.4% and I wish to thank the nursing staff, for the results they have obtained.

#### *Mortality.*

U.H. age 20. 1 para. She developed Ludwigs angina before the child was born and died on the 5th day from septicaemia (extra genital). (See Table XVIII.)

W. Y. age 34, 7 para, history of being unable to walk for 9 days before delivery. Normal delivery, died on the 4th day, Beri Beri. (See Table XVIII).

T.W.S. age 37, 6 para. Dyspnoea on admission, died on the 5th day. Endocarditis. (See Table XVIII).

C.L. age 33, 4 para. History of being unable to walk for 2 weeks before admission, during labour patient suffered from dyspnoea, and pulse rose to 130. Forceps applied, patient died 12 hours later. Beri Beri. (See Table XVIII).

C.M. aged 37, 10 para., infant born 4½ hours before arrival in hospital, manual removal of placenta; died of sepsis. (See Table XVIII).

W.S.W. age 33, 9 para., central placenta praevia; this patient died of internal hæmorrhage, resulting from a laceration of the cervix. No attempt had been made to dilate the O.S.

I wish to acknowledge my indebtedness to my Assistant, Dr. Pillas, for kindly making out the tables for the cases which were treated in the Government Civil Hospital, and for the interest he has taken in the work, and to the nursing staff for the cheerful way in which they have carried out their very onerous duties, and the tactful manner in which they have handled the students.

#### **Tsan Yuk Hospital.**

During the year our association with this hospital has become very much closer. In January, our Clinical Assistant, Dr. Lam was appointed Resident Medical Officer, and since his appointment Dr. Hickling has been good enough to allow us the privilege of superintending the midwifery work. We have therefore included in our report the midwifery cases of this hospital from January 1st 1927 to April 30th 1927.

Dr. Lam conducts a V.D. Clinic on Monday mornings, but unfortunately many patients who are told to report for treatment fail to do so.

In July 1926 Dr. Hickling arranged for the Matron (Miss Leung) to visit the Rotunda Hospital, Dublin, for 6 months; and fortunately Miss Leung was able to avail herself of this opportunity. She spent two months in the labour, and lying in wards, two months in the gynæcological wards, and operating theatre, and the remainder of the time was spent in the Matron's office, and out-patient department; so that Miss Leung had an excellent opportunity of seeing something of home hospital organisation. It was largely owing to the kindness of the Master, and Matron

of the Rotunda that Miss Leung was able to get an insight into the various departments of the hospital in the short time at her disposal. From our point of view the choice of the Rotunda was a most happy one, as the teaching in our department is based on that of the Rotunda Hospital. Dr. Hickling, we believe, fully appreciates the value of uniformity of teaching, and wishes to model the Tsan Yuk on the lines of one of the older, and well established hospitals such as the Rotunda. Miss Leung's keenness for the advancement of her Hospital has always been very great, and she has returned full of new ideas for its improvement. The theatre and labour ward have been enlarged, and two small wards have been converted into a waiting ward, and surgery respectively, and the whole organisation and technique of the hospital have been revised. An increasing number of patients are being accommodated. The number of admissions and operations in the gynæcological wards were approximately twice that of the preceding year, a very satisfactory position.

Dr. Hickling went home on long leave in April 1927 and since then Dr. Iliff has been good enough to help me on various occasions in the hospital, and I wish to take this opportunity of thanking her for her kindness in looking after the patients for me during my absence on leave. I also desire to express my indebtedness to Professor Wang for his kindness in doing our pathological work, and to the hospital authorities for their willingness to meet our suggestions.

During the months January to April 1927 inclusive, 347 patients were admitted. There were 233 deliveries, 12 patients who were not in labour were discharged, and there were 2 miscarriages. The morbidity rate was 12.8%.

There were 5 deaths, 217 infants were born alive, 2 infants died before leaving hospital.

Four patients left hospital with temperatures, against advice.

Albumin was present in the urine, in slight to moderate amount in 113 patients, and in considerable amount in 3. There was no case of eclampsia.

Breech presentation occurred twice, one infant macerated.

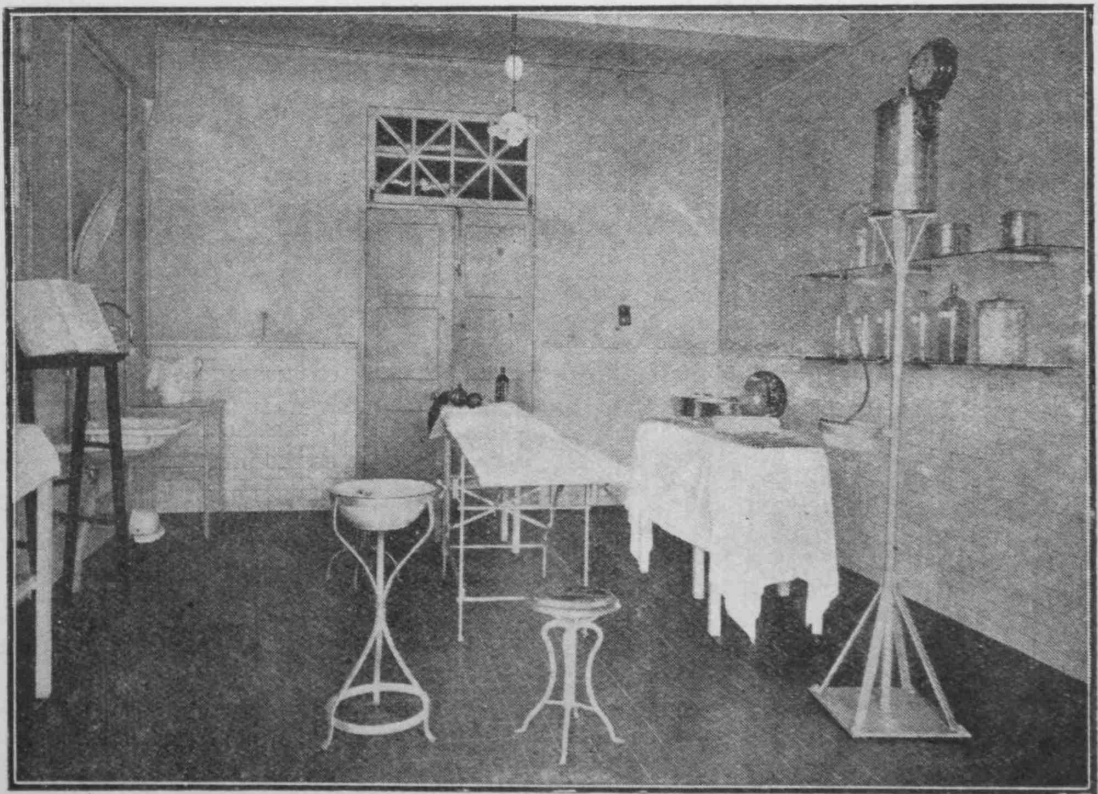
Placenta praevia occurred twice, (1 central, 1 marginal) both mothers recovered, both infants were born dead.

In two patients prolapse of the cord occurred, both mothers recovered, and one child was born alive.

The foetus was delivered by forceps twice, one case was a persistent occipito posterior, the other patient was admitted with a ruptured uterus, the foetus was delivered by forceps, but the patient collapsed before the uterus could be plugged.



Nurses' Dining Room, Tsan Yuk Hospital.



A view of the Theatre, Tsan Yuk Hospital.

Vesicular mole occurred three times.

Craniotomy was performed three times.

*Morbidity.* During this time there were 30 morbid cases, giving a percentage morbidity rate of 12.8%. This rate is probably higher than the average of the hospital, for it includes 5 deaths from somewhat uncommon causes, occurring in a relatively short space of time. At present we are short of bed pans, and pans for washing down the patients; so that pans have to be passed from one patient to another. New pans are on order, and I hope that on their arrival we shall be able to allot a pan to every bed, and mark it with the bed number, and sterilise it after use by boiling. The morbidity rate of the Bungalow is lower than that of the Tsan Yuk, but the difference is not so great as would at first sight appear, in the Bungalow only 32.9% of patients remained 6 days or more in hospital, as compared with 96.4% in the Tsan Yuk. (The minimum charge for patients in the Bungalow is about 1/- per day while that in the Tsan Yuk is about -/6. This may be partly responsible for the difference in the figures.) In septic cases a culture of the uterus is taken, and an autogenous vaccine is prepared. In the event of a temperature being high the uterus is explored and douched.

*Mortality.* Five patients died, their histories are as follows:—

L.A.S. age 32, 3 para., died of haemorrhagic small-pox, the rash appeared the day after delivery, she died on the 4th day, child was vaccinated and was sent to isolation hospital for observation.

I.S.Y. age 21, 2 para., admitted with a history of prolonged labour, forceps were applied, but failed to deliver; as the foetal heart could not be heard, craniotomy was performed. Shortly afterwards patient showed signs of collapse, the uterus was plugged. Patient died 24 hours later. P. M. Rupture of Uterus. See table XVIIIa.

M.K.K. age 25, primipara, admitted with a history of having been 48 hours in labour, and that her relatives had been making vaginal examinations for the purpose of stimulating labour pains. Pulse was 156, and the abdomen tender.

Internal Pelvic measurements normal.

As the foetus appeared to be dead, craniotomy was performed, the clavicles had to be divided in order to permit of the delivery of the shoulders. It was our intention to remove the placenta manually, and at the same time to explore the uterus for possible rupture, unfortunately however the placenta was expelled spontaneously immediately after the foetus was extracted, which made it appear that the uterus was unlikely to be ruptured. The patient's conditions improved somewhat after delivery, but she collapsed and died some hours later. P. M. Ruptured uterus. See table XVIIIa.

Y.K. age 43, 8 para. (5 children alive) Occipito posterior.

Albumin †††, face, hand, and legs oedematous; she was very stout. When signs of foetal distress arose forceps were applied but failed to deliver; the condition of the patient became alarming, pulse 184; the child

was delivered by craniotomy, but unfortunately the patient collapsed almost immediately afterwards. We were unable to obtain a post mortem. See table XVIIIa.

L.T.K. age 25, 5 para.; sent in by a midwife as ruptured uterus, pulse 176, forceps were applied, and the placenta was removed manually, but the patient died before the uterus could be plunged. See table XVIII.

A very large number of patients at both hospitals have albumin in the urine, in the Tsan Yuk 116 out of the total of 147 admissions, in the Bungalow 89 out of a total of 518 admissions, whether the fact that the majority of these patients work hard, and carry heavy loads all through pregnancy would explain it or not, we cannot tell, but as the Tsan Yuk patients are drawn from a poorer class on the whole, it seems possible, or of course one may conclude that the diet is responsible.

I wish to thank to thank my Clinical Assistant, Dr. Lam for the careful way in which he recorded the cases, and made out the tables.

TABLE NO. I.—*STATISTICS OF MATERNITY DEPARTMENT.*

**Nature and number of cases treated:**

Total admissions .....	518
Total deliveries .....	479
Multiparae .....	361
Primiparae .....	118
	} inclusive

**Presentations:**

Vertex, normal rotation .....	443
V. I .....	60.12%
V. II .....	35.08%
V. III .....	2.48%
V. IV .....	2.32%
Vertex, face to pubes .....	4
Breech .....	15
Transverse .....	3
Twins .....	6
Miscarriages .....	11
Abortions .....	8

**Haemorrhages:**

Placenta Previa .....	3
Post partum .....	2
Battledore placenta .....	2

**Abnormalities of cord:**

Prolapse .....	2
Pre-eclampsia .....	2
Albumin in the urine, slight to moderate .....	72



A Corridor, Tsau Yuk Hospital



A Maternity Ward, Tsau Yuk Hospital

Albumin in the urine, considerable .....	17
<b>X-Ray Diagnosis</b> .....	<b>4</b>
<b>Operations:</b>	
Induction of labour and miscarriage .....	1
Suture of perineal lacerations:—	
Complete .....	1
Incomplete .....	68
Forceps .....	7
Version, external .....	1
bi-polar .....	3
internal .....	4
Craniotomy .....	1
Manual removal of placenta:—	
at full term .....	2
<b>Accidental complications:</b>	
Malaria .....	5
Dysentery .....	3
Diarrhoea .....	2
Cellulitis of leg .....	1
Cellulitis of neck (Ludwig's angina) .....	1
Myocarditis .....	1
Endocarditis .....	1
Pernicious Anaemia .....	1
Syphilitic Neuritis .....	1
Neuritis? Beri Beri .....	2
Bronchitis .....	1
Breast .....	2
Venereal ulceration of vulva .....	1
Cystitis .....	1
<b>Morbidity, B.M.A. Standard:</b>	
Average .....	one in 13.68
Percentage .....	7.3%
<b>Mortality;</b>	
Total .....	6
Average .....	one in 79.8
Percentage .....	1.25%
<b>Left Hospital Against Advice</b> .....	<b>11</b>

TABLE NO. II.—*INFANT STATISTICS.*

Total births .....	466
Alive .....	442
Dead:— .....	24
Premature .....	12
Full term .....	1
Recent .....	2
Macerated .....	9
Children born alive who died in hospital .....	6



**Abnormalities:**

Deformity of foot .....	1
Hare lip and cleft palate .....	1
Tongue Tie .....	2
Supernumerary finger .....	1
Syphilitic jaundice .....	1

**Complications:**

Cerebral haemorrhage .....	4
Melaena .....	1
Convulsions .....	1
Purpura .....	1
Ping-pong fracture of skull .....	1
Atelectasis .....	1
Cephal haematoma .....	1
Green diarrhoea .....	6
Icterus neonatorum .....	1





A Gynecological Ward, Tsau Yuk Hospital



A Group taken in the Pyrel, Tsau Yuk Hospital

**Table No. III.** *Pelvic Presentations.*

Para	Total	Dead Children	Remarks
Primiparae .....	4	---	One case of complete tear. No foetal deaths.
Multiparae .....	8	Pre-matured 1 (6½ mths) Macerated 2	Two cases occurred in twin pregnancy. One case associated with ante partum haemorrhage, infant born dead 6½ months.
		Total 3	

**Table No. IV.** *Placenta Praevia.*

Name	Age	Para	Variety	Period of Pregnancy	Presentation	Result to Mother	Result to Child	Treatment and Remarks
C.W.H.	28	4	Lateral	8 month	Vertex II	Recovered	Dead	Spontaneous Delivery.
K.S.	34	5	Lateral	7½ month	Vertex I	Recovered	Dead	Bi-polar version 2 finger os.
W.S.M.	9	33	Central	7 month	Vertex III	Dead	Dead	Bi-polar version 2 finger os. Post Partum Haemorrhage Rupture of cervix into left broad ligament involving left uterine artery Death.
								See Table XVIII.

Table No. V.

*Prolapse and Presentation of the Cord*

Name	Age	Para	Weight of Child	Presentation	Treatment	Result to Mother	Result to Child	Remarks
C. T.	36	8	5½ lbs.	Transverse with prolapse of cord and hand	Internal version	Recovery	Dead	Hand and cord replaced and foot brought down.
L. H.	22	3	—	Transverse with prolapse of left hand and cord	Internal version	Recovery	Macerated foetus	No foetal movements for three days. Hand and cord replaced and foot brought down.

Table No. VI.

*Application of Forceps*

INDICATION	Number of Cases	RESULT TO MOTHER		RESULT TO CHILD		REMARKS.
		Recovered	Dead	Recovered	Dead	
Delayed in Second Stage	5	5	—	5	—	2 occiput to posterior. (Kielland's forceps applied
Pelvic contraction of Outlet . . . . .	1	1	—	1	—	
Cardiac distress . . . . .	1	—	1	—	1	Patient dyspnoeic and restless, myocarditis, os $\frac{3}{4}$ dilated Foetus macerated. See Table XVIII.
<b>TOTAL</b>	<b>7</b>	<b>6</b>	<b>1</b>	<b>6</b>	<b>1</b>	

**TABLE NO. VII.**

*Number of Pregnancy of Patients in whom the Forceps were applied.*

<b>PARA.</b>		<b>Number of Forcep Cases.</b>
2	.....	1
2	.....	1
3	.....	—
4 and over	.....	3

**TABLE NO. VIII.**

*Ages of Patients in whom Forceps were applied.*

<b>AGE</b>		<b>Number of Forcep Cases.</b>
17—25	.....	2
26—30	.....	2
31—35	.....	2
35 and over	.....	1
		—
		7
		—



Table No. IX.

*Destructive Operations on the Foetus.*

Name	Age	Para	Indication	Operation	Remarks
Y.Y.H.	40	10	—	Perforation of after coming head	Several attempts at forceps delivery failed. Internal version Perforation of the after coming head. Weight 8.2 plus 4 ozs. Normal puerperium.

Table No. X.

*Morbidity, B. M. A. Standard*

	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Total Deliveries.....	31	41	47	48	44	49	37	36	36	30	44	36	479
Cases Morbid.....	4	4	4	3	6	4	0	2	4	1	2	1	35

Total number of morbid cases .. .. . 35.

Total average morbidity .. .. one in 13.7

Total percentage morbidity .. .. . 7.3%

Table No. XI.

*Comparative Morbidity in Primiparae and Multiparae.*

Primiparae	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Total Deliveries.....	6	13	13	11	11	12	8	11	11	8	8	10	122
Cases morbid.....	1	2	2	1	2	0	0	1	1	1	1	0	12

Total average morbidity .. .. one in 10.25

Total percentage morbidity .. .. . 9.7%

Multiparae .....	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Total deliveries.....	25	28	33	37	33	37	29	25	25	22	36	26	356
Cases morbid.....	3	2	2	2	4	4	0	1	3	0	1	1	23

Total average morbidity .. .. one in 15.6

Total percentage morbidity .. .. . 6.4%



**Table No. XII. Extra-genital Causes of Morbidity**

Malaria .....	5	Bronchitis .....	1
Diarrhoea .....	2	Ludwig's Angina .....	1
Cellulitis .....	1	Amoebic Dysentery .....	2
Syphilitic neuritis .....	1	Pernicious Anaemia .....	1
Myocarditis .....	1	Beri-Beri .....	1
Endocarditis .....	1	Breast .....	1

**Table No. XIII.**

*Operative Cases Showing Morbidity*

Nature of Operation	Number	Number Morbid	Percentage Morbid	Average Morbidity	Remarks
Forceps .. . . .	7	—	—	—	One case died of myocarditis soon after delivery
Internal Version	4	—	—	—	One case Neglected shoulder presentation with prolapse of hand
Suture of Perineal Lacerations ..	80	4	5%	1 in 20	
Destructive Operations on the Foetus .. . . .	1	—	—	—	Perforation of the aftercoming head
Manual Removal of Placenta .. . . .	2	2	100%	1 in 1	Both cases *B.B.A. attempts at delivery of placenta outside . one case died 5 days later of sepsis
Bi-polar Verson ..	3	—	—	—	One case died of haemorrhage Central Placenta Praevia. Ruptured cervix. (See under Mortality)
Induction of Labour .. . . .	1	1	100%	1 in 1	See under preeclampsia

\* Infant born before arrival in hospital.

TABLE NO. XIV.

*Duration of Stay in Hospital of Morbid Cases.*

Less than 10 days	.....	31 cases	including	2 deaths.
10 to 19 days	.....	4	„	—
20 to 29 days	.....	—	„	—
Over 29 days	.....	—	„	—
Total	.....	35 cases		2 deaths.

Out of these 35 cases, 4 left hospital against advice, 1 with temperature.

TABLE NO. XV.

*Duration of Temperature.*

Under 5 days	.....	32 cases	including	1 death.
5 to 2 days	.....	3	„	1 death.
10 to 19 days	.....	—	„	—
Over 19 days	.....	—	„	—
Total	.....	35 cases		2 deaths.

TABLE NO. XVI.

*Highest Temperature Charted.*

Below 100°	.....	— case	including	— death.
100° to 100.9°	.....	4 cases		—
101° to 101.9°	.....	14		—
102° to 102.9°	.....	9		—
103° to 103.9°	.....	5		1
104° and over	.....	3		1
Total	.....	35 cases		2 deaths.

TABLE NO. XVII.

Number of Morbid Patients who received intra uterine douche 3.

Table No. XVIII.

## Mortality

Name	Age	Para	Admitted	Delivered	Died	Cause of Death	Remarks
C. H.	20	1	28.7.26	29.7.26	3.8.26	Septicaemia	Ludwig's angina—incision and drainage. Spontaneous delivery of a macerated foetus, twelve hours after operation. <i>P. M.</i> sloughing of deep cervical fascia and Oubaxillary tissues hypostatic congestion of lungs gangrenous condition of endometrium and cervix.
W. Y.	31*	7	16.8.26	19.8.26	23.8.26	Neuritis? Beri-beri, Myocarditis	Brought to hospital on a stretcher, unable to walk for 10 days. On Admission, pulse 124, temperature 99.8. Normal delivery, temperature rose to 100. and pulse 152. <i>P. M.</i> Pericardial effusion, hypostatic congestion of lungs, nutmeg liver. Uterus: no evidence of sepsis.
T. W. S.	37	6	17.8.26	20.8.26	25.8.26	Endocarditis	Dyspnoea on admission. Induction with Quinine and Pituitrin Macerated foetus. Normal lochia. Highest temperature 101, No. <i>P. M.</i> done.
C. L.	33	1	7.9.26	7.9.26	8.9.26	Neuritis? Beri-beri	Admitted on a stretcher unable to walk for weeks. Dyspnoea, irregular pulse 130. Forceps applied on a dilated os. Still born foetus. Condition improved a little after delivery. Died twelve hours later.
C. M.	37	10	29.1.27	29.1.27	3.2.27	Sepsis	B. B. A. 4½ hours before admission. Manual removal of placentas. I. U. D.
W. S. M.	33	9	29.1.27	29.1.27	29.1.27	Haemorrhage	Central Placenta Praevia. Bi-polar version of cervix leading into left broadligament. Uterus and Fornix plugged: intravenous saline.

TABLE NO. XIX.

*Induction of Labour.*

(Castor oil, quinine and pituitrin method).

Number of cases successful .....	6
Total number of cases .....	8
Successful cases with intra-muscular in- jection of pituitrin .....	100%
Successful cases with injection of $\frac{1}{2}$ cc. pituitrin into anterior lip of cervix ..	50%

TABLE NO. XX.

*Duration of Stay in Hospital.*

Total number of cases .....	479.
Less than 3 days .....	.4%
From 3 to 5 days .....	63.7%
From 6 to 8 days .....	31.5%
From 9 or more days .....	1.4%



STATISTICS OF THE MATERNITY DEPARTMENT.

TSAN YUK HOSPITAL

January to April, 1927.

Table No. Ia.

Total admissions.....	247	Incomplete...	19
Total deliveries.....	233	Forceps .....	2
Multiparae.....	163	<i>Versions—</i>	
Primiparae .....	70	Internal.....	4
Not in labour.....	12	Craniotomy.....	3
<i>Presentations—</i>		Manual removal of placenta.....	4
Vertex .....	227	<i>Accidental Complications—</i>	
Breech .....	2	Diarrhoea .....	1
Twins.....	1	Bronchitis .....	1
Transverse .....	2	Myocarditis.....	1
Vesicular mole.....	3	Amoebic dysentery.....	1
Miscarriage .....	2	Phthisis .....	1
<i>Haemorrhages—</i>		Pleurisy .....	1
Placenta praevia.....	2	Haemorrhagic Small- pox.....	1
Post partum.....	1	<i>Puerperal ulcer.....</i>	3
<i>Prolapse of cord .....</i>	2	<i>Morbidity B.M.A. Standard—</i>	
<i>Rupture of uterus .....</i>	3	Average one in .....	7.7
<i>Albuminuria —</i>		Percentage.....	12.8
Slight to moderate.....	113	<i>Mortality—</i>	
Considerable .....	3	Total .....	5. %
<i>Operations—</i>		Average.....	1 in 47
Pelvimetry .....	1	Percentage.....	2.17%
Suture of perineum			
Complete.....	0		

Table No. IIa.

*Infant Statistics.*

Total births .. .. .	233
Alive .. .. .	217
Dead—	
Premature .. .. .	5
Full term .. .. .	4
Recent .. .. .	0
Macerated .. .. .	7
Children born alive who died in hospital .. .. .	2
<i>Complications—</i>	
Atelectasis .. .. .	1
Green Stools .. .. .	1
Ophthalmia .. .. .	2

Table No. IIIa.

*Pelvic Presentations.*

Para	Total	Children	REMARKS
Primipara	Nil	1	The live baby was full term (see weighing 7 lbs.)
Multiparae	2	1	The macerated was premature (7½ months).

Table No. IVa.

*Placenta Praevia.*

Name	Age	Para	Variety	Period of preg.	Presentation	Mother	Children	REMARKS
W. M.	38	2	Central	7 months	Vertex	Alive	Dead	Bipolar Version Morbid 5 days Highest temp 100-6
P. S.	30	7	Marginal	7½ months		Alive	Dead	Internal version Manual removal of placenta.

Table No. Va. *Prolapse of Cord.*

Name	Age	Para	Wt. of Child	Presentation	Mother	Children	Remarks
C. S.	31	3	6½ lbs.	Transverse	Recovery	Alive	Cord prolapsed with right hand Internal version.
L. F. M.	27	5	5½ lbs.	Transverse	Recovery	Dead	Cord prolapsed alone. Morbid 7 days. Highest temp. 103.8

Table No. VIa. *Application of Forceps.*

Indications	No. of cases	Mother	Child	Remarks
Persistent occipito-post	1	Recovered	Alive	The patient was cedematous Albuminuria + + + Head on perineum 6 hours without advance
Toxaemia	1	Dead	Dead	Patient was very cedematous Albuminuria + + + Heart rapid Forceps failed Craniotomy
Ruptured uterus	1	Dead	Dead	Patient sent in as ruptured uterus Pulse 170 Abdomen tender Child delivered by forceps Manual removal of placenta Died before attempt to plug uterus



**Table No. VIIa.**

*Number of Pregnancy of Patients in whom  
the forceps were applied.*

Para	No. of forceps cases
1	1
2	1
3	0
4 and over	1
Total	3

**Table VIIIa.**

*Ages of patients in whom forceps were  
applied.*

Age	No. of forceps cases
17-25	2
20-30	0
31-35	0
35 and over	1
Total	3

Table No. IXa.

*Destructive Operations On the Foetus.*

Name	Age	Para	Indications	Operation	Remarks
Y. K.	43	8	Albuminuria + + + Meconium passed	Perforation and Extraction	Patient looked toxic Forceps failed Pulse rose to 184 Died following extraction of child. <i>See Table.</i>
M. K. K.	25	1	Pulse 156 Vomiting Tender abdomen No pains Forceps failed	Perforation and Extraction	On admission cervix torn. Uterus ruptured.  <i>See Table.</i>
I. S. Y.	21	2	Delayed 2nd Stage Forceps failed	Perforation and Extraction	Delayed labour Very weak pains Died of ruptured uterus.  <i>See Table.</i>

Table No. Xa.

*Morbidity B.M.A. Standard*

	January	February	March	April	Total
Total deliveries	106	50	53	66	235
Cases Morbid	7	8	9	6	30

Total morbid of morbid cases 30  
 Total average morbidity 1 in 7.7  
 Total percentage morbidity 12.8%

**Mortality, Total 5**

Average 1 in 4.7  
 Percentage 21%  
 Left hospital against advice 4

Table No. XIa.

*Comparative Morbidity in Primiparae and Multiparae*

	January	February	March	April	Total
Primiparae					
Total deliveries	17	17	19	18	71
Cases Morbid	4	2	7	2	15

Total average morbidity 1 in 4.7  
 Total percentage morbidity 22.1%

	January	February	March	April	Total
Multiparae					
Total deliveries	49	33	34	18	164
Cases Morbid	3	6	2	1	15

Total average morbidity 1 in 10.9  
 Total percentage morbidity 0.9%

Table No. XIIa.

*Extra-genital Causes of Morbidity.*

Diarrhoea (no amœba)	..	..	1
Bronchitis	..	..	1
Myocarditis	..	..	1
Dysentery (Amoebic)	..	..	1
Phthisis	..	..	1
Pleurisy	..	..	1
Small pox	..	..	1

Table No. XIIIa.

*Operative Cases Showing Morbidity.*

Nature of Operation	Number	No. Morbid	Percentage	Average	Remarks
Suture of torn perineum	19	3	15.7%	1 in 6.3	
Bipolar version	2	1	50%	1 in 2	Placenta praevia morbid 5 days. Highest temp. 100.6
Internal version	2	1	50%	1 in 2	Transverse presentation with prolapse of cord and left hand.
Destructive operation on the foetus.	4	4	100%	1 in 1	3 died of ruptured uterus. 1 died of shock.

**Table No. XIVa.***Duration of stay in hospital of Morbid cases.*

Less than 10 days	23 cases including	5 deaths
10 to 19 „	7	0
20 to 29 „	0	0
over 29 „	0	0
-----		-----
Total 30		5

4 cases left hospital with temperatures against advice.

**Table No. XVa.***Duration of Temperatures.*

Under 5 days	23 cases including	4 deaths
5 to 9 „	7 „	1 death
10 to 19 „	0	0
over 19 „	0	0
-----		-----
Total 30		5

**Table No. XVIa.***Highest Temperature Charted.*

Below 100°	0 case including	0 death
100 to 100·9°	14 cases	4 deaths
101 to 101·9°	8	0 „
102 to 102·9°	2	0 „
103 to 103·9°	3	1 death
over 104°	3	0 „
-----		-----
Total 30		5

**Table No. XVIIa.**

Total number of morbid patients who received  
intra-uterine douche—12.

Table No. XVIIIa.

*Mortality.*

Name	Age	Para	Admitted	Delivered	Died	Cause of death	Remarks
L. T. K.	25	5	9-2-27	9-2-27	9-2-27	Ruptured uterus	Sent in by a midwife as ruptured uterus Pulse 176. Vomiting Forceps Manual removal of placenta Died before attempt to plug
Y. K.	43	8	25-2-27	25-2-27	25-2-27	Shock	Patient was toxic Albuminuria +++ Forceps failed Perforation and extraction
M. K. K.	25	1	29-3-27	29-3-27	30-3-27	Ruptured uterus	On admission pulse was 156 with vomiting and tender abdomen Cervix torn Craniotomy
L. A. S.	32	3	14-4-27	16-4-27	20-4-27	Haemorrhagic small pox	Haemorrhagic rash appeared the day after delivery Died 3 days later
I. S. Y.	21	2	22-4-27	22-4-27	23-4-27	Ruptured uterus	Delayed 2nd stage Forceps failed Craniotomy

*Hydatidiform Mole*

Table No. XIXa.

Name	Age	Para	Period of Pregnancy	Urine	Amount of haemorrhage during removal	Height of uterus in month	Treatment	Remarks
L. N. L.	29	3	4	—	Moderate	6	Uterus cleared with fingers and blunt curette	Admitted for haemorrhage. On vaginal examination vesicles found
L. W. M.	36	7	1	No albumen No sugar	Slight	3	Uterus curetted to remove fragments	Patient expelled mole size of a lamb's heart partly vesicular
H. C. H.	26	2	—	Albumen and Sugar	Slight foetid		Curette for retained fragments	Before admission patient was seen by a doctor who removed the mole





## GYNAECOLOGICAL DEPARTMENT.

### Tsan Yuk Hospital.

The gynaecological department is developing in a very encouraging manner, and patients seem much more willing to come into hospital, than they were. There is space for the accommodation of 25 beds, including 3 isolation wards, on the second floor, and hospital organisation is facilitated by the fact that the theatre, and surgery, are on the same floor. The first floor is devoted to midwifery. During the year 97 patients were admitted under us, (Dr. Hickling or myself), a figure which is more than double that of the preceding year.

Of these 97 patients 70 were operated on, 3 died.

*Prolapse of the uterus.* There were 7 cases, as against 3 at the G.C.H. The Tsan Yuk is very much in touch with boat women, in whom prolapse appears to be common. Many of our patients are under the menopause, consequently we have rather endeavoured to avoid doing interpositions. Latterly we have been making a similar incision to that of the Manchester School, but in addition we have found it advisable to vaginally suspend the uterus, and shorten Mackenroth's ligaments.

*Ovarian cysts,* there were three cases. In one of these cases, the cyst, which extended above the umbilicus, was densely adherent to the omentum, the posterior abdominal wall, and the pelvic brim on the left side. The adhesions were so dense that it was obviously quite impossible to remove the cyst. On tapping the cyst a large quantity of bluish pus escaped, from which a pure culture of *B. Pyocyaneus* was obtained. A portion of the cyst wall was brought up into the wound, and a drainage tube inserted, and stitched into place. The abdomen was drained. The patient had no rise of temperature following the operation she was treated with an autogenous vaccine. The sinus completely closed up in about 12 weeks.

*Mortality.* Three patients died, (two from cancer).

K.A.L. age 46, carcinoma of the cervix.

The abdomen was opened, but the condition found to be inoperable. Patient collapsed a few hours after the operation.

C.L.C. age 29, carcinoma of cervix, pin hysterectomy patient died of post operative shock.

C.F.W. age 40. Prolapse operation performed from which she recovered completely; the position of the uterus was not, however, very satisfactory, and it was decided to perform an Alexander Adams's operation, and at the same time remove a stone from her bladder, she died from 12 hours later, quite suddenly. No post mortem was obtained.

### Gynæcological Ward, Government Civil Hospital.

During the year ended 30th April, 1927, there were 103 admissions to this ward, as against 115 admissions the previous

year. Of these, 52 patients were operated on, 3 refused treatment. There were 5 deaths, 4 of which were attributable to cancer.

*Prolapse of the uterus.* Three patients.

*Tubal pregnancy.* There were 5 cases, as against nil in the Tsan Yuk.

*Ovarian cysts.* There were 15 cases. In one case the cyst contained pure pus, which proved to be sterile.

*Strictures of the vagina.* This condition is comparatively common, in one case in which the stricture only admitted a match, it was ascertained that during labour 10 years ago, the child was delivered dead by the aid of a metal hook.

Another case C.K. age 26, 1 child two months old. The interior of the bladder wall could be seen protruding into the upper part of the vagina, the vagina was completely shut off from the cervix, by dense cicatricial tissue, owing to the recent pregnancy there were no symptoms due to the retention of menstrual blood, there was a complete tear of the perinaeum. The Professor of Surgery kindly saw the case, and agreed with me that a hysterectomy should be performed first, and at the same time the perinaeum repaired. This was done; and at a later date we endeavoured to completely close the vagina, in order to convert it into an auxiliary bladder, as there was little hope of repairing the vesico vaginal fistula. When she left hospital, there was a little leakage, but we hope that she will come up again, at a later date.

#### *Mortality.*

L.Y. age 51. Laparotomy. inoperable adeno carcinoma of the ovary, patient died in hospital.

W.A.H. Ovariectomy, solid ovarian tumour, patient died of peritonitis.  
B.A. Capsulatus.

O.J. aged 37, Salpingectomy, pyosalpinx, abdomen drained, patient died of general peritonitis.

C.Y. age 56, vaginal hysterectomy, carcinoma of cervix, cystitis, and pyonephrosis, died in hospital. It should have been explained in our previous report that we sometimes do a vaginal hysterectomy in carcinoma, when we know that the patient will not stand a Wertheim's operation, and that we regard the former operation as one of necessity and not one of choice. In this case the patients general condition was very poor.

T.Y. age 58, 1 child born 37 years ago.

On admission to Tsan Yuk Hospital there was a complete stricture of the vagina, rectal examination, the uterus was found to be enlarged to the size of a 5 months pregnancy, and very soft, there was some thickening in the region of the cervix. On opening the abdomen the uterus appeared to be free, and was drawn up into the wound by a single toothed volsellum, but as soon as the volsellum was applied it was obvious that the size of the uterus was due to a condition analogous to hæmatometra, for a thick reddish brown fluid escaped under considerable pressure through the holes the volsellum had made, the cervix was found to be fixed.

As the condition was inoperable, and the abdomen was closed; the patient was subsequently discharged from the Tsan Yuk Hospital. She afterwards attended the Out-Patient Clinic at the Government Civil Hospital, and we admitted her there. In order to relieve pressure, the vaginal stricture was incised.

The patient was treated in hospital until she died, (some two months after the first operation). P.M. Bladder necrotic, one kidney was fibrotic, the other showed multiple abscesses, carcinoma of the cervix.

I am indebted to Drs. Pillai and Lam for having made out the gynæcological tables of the two hospitals.

#### TABLE NO. I.

Number of admission to the Government Civil Hospital ..	103
Number of operations: Government Civil Hospital .....	52
Number of admission to the Tsan Yuk Hospital .....	97
Number of operations: Tsan Yuk Hospital .....	70

#### TABLE NO. II.

##### *Nature and Number of Operations.*

Vulva—	G.C.H.	Tsan Yuk.
Papilliferous cyst adenoma .....	1	—
Granuloma of clitoris .....	1	—
Imperforate hymen .....	1	—
Bartholin Abscess .....	2	1
Perineum—		
Complete tear .....	3	1
Incomplete tear .....	3	10
Bladder—		
Removal of Calculus .....	—	2
Urethra—		
Repair of Sphincter .....	2	2
Excision of Hypertrophied tissue .....	—	2
Vagina—		
Removal of foreign body .....	—	1
Vesico-vaginal fistula .....	1	—
Anterior colporrhaphy .....	2	—
Perinæorrhaphy (complete) .....	—	1
Posterior colpotomy .....	2	—
Uterus—		
Curettagé .....	6	21
Prolapse (Procidentia) .....	3	7
Myomectomy .....	2	1
Ventro-suspension (abdominal) .....	10	9
Subtotal Hysterectomy* .....	2	9
Vaginal Hysterectomy .....	1	1

Cervix—		
Trachelorrhaphy .....	2	8
Amputation .....	2	7
Carcinóma .....	1	—
Polypus .....	—	1
Tubes and Ovaries—		
Salpingo-oophrectomy (with other operations) .....	1	1
Ovariotomy .....	15	3
Salpingectomy (with other operations) .....	2	5
Tubal pregnancy .....	5	0
Para-ovarian cyst .....	2	0
Miscellaneous—		
Appendix .....	1	1
Laparotomy (Exploratory) .....	3	2
Breast Abscess .....	5	—
Cystoscopy .....	2	—
Alex Adams .....	1	1
Removal of tissue for section .....	—	2
Abscess of buttocks .....	—	1
Excision of breast (carcinoma) * .....	—	1

TABLE NO. III—

*Nature and Number of Cases Treated Without Operation.*

	G.C.H.	Tsan Yuk.
Refused treatment .....	3	13
Operation contra-indicated by general health .....	1	—
No operation indicated .....	—	3
Pregnancy with gonorrhœa .....	2	—
Pregnancy .....	—	1
Salpingitis .....	10	2
Pelvic cellulitis .....	1	—
Sub involution .....	—	1
Inoperable malignant disease .....	2	2
Cystitis .....	—	1
Syphilitic ulceration of vulva .....	1	1
Venereal, (non Syphilitic) .....	—	1
Congenital Syphilis .....	1	—
Urethritis .....	—	1
Peripheral neuritis .....	1	—
Pruritus Vulvae .....	—	1
Post-partum neuritis .....	1	—
Retro-verted uterus with amenorrhœa .....	4	—
Constipation .....	1	—

\* See foot note on page 315.

Table No. IV.

*Hysterectomy (Abdominal)*

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	H.	28-9-26	39	Fibroid	Sub-total	Recovery	Size of foetal head. Double oophrectomy.
2	G.K.	24-1-27	26	Complete Stricture of Vagina	Sub-total	Recovery	Condition following child birth. Vesico-vaginal fistula: to avoid Haemato-metra.
See Table X	C.Y.	10-1-27	—	—	Hysterectomy (Vaginal)	—	—

Table No. V.

*Myomectomy*

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	C.H.	5-10-26	40	Fibroid complicating pregnancy	Myomectomy (Abdominal)	Recovery	Size of football. Abortion five days after operation.

## Ovariectomy.

Table No. VI.

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	L.Y.	1-6-26	51	Adeno-carcinoma of ovary.	Lap. Inoperable	Died	Case operated by the Surgical Unit two years ago, then adeno-carcinoma.
2	Y.K.H.	1-6-26	27	Left Broad Ligament Cyst. Right Papilliferous Ovarian Cyst.	Lap. Inoperable	No improvement	Growth fixed. Piece sectioned. Report Papilliferous Cystadenoma.
3	L.S.	28-7-26	32	Left Ovarian Cyst	Ovariectomy	Recovery	Size of foetal head.
4	K.N.S.	7-8-26	45	Right Ovarian Cyst	Ovariectomy	Recovery	26 pints of fluid evacuated weight 15 lbs.
5	L.C.Y.	24-8-26	17	Left Ovarian Cyst	Ovariectomy	Recovery	12½ pints. Unilocular.
6	S.L.	19-10-26	27	Right Ovarian Cyst	Ovariectomy	Recovery	Size of football.
7	C.S.F.	5-10-26	28	Left Ovarian Cyst	Ovariectomy	Recovery	Size of foetal head. Papilliferous cyst of right ovary. Secondary deposits in Omentum and intestines.
8	L.S.	26-10-26	38	Right Ovarian Cyst	Ovariectomy	Recovery	Size of football. Calcified ovary.
9	C.C.	6-11-26	25	Right Ovarian Cyst	Ovariectomy	Recovery	Simple Ovarian Cyst.
10	C.S.	9-12-26	39	Left Ovarian Cyst	Ovariectomy	Recovery	Multilocular cyst.
11	W.A.H.	24-2-27	41	Solid Ovarian Tumour	Ovariectomy	Recovery	General Peritonitis. Organism B.A. capsulatus.
12	T.C.S.	8-3-27	20	Right Ovarian Cyst	Ovariectomy	Recovery	Recovery.
13	C.L.	15-4-27	22	Left Ovarian Cyst	Ovariectomy	Recovery	8 pints of pus evacuated.
14	L.A.M.	25-4-27	18	Solid Ovarian Tumour	Ovariectomy	Recovery	Weight 9½ lbs.
15	W.Y.E.	12-4-27	26	Right Ovarian Cyst	Ovariectomy	Recovery	Partly ruptured.

Table No. VII. Salpingectomy

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	O.J.	28-7-27	27	Pyosalpinx	Abdomen drained	Dead	General Peritonitis. Small fibroid, size of a hazel nut.
2	C.S.	6-9-26	33	Pyosalpinx	Abdomen drained	Recovery	Could not drain through Douglas Pouch, owing to matting of intestines.
3	C.T.	28-9-24	23	Retroverted uterus with thickened tubes on both sides	Resection of right tube, left ovary and right tube	Recovery	Uterus suspended by fundus and round ligament.
4	W.Y.	23-11-26	28	Retroversion (fixed) with salpingitis	Excision of left tube	Recovery	Uterus suspended.
5	Y.S.Y.	29-3-27	24	Retroversion with salpingitis	Excision of left tube, and ovary and right tube	Recovery	Uterus suspended by fundus and round ligament.

Table No. VIII.

## Extrauterine Pregnancy

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	M.H.	1-8-26	25	Ruptured Extrauterine	Excision of left tube and sac	Recovery	Uterus ventrally suspended. Rupture took place two weeks before admission. Intravenous saline.
2	M.W.S.	1-9-26	28	Ruptured Extrauterine	Excision of right tube and sac	Recovery	Intravenous saline.
3	M.L.R.	12-10-26	31	Ruptured Extrauterine septic left sided	Abdominal and vaginal drain	Recovery	Ruptured three weeks before admission and septic.
4	S.Z.	5-9-26	25	Ruptured Extrauterine	Excision of left tube	Recovery	Ruptured three weeks before admission.
5	L.S.	27-11-26	24	Ruptured Extrauterine	Excision of left tube and sac	Recovery	Ruptured twenty days ago.



Table No. IX.

*Prolapse.*

No.	Name	Date	Age	Disease	Operation	Result
126	C.K.S.	21-6-26	26	Complete prolapse.	Curettagé Shortening of Mac lig; Supra Vaginal amput of Cervix Post Colpo perinaeorrhaphy.	R.
188	T.A.M.	30-12-26	48	Prolapse and rectocete.	Curettagé Shortening of Mac lig Supra Vaginal amput of Cervix Post Colpo perinaeorrhaphy.	R.
209	W.L.	20-3-27	38	Prolapse and lacerated Cervix.	Curettagé Supra Vaginal amput of Cervix Shortening of Mac lig Post Colpo perinaeorrhaphy.	R.

Table No. X. *Miscellaneous Operations.**(only important major operations are included)*

No.	Name	Date	Age	Disease	Operation	Result	Remarks
1	L.S.H.	9-5-26	27	Plastic Peritonitis	Laparotomy	Recovery	Drainage of abdomen.
2	C.Y. <i>IV to Table IV.</i>	10 1-27	56	Carcinoma of Cervix	Vaginal Hysterectomy*	Died	Cystitis-pyonephrosis toxaemia.
3	T.Y.	19-1-27	58	Stricture of Vagina due to carcinoma	Dilatation of Stricture and removal of piece for Section Inoperable	Died	Pyometra-cachexia.
4	L.F.H.	18-8-26	35	Fixed Retroversion and salpingitis	Ventral suspension	Recovery	Modified Guillaume.
5	C.Y.M.	22-12-26	28	Placenta succenturiate	Removal with Schultz forceps	Recovery	Bleeding two weeks after delivery.
6	C.Y.M.	5-1-27	32	Moveable Retroflexion	Alexandra Adams	Recovery	

\*See Page 307. See under Gynaecological Ward G. C. H. Mortality.

## TABLE NO. XI.

*Table of Compound Operations.*

Nature of Operations	No. of Cases.
Vaginal Repair .....	2

Under the heading of "vaginal repair" are included such operations as perineorrhaphy, trachelorrhaphy, amputation of cervix, colporrhaphy.

\* *Note.* One supra Vaginal Hysterectomy and one excision of breast was performed by Dr. Balean.



Table No. IVa.

*Hysterectomy.*

No.	Name	Age	Disease	Date	Operation	Result	Remarks
55	C. L. C.	29	Large cauliflower growth of cervix adherent to bladder	14-10-26	Pan hysterectomy	Death	Died after operation from shock.
85	T. M.	42	Erosion of cervix	3-3-27	Vaginal hysterectomy	Recovered	Cervix eroded and hypertrophied. Perineum repaired

Table No. Va

*Myomectomy.*

No.	Name	Age	Disease	Date	Operation	Result	Remarks
117	C. K.	41	Myoma Size of a cocoa nut	20-4-27	Myomectomy through vagina	Recovery	Portion of tumour removed by scissors and Shultz's spoon forceps. Hand passed up to fundus to free attachment. Tumour size of pineapple removed.

Table No. VIa.

Ovariectomy.

No.	Name	Age	Disease	Date	Operation	Result	Remarks
61	L. C. S.	21	Tumour size of orange in lower abdomen.	7-12-26	Ovariectomy	Recovery	Ventro-Suspension.
69	C. Y. T.	50	Tumour in abdomen adherent to umbilicus.	17-1-27	Ovariectomy	Recovery	A cyst of the R. ovary adherent to R. rectus muscle. Greasy yellowish fluid escaped on rupturing the cyst. Hairs found inside.  Report from pathologist—Dermoid undergoing carcinomatous change.
110	C. L. S.	31	Tender tumour in abdomen Size of 7 months pregnant uterus.	12-4-27	Laparotomy for ovarian cyst.	Recovery	Cyst adherent to omentum and post abdominal wall and pelvic brim. Impossible to free the cyst which was tapped. Greenish pus escaped. Cyst still draining (over 2 months).  Report from pathologist—Pus contains B. pyocyanus. Vaccine given.

Table No. VIIa.

*Salpingectomy (Abdominal)*

No.	Name	Age	Disease	Date	Operation	Result	Remarks
48	C. P.	28	Uterus retroverted and fixed	30-9-26	R. Salpingectomy Ventre-Suspension	Recovery	Both tubes occluded
57	Y. W. T.	27	Uterus retroverted Thickening on both sides	27-10-26	Double Salpingectomy Ventre-Suspension	Recovery	Many adhesions Appendicectomy also done
103	Y. M. F.	26	Uterus enlarged retroverted and fixed Tear of perin.	14-4-27 15-4-27	L. Salpingectomy Ventre-Suspension  Perineorrhaphy	Recovery	Tube occluded R. tube not found
119	H. K.	25	Vertical uterus	28-4-27	L. Salpingectomy Ventre-Suspension by fundus and round ligaments	Recovery	
120	Y. C. A.	22	Uterus retroverted and acutely ante-flexed Thickening on rt. lateral fornix.	26-4-27	Double Salpingectomy L. Oophorectomy Modified Gilliam Curettage	Recovery	Numerous adhesions. Both tubes occluded and distended L. ovary cystic. Uterine end of tube dissected out and closed over with a mattress Suture. Round ligaments shortened.

Table No. VIIIa.

*Ventro-Suspension. (uncomplicated)*

No.	Name	Age	Disease	Date	Operation	Result	Remarks
105	M. Y. L.	33	Retroversion	15-4-27	Ventro-Suspension.	Recovery	No adhesion.
106	L. M. C.	22	Retroversion Tear of cervix	14-4-27	Modified Gilliam Ant. colpo-perin.	Recovery	Adhesions separated. Both tubes occluded.
116	W. Y.	28	Retroversion uterus apparently fixed.	20-4-24	Modified Gilliam	Recovery	Adhesions.
118	I. I.	31	Retroversion of uterus and erosion of cervix.	24-4-27	Trachelorrhaphy Ventro-Suspension.	Recovery	Adhesions separated around left tube.

Table No. IXa.

*Prolapse.*

No.	Name	Age	Disease	Date	Operation	Result
26	C. F. W.	40	Procidencia Vesical calculus	7-5-26 24-5-26	Supra-vaginal amputation of cervix Shortening of Mackenrodt's and utero-sacral ligaments Perineorrhaphy Alexander Adam's operation Supra pubic cystostomy	Death
60	C. T. C.	30	Tear of cervix Uterus prolapsed and retroverted	1-12-27	Supra-vaginal amputation of cervix Shortening of Mackenrodt's ligaments Perineorrhaphy Ventreo-suspension	Recovery
76	T. K.	28	Procidencia Tear and hypertrophy of cervix	27-1-27	Supra-vaginal amputation of cervix Shortening of Mackenrodt's and uters-sacral ligaments Perineorrhaphy	Recovery
88	L. T.	36	Cystocele and rectocele Tear of cervix and per- ineum	9-3-27	Supra-vaginal amputation of cervix Shortening of Mackenrodt's ligaments Perineorrhaphy	Recovery
93	N. O.	36	Uterus retroverted Partial prolapse Tear of cervix	21-3-27	Supra-vaginal amputation of cervix Shortening of Mackenrodt's ligaments Vaginal suspension (Vaginal)	Recovery
111	H. C. C.	26	Uterus retroverted and slightly down cervix hypertrophid Tear of perineum	14-4-27	Supra-vaginal amputation of cervix Shortening of Mackenrodt's ligaments Perineorrhaphy Vaginal suspension	Recovery
122	M. S.	23	Procidencia	4-5-27	Supra-vaginal amputation of cervix Shortening of Mackenrodt's ligaments Perineorrhaphy Vaginal suspension	Recovery



Table No. Xa.

*Compound Operations.*

*Vaginal repair . . . . .	14
Vaginal repair and shortening of round lig . . . . .	1
Vaginal repair and ventro-suspension . . . . .	3

\*Under the heading of "vaginal repair" are included such operations as perincorrhaphy, trachelorrhaphy, amputation of cervix, colporrhaphy.

## CLINICAL REPORT OF THE VENEREAL DISEASE CLINIC.

S. K. LAM, M.B., B.S.

The Venereal Disease Clinic of the Tsan Yuk Hospital was opened in May 1926. It is held every Monday at 10 a.m. During 12 months, 40 patients attended the clinic, but none completed, their course of treatment.

In giving N.A.B. injections the method adopted by Dr. Kirkpatrick at Stevens' Hospital is followed:— \*

**Eight weekly injections are given as follows:—**

1st week . . . . . 0.30 gm.	5th week . . . . . 0.60 gm.
2nd „ . . . . . 0.45 gm.	6th „ . . . . . 0.45 gm.
3rd „ . . . . . 0.60 gm.	7th „ . . . . . 0.45 gm.
4th „ . . . . . 0.75 gm.	8th „ . . . . . 0.45 gm.

### Wassermann.

If positive, give patient a month's rest, then given 2nd course as before save that the dose of 0.45 gm need not be exceeded.

### Wassermann.

If positive, give a month to six weeks' rest then a third course as before.

### Wassermann.

If still positive no further course of treatment should be given for three months at least.

If the Wassermann is negative after the first course, the blood should be examined every month, and even if it remains negative, a short course (4 weekly injections 0.3 gm., 0.45, 0.45) during the latter weeks of pregnancy, is advisable.

Sickness or headache is an indication to reduce the dose.

Meals should be taken in the ordinary way.

It is desirable to give an injection of 0.3 gm a week before doing a Wassermann, as it increases the chances of getting a positive result, and hence makes a negative of more value.

### Statistics.

19 patients received . . . . .	1 injection
13 „ „ . . . . .	2 injections
3 „ „ . . . . .	3 „
1 patient received . . . . .	4 „
1 „ „ . . . . .	5 „
1 „ „ . . . . .	6 „
„ „ „ . . . . .	7 „

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\* Reference:—Practical Obstetrics; Tweedy, Wrench & Solomons.

Total number of injections .....	76
Total number of patients .....	40
Syphilitic test positive .....	50%
<b>Symptoms</b>	<b>No. of Patients.</b>
Leucorrhœa .....	15
Pain in bones .....	8
Weakness of lower limbs .....	2
Sore on vulva .....	6
Growth in vagina .....	1
Skin eruption .....	2
Premature labour .....	6
Miscarriage .....	16
Irregular Menstruation .....	4
Enlarged glands .....	1
Headache .....	4
Pain in mictivition .....	4
Numbers of hands .....	1
Abortion .....	3
Sore throat .....	2
Stomatitis .....	1
Sore on legs .....	1
Sore Around Anus .....	1



### SHORT REPORT ON GYNAECOLOGICAL SPECIMENS.

BY C. Y. WANG, M.D.

(From the School of Pathology, University of Hong Kong.)

As in 1926, so during the last twelve months ending 31st May, 1927, examinations of specimens from the Obstetrical Unit of the University have been undertaken by the Reporting Department of the School of Pathology. The following list shows the total number of specimens examined and the nature of the investigation:—

Blood for Syphilitic Reaction .....	508
Blood for Widal Reaction .....	6
Blood for Culture .....	1
Blood Count .....	1
Uterine Contents for Culture .....	5
Swabs and Smears for Examination .....	3
Vaccine Preparation .....	6
Tissue Sections .....	50

This gives a total of 580 specimens, as against 226 in 1926. There has thus been an increase of over 100 per cent. on the figures for the preceding year in the number of specimens dealt with for the Unit.

Of the 508 bloods for syphilitic reaction \* 51 were found positive, 441 negative and 8 doubtful. The test employed was a modification of Sachs-Georgi reaction introduced by the writer. (Vide Lancet, 1922, vol. 1, p. 274).

The tissue specimens for microscopic diagnosis were obtained in 26 instances from tumour-growths, and in the remainder from inflammatory lesions.

A summary of all the specimens dealt with in the period under review is comprised in the table given below.

Blood for Syphilitic Reaction .....	508	
Positive .....		51
Negative .....		441
Doubtful .....		8
Tumours .....	26	
Carcinoma of Cervix .....		1
"    "    Uterus .....		1
"    "    Ovary .....		2
"    "    Bladder .....		1
"    "    Breast .....		1

\* Routine Blood Examination in Maternity Bungalow.

Fibroid of Uterus .....	3
Papillary Cystadenoma of Cervix ....	1
"          "          " Tube .....	1
"          "          " Tube .....	1
"          "          " Clitoris ...	2
Papilloma of Vaginal wall .....	1
Simple Cyst of Ovary .....	9
"      "      " Broad ligament .....	1
"      "      " Vulva .....	1
Cystic adenoma of Breast .....	1
Inflammatory Lesions .....	24
"          " Uterus .....	3
Inflammation of Fallopian tube .....	10
"          " Uterus .....	3
"          " Cervix .....	2
"          " Apendix .....	1
"          " Intestine .....	1
"          " Labia .....	1
"          " Fundus .....	1
"          " Vaginal wall .....	1
"          " Gland .....	1
Abscess of Kidney .....	2
Syphilitic Placenta .....	1
Blood for Culture .....	1
Swabs .....	3
Uterine Contents for Culture .....	5
Blood Count .....	1
Vaccine Preparation .....	6



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**RECENT DEVELOPMENTS AND OBSERVATIONS OF  
SPINAL ANAESTHESIA UNDER NOVOCAINE-  
CAFFEINE COMPOUND.\***

SHU FAN LI,

Hong Kong.

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At the joint conference of the China Medical Association and the Hong Kong Branch of the British Medical Association in January 1925, we communicated a paper entitled "Spinal Anæsthesia under Novocaine-Caffeine Compound"<sup>1</sup>, which was the result of 514 injections. Those observations were the outcome of two years of surgical practice in a teaching hospital. To-day our impression of Spinal Anæsthesia under Novocaine-Caffeine Compound, is just as favourable, if not more so. The technique has since, been simplified and from our view-point almost standardized.

In contrast to the former paper, which was based on observations in hospital practice, to-day we propose to state our experience in private practice. The criterion of universal applicability and safety of this new form of spinal anæsthesia, should be its applicability to cases of private practice, where cases belonging to every class of society under varying conditions are met with.

In the series of 514 injections previously reported, we called attention to its perfect safety, as there was not a single fatality or sequela observed, which could be ascribed to the injection. Even to-day, after a lapse of nearly three years, we have not so far received a single direct or indirect complaint.

**Safety and Wide Range of Applicability.**

In former years, our use of spinal anæsthesia was entirely restricted to operations below the umbilicus. Since then its scope of applicability has been greatly extended. It is our anæsthetic of choice now, in all operations below the diaphragm.

The procedure as at present developed, is so safe, that we even use it in such minor operations as the opening of abscesses, circumcision, cystoscopy etc. In support of the statement concerning its safety and wide range of applicability, we append herein a table of operations performed under novocaine-caffeine compound, during the last two years of private practice, giving the nature and number of operations of each affection:—

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\* Read before the Hong Kong University Medical Society on 19th October, 1927.

Table I.

Gastro-enterostomy	Prostatectomy
Gastrotomy	Colostomy
Cholecystostomy 2	Strangulated hernia
For liver abscess	Haemorrhoidectomy 11
Splenectomy	Fistula-in-ano 2
Omentopexy	Rectal polypus
Ventral hernia	Vaginal Myomectomy
For acute intestinal obstruction 2	
Appendectomy 7	Perineorrhaphy 2
Exploratory laparotomy	Uterine dilatation and Curet- tage 8
Salpingo-oophorectomy 2	Urethrotomy
Ventrofixation of uterus	For hypospelia
Shortening of round ligaments	For hydrocele of cord
Ovariectomy 2	Complete amputation of penis
Cystostomy	Circumcision 6
Periarterial sympathectomy	For ulcer of foot
Excision of inguinal glands	Abscesses (ischio-rectal, gluteal, periurethral),
For varicose veins of leg	

Cases of cystoscopy are not included in the table. The youngest patient was 12 and the oldest 71 years of age. The anæsthesia induced was generally very satisfactory. Whether it was simple cystoscopy or gastro-enterostomy, the muscular relaxation being generally complete, without troublesome spasms so typical of inhalation anæsthesia. We admit that it is possible to attain an equal degree of relaxation with ether, but only when it is pushed to a dangerous depth.

In a few of the above cases, in which operations were unavoidably prolonged, and the effect of the novocaine-caffeine was passing off, we did not hesitate to give ether to complete the operation. Under the circumstance the ether did not supplant but rather supplemented the rachi-anæsthesia and moreover it acts as a circulatory stimulant rather than a depressant as the ether was given lightly and for a short period.

However, quite a few of the above operations lasted well over two hours with spinal anæsthesia alone, and we were firmly convinced that had ether been employed instead, the result would have been hazardous. The dread of ether was not only because of its deliterious effect on the respiratory system, but also of its inability to prevent shock. Indeed continuous deep etherisation for two hours, constitutes in itself a shock, and it is evident that operating under the circumstance would be "adding insult to injury."

In this series of 70 injections there was no permanent sequelae observed. As a matter of fact there was only one death

occurred in the whole series, and it certainly was not due to the anæsthetic. This was a case of myelogenous leukaemia, in the terminal stage, with a spleen half filling the abdomen. Unfortunately, no preliminary treatment by X-rays or radium was obtainable, and splenectomy was accordingly performed. It is generally conceded that this form of splenomegaly, carries with it a high operative mortality unless prepared by irradiation treatment.

Our conviction from this and the previous series of cases is that *novocaine-caffeine spinal anæsthesia not only does not cause death but it actually lowers the rate of operative mortality.*

Hitherto, leading authorities consider the following conditions contra-indicated for spinal anæsthesia:—The aged, cases of severe hæmorrhage, those in the early stage of shock, the stout and plethoric, the starved and debilitated, those with diseases of the spinal cord and the central nervous system.

In the light of our experience, with care, spinal anæsthesia under novocaine-caffeine compound may be induced with safety, in all the above mentioned contra-indicated conditions, with the exception of the last, provided the patient is not in extremis.

Space permits me only to illustrate briefly, a few typical cases from the above table which if not for this form of anæsthesia would probably have been disastrous. The fact that these types of cases were considered by eminent authorities to be contra-indicated for the usual form of spinal anæsthesia, constitutes a distinct triumph for spinal anæsthesia under novocaine-caffeine.

**CASE 1. CASE OF THE STOUT AND PLETHORIC TYPE.** Mr. W.Y. W., age 53, suffering from strangulated inguinal hernia. I was consulted by the attending surgeon on the second day, principally because of coincident acute bronchitis. He was typically stout and plethoric and was in the stage of severe shock. Operation under novocaine-caffeine revealed the strangulation of some few feet of small intestine and the bladder.

The latter was intentionally opened and afterwards stitched. Recovery was uneventful though the cough still continued. Probably the bronchitis was responsible for the propulsion of the hernia.

**CASE 2. CASE OF THE SEVERE HAEMORRHAGE WITH LOW BLOOD PRESSURE.** Mrs. L.W.S., age 51, suffering from fibromyoma of the cervix, the size of a large orange.

For 27 months she has had hæmorrhage every one or two weeks, some of which were very severe, necessitating rest in bed for days, and in her words "too giddy to get up." Slight oedema of the face and feet was noticed 14 months previously. Twice there was retention of urine for 24 hours, each time relieved by hæmorrhage (pressure retention). On examination. She was suffering from severe anaemia, emaciated, with oedema of face and feet. The R.B.C. were 1,648,000, the hæmoglobin index was 45% and the blood pressure was S 100, D 65. 2½



C.C. of novocaine-caffeine solution was injected into the third interspace and the foot of the table lowered five inches for 10 minutes. Vaginal myomectomy was performed with Schuckardt's paravaginal incision. During the whole of the operation which last 2¼ hours the anaesthesia was complete and the patient was sleeping. At one time during the operation, there were no less than two dozen of artery forceps hanging from the wound, as blood was limpid, and clotting was almost impossible. During the whole time, the blood pressure was splendidly maintained, as at no time had it dropped more than 10 m.m. and to our satisfaction and surprise, at the end of the operation it was actually 5 m.m. more than prior to the operation (105 m.m.).

Her recovery was as usual.

**CASE 3. A CASE OF THE AGED WITH SEVERE HAEMORRHAGE.**

Mr. C.Y. aged 71, suffering from hypertrophy of the prostate with complete retention of urine. This patient at various times had three injections of the compound. The first was for cystostomy, the second 13 days later, for enucleation of the prostate, and the third was 10 hours later (following enucleation) for the arrest of haemorrhage. Prior to the enucleation—operation the pulse was 110, and it was 150 prior to the arrest of haemorrhage. During those 10 hours the loss of blood was very severe, as the dressing had to be changed every two hours or so, each time it was completely soaked, with a quantity of blood clot coming away with it.

When seen at the end of 10 hours he was fast collapsing, his voice was just above a whisper and the body was covered with clammy sweat. In spite of these alarming signs, we were so confident of this form of anaesthesia that we gave an injection for the third time. The haemorrhage was completely controlled, and he made a speedy recovery. This is the oldest patient we had so far injected.

**CASE 4. A CASE OF THE STARVED AND DEBILITATED TYPE.**

Mrs. P.D.S. Age 36, for 10 months was suffering from epigastric pain and vomiting, due to pyloric stenosis. She was only able to take fluids one month before the operation and had become therefore very anaemic and emaciated. Obviously a case of very poor operative risk. Gastro-enterostomy was performed under the anaesthetic compound. For almost two hours the anaesthesia was complete. In spite of her poor condition she stood the operation wonderfully well. But before she had quite recovered from the effect of the operation, the abdomen was re-opened five days later, (second injection) because the nurse thought there was a sponge missing.

Lamentably, but fortunately the search was fruitless and she made an excellent recovery. In two months she had gained 30 lbs. It is now two years after operation and we hear she is in excellent health.

### The Use of Novocaine and Caffeine in Combination.

As far as we are aware, we were the first to obtain uniform success with novocaine and caffeine in combination, in the induction of spinal anaesthesia. Our experience with the compound covers a period of five years in hospital as well as private practice and always with the most excellent result.

Elsewhere<sup>1</sup> we had stated, that when novocaine alone is injected, (intrathecally) a peculiar syndrome appears consisting of pallor of the face, clammy skin, low pressure pulse, with perhaps vomiting and a feeling of faintness. Also that we have proved this syndrome was effectively mitigated or prevented by the addition of caffeine to the novocaine solution, while there was no harmful effect observed. With the use of this compound the post-operative headache was less frequent and when present, was slight, in comparison with cases injected with novocaine alone, also caffeine being a direct cerebrospinal stimulant, the blood pressure was better maintained. Jonesco was the pioneer in the use of stovaine and caffeine in combination. Our objection to this compound, and other compounds, like Barkers containing stovaine, is that the stovaine solution possesses a distinct hæmolytic action, besides being more than twice as toxic as novocaine. Moreover it has irritating qualities which are not possessed by novocaine. As nerve tissue is bathed continually in cerebrospinal fluid, it is most important that any solution injected intraspinally, and diffused therein, should not be hæmolytic, irritating or too toxic, especially when no harmful immediate and after-effect is desired. Elsewhere<sup>1</sup> we have proved that our compound is the least irritating and toxic of all other forms of spinal anæsthesia and that it has no more hæmolytic action than normal saline.

It is interesting to note, that in 1921 Rene, Block and Hertz<sup>2</sup> published some serious cases of syncope, successfully treated by intraspinal injection of Caffeine, they however maintained to our surprise, that the combination of novocaine and caffeine had imperfect anæsthetic properties.

The addition of caffeine, has the special virtue that it acts as an antidote, to the slightly toxic novocaine, besides being a direct nerve tissue stimulant. Physically, it has the advantage of rendering the solution denser, because the denser the solution, the less it diffuses, and the quicker it gravitates to the most dependent part of the spinal canal. In other words, the less the dilution, the less the diffusion, so that a small dose injected would exert the maximum effect. This is one of the secrets of success with this compound.

TABLE II.

Normal Cerebrospinal fluid (Our Chinese Standard drawn from 10 persons mixed fresh)	Sp. Gr. 1006
Novocaine Caffeine Compound (Our recent formula)	
Novocaine 3 grains (0.195 Gm.)	
Caffeine 3 grains (0.195 Gm.)	ãã 6.25% Sol.
Distilled Water Ad 3 c.c.	1030

### Recent Developments of Technique.

As we have devised a simplified technique for lumbar puncture<sup>3</sup>, a repetition of it here is unnecessary.

The very diversity of solutions, and technique employed by various authorities, goes to show that spinal anæsthesia is far from reaching the goal of perfection. For this very reason, the author has been working for the last few years, on a method that would be simple, and effective if not standardised. We consider our present technique meets this desideratum.

Fortunately, and without being intentional, our present technique works on the formula of 3333. That is, we use 3 grains of novocaine, 3 grains of caffeine, with distilled water add up to 3 C.C., to be injected into the 3rd. lumbar interspace. As a rule we have the solution prepared fresh and sterilized in a water bath for 15 minutes (we are now experimenting on its effect when put up in ampoules). We do not inject the full quantity of the solution, except in rare cases. Our dosage of novocaine has been from 3/4 grain in minor operations to 2 3/4 grains in major operations, depending also on the subjects body weight and vitality. This simply means, injecting 3/4 c.c. to 2 3/4 c.c. as the case may be, as each c.c. contains one grain of each of the agents. The 3 c.c. solution would permit a few drops (1/8 to 1/4 c.c.) to be taken, for injecting intradermally, into the skin over the 3rd interspace, thus obviating the necessity of making a separate local anæsthetic solution.

Differing from other authorities, regardless of the height of anæsthesia desired, we have always, injected whenever possible, into the 3rd lumbar interspace, with the patient lying on the right lateral position. When the injection is completed, we roll the patient immediately over, on his back, and then control the movement of the dense solution in the spinal canal, by raising or depressing the pelvis, which is maintained for 10 minutes (the period required for complete fixation of the anæsthetic). Thereafter, the patient may be placed in any position, even in the exaggerated Trendelenberg posture, without fear of respiratory paralysis, or other untoward results. The 3rd. interspace, represents a point on the most forward curve of the lumbar spinal column. Here also is found a central space of about 2 m.m., between the two separated nerve bundles of the cauda equina, so that if the needle is kept strictly in the midline, none of the nerves will be injured, and therefore no sequelae such as permanent paralysis etc. need be feared. It will be understood, that with the patient on his back an anæsthetic introduced here, (at the summit of the lumbar curve) could be easily made to gravitate upward or downward by moving the pelvis.

In regard to the solution, there is no gain in using a greater dilution of water than 3 c.c., as the resultant compound would become lighter, and therefore harder to control in its movement. Neither is it wise to use less, because during manipulation, of the needle and syringe, a loss of a few drops would materially reduce the effect of the anæsthetic.

The former practice of withdrawing an equal quantity of cerebrospinal fluid before injecting, was long ago discarded by us as this would reduce the pressure of the cerebrospinal fluid, which is undesirable. Because, the greater the pressure the better is the effect of the anæsthetic. Therefore only a few drops are permitted to escape, just sufficient to denote, that the needle has penetrated the spinal theca sufficiently, after which the loaded syringe is connected to the hub of the needle, and the piston is slowly pushed home, almost drop by drop, and be ever so gently. This would avoid local concussion, and general perturbation of the fluid. Remember always, that the cerebrospinal fluid is a water cushion, on which the brain and spinal cord rest, and one of its prime functions is to protect them from shock, and that the less the disturbance created, the less will be the after effects.

This simplified technique, has been adopted by us for the last two years, in all our private operative and diagnostic work and has been used with uniform success.

It is hoped that this discourse, with the technique advocated, will help materially in simplifying, if not standardizing the hitherto complicated technique of spinal anæsthesia. We are unaware of the existence a safer spinal anæsthetic than novocaine-caffeine compound, or that there is a more simple and successful formula than that of 3333. It must be understood however, that there is no fool-proof technique in the practice of surgery.

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*China Medical Journal*, April 1927.
2. Rene, Block and Hertz: *Presse Medicale*, Paris No. 53 1921.
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## MENTAL MECHANISMS, DREAMS AND THEIR INTERPRETATION.

ALEXANDER CANNON.

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### OUTLINE

Unconscious mind.   1. sub-conscious.  
                          2. true-unconscious.

### MENTAL MECHANISMS:

1. Repression.
2. Sublimation.
3. Projection.
4. Dissociation & Rationalisation.
5. Inversion.
6. Displacement.
7. Conversion.
8. INSTINCT & CONFLICT (not true mechanisms).

### DREAMS AND THEIR INTERPRETATION:

Symbols and their key

### DISTORSION MECHANISMS.

1. Condensation.
2. Dramatisation.
3. Displacement.
4. Secondary elaboration.

CONCLUSION: a practical application.

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To-day we come to the study of one of the most fascinating subjects which has ever been penned: DREAMS AND THEIR INTERPRETATION. John Bunyan was a dreamer, and out of his dreams have been interpreted the immortal "Pilgrim's Progress: "I awoke," says Bunyan, "and behold, it was a dream."

Many kings have been great dreamers, and dreams have unconsciously been responsible for some of the greatest things the World has even known. Legends and fairy tales have been traced back to dreams which reveal the state of the unconscious mind, which without our knowledge or consent is influencing our whole outlook on daily life.

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\* Delivered before the Hong Kong University Medical Society on 5th October, 1927.

Dreams are as important to the mental specialist as are physical signs and symptoms to the physician: the former reveals the state of the mind; the latter the state of the body. But dreams are often more important than physical signs and symptoms, because the mind governs the body:—this is a fact which no one can deny.

In order to study dreams, it is essential to study the mental mechanisms at work, just as in order to study physical signs and symptoms it is necessary to study the physical mechanisms at work in the human body.

Let us first deal with the unconscious mind.

It must be borne in mind that consciousness at any given moment includes everything of which we are aware at that moment, and nothing more. For example, at any given moment, we may be aware of visual, tactile and auditory sensations, aware in a more vague way of a blend of various organic sensations, and aware of some idea which is occupying our attention. This is our consciousness at that moment, but it is by no means all that is really IN OUR MINDS. All the rest is spoken of as being “unconscious”, because we are not actually aware at that moment of more than has been mentioned. This is the usual sense in which the term “unconscious” is used, but a little study will reveal to us that it can be subdivided into two distinct sections, namely 1. the SUBCONSCIOUS and 2. The TRUE UNCONSCIOUS.

There are an immense number of facts, ideas and memories, of which we can become aware if we try to “think of” them, or even are merely reminded of them by something already in our consciousness without any effort at all. You are asked who is the Governor of Hong Kong, and we instantly become aware of his name. On the other hand we may be “star gazing” at the clock and conscious of nothing, but of the time it records, and suddenly we are aware that we have an appointment in five minutes time: such facts belong to the division of the unconscious known as the SUBCONSCIOUS: it includes all the ideas which we ourselves can without effort bring into consciousness, by just casually turning our attention towards them.

On the other hand there are many ideas, memories, tendencies, and activities in our minds which by no known method or effort of our own are we able to bring to our conscious mind: this is the *true unconscious*.

All psychological investigation and experience point towards the general correctness of this hypothesis that these two systems exist, and that the primary system, although it becomes in large

measure superseded by the secondary one, remains distinct from it, and persists, not greatly altered throughout life as the unconscious mind.

Traces of the activities of this primary system, the existence of which we accept as a working hypothesis, can be found in some neurotic symptoms, in the acute hallucinatory insanities, in the conduct of very young children, in the day dreams and phantasies of the normal adult, and most unmistakably and clearly in dreams. Let us consider by way of illustration the traces of the activities of the primary system which are observable in ordinary day-dreaming and phantasy. Every one has some idle moment in which he has pictured himself in a coveted post or appointment as the result of a series of deaths and accidents among those who at present block his way to it, or perhaps owing to some imaginary crisis in which he plays a part which puts him in the very forefront of his fellows and convincingly demonstrates his superiority to them. Such a day-dream presents the dreamer with an immediate, but imaginary fulfilment of his wish, and by so doing it has scorned the base degrees by which the dreamer will, in fact, attempt to struggle towards his goal, being unhampered by logic, probability, altruism, morals, or criminal law, annihilates competition without a qualm, and is quite capable of literally "taking the bull by the horns" and ignoring any consequences.

The secondary system, in painful subjection to things as they are, sets about the difficult task of altering the environment by methods compatible with law and order; a proceeding which may very well occupy a year for every moment taken by the day-dream, which is not surprising when the difference in method is considered.

Fact is completely ignored by the infantile system—the unconscious mind—and possibly also its blind working towards immediate gratification.

And now we must discuss the unconscious WISH. It can be explained in this way. For every locked door, a master-key, or a magic pass-word is provided. Time, space, and physical factors are ignored, and the obstructive competitors are simply cleared away by death, accident, coincidence, or proved superiority of the dreamer, the precise method of their elimination being a matter of secondary importance. It is these manœuvres of the unconscious mind which are spoken of as "unconscious wishes", and this is quite different from our *conscious* wishes.

The foregoing is just an outline of the functions of the unconscious mind, and next we turn our attention to what we term REPRESSION. The origin of all repression is inability

to face reality. There are certain people so constituted that their tendency is to adopt any means of escape from a painful mental reality rather than to face and deal with it. This tendency exists to a certain degree in everyone, and to that extent is regarded as normal and physiological, but the term as generally used applies to cases where the appearance of various symptoms, which we shall discuss shortly, shows that the tendency has been functioning in an abnormal way or to an excessive extent. The energy produced by the desire is handed up, so to speak, to the secondary system to be used in the attempt to bring about the fulfilment of the wish by altering the environment. Suppose, however, that the tendency or wish in question is in itself a harmful or anti-social one. The conscious educated secondary system may have its own views as to what is good for the individual, and may refuse even to acknowledge the existence of any such wish or tendency, far less to take any active steps to bring about its fulfilment. Hence the mental process in question can thus never avail itself directly and openly of the secondary system to bring about a satisfactory result, for the good reason that this system ignores, or even denies, its existence, and as we have seen, the primary system is incapable of working out the tendency in a satisfactory way. Thus is produced a state of affairs known as **INTRA-PSYCHIC CONFLICT**, that is a desire with its accompanying emotional tone and impulse to action being refused admittance to the thinking, working, and conscious mind. This damping down of a mental process which has arisen from the primary system and the preventing of it from ever reaching consciousness is the very essence of psychological repression.

The name of this barrier which keeps part of our mental life out of our consciousness and justifies our calling the primary system "unconscious" is **REPRESSION**. Repression acts, however, in daily life in another way. It also removes from the conscious mind matters which are painful or unpleasing, and thus again carries out its general function of helping the individual to avoid reality. In the neurotic the extent to which it does so is quite remarkable. Repression acts by preventing or possibly destroying, these associations, and may be said to deal with irritating groups of ideas in a way very comparable to that in which the omentum deals with a foreign body in the abdominal cavity. I call it the **BRAIN POLICEMAN**. It shuts them off more or less completely from consciousness, and although it is obvious that in a healthy person most important matters are too completely linked to consciousness by various associations to be thoroughly dealt with in this way, yet even in its minor degrees, repression prevents the ideas from springing up to mind on the slightest associative stimulus, and makes a real and sometimes prolonged effort necessary for their recall. It is often said



in a loose way that it must be pleasant to have the happy knack of "forgetting" what one does not want to remember. As far as a common-sense view of the situation goes, the conscious wish must have been to realize the inevitable and act accordingly, and not to make matters worse by behaving as if the inevitable did not exist. But the unconscious mind, as we have seen, is burdened by no such philosophical outlook. However, this is really of no particular consequence. The essential condition which caused it to function was that the thing was unpleasant. Had the individual been looking forward to it with sincere pleasurable anticipation, it is inconceivable that the thought of it should have been repressed as described. By removing the painful thought of it from the unconscious mind by means of repression, the unconscious did its unenlightened best to give pleasure and avoid pain. It is said that every lapse in memory, every slip of the tongue or pen, and every absent-minded action in everyday life is to be accounted for in this way, and many interesting analysis of such lapses have been published tracing them to their causes in the unconscious. It is, however, certainly a mistake to confuse the ordinary forgetfulness of everyday with repression in its psychological sense this being probably due to insufficient impression in the first instance. We forget the name of a casual acquaintance, but we realise that here there is no question of the repression of which we have been speaking, but purely insufficient impression. On the other hand, it is not in this sense, that I forget the name of the person with whom I have arranged an interview next month. I cannot possibly have forgotten it. I only wrote to him yesterday, but none the less I have great difficulty in "bringing it to mind." In the latter case there is repression at work. The forthcoming interview won't exactly be pleasant, and it bothers me every time I think of it. It is not surprising therefore that my BRAIN POLICEMAN will keep this fellow off the grass, so far as consciousness is concerned, or at any rate try hard to prevent it doing so.

We are all only too familiar out here, with the man who is literally incapable of seeing facts which contradict his cherished theory, the man who cannot see the faults in his friend which are so obvious to everyone else, and the mother who refuses to believe that her child has a squint. These are all instances of repression.

Any degree of repression involves what we have termed intrapsychic conflict, and leads to the rejection by the conscious mind of some tendency or desire in the unconscious. Every such desire or idea is accompanied by a certain energy and tendency to action which must of necessity find an outlet some way. It is the struggle of this energy to find release and expression which is the essence of "conflict", and unresolved con-

fict is a state of affairs which cannot continue in the mind. It deals with the situation by means of certain well-defined methods which are usually called mental mechanisms, and it is these mechanisms which enter largely into the production of nervous and mental symptoms. It is convenient to regard them as manifestations of a struggle between repressed material on the one hand, and repressing force on the other.

MENTAL MECHANISMS, are for simplicity sectioned into 1 Sublimation, 2 Phantasy, 3 Projection, 4 Dissociation and Rationalisation, 5 Inversion, 6 Displacement and 7 Conversion.

SUBLIMATION implies that all through life repressed tendencies are struggling to find expression, and one of the physiological methods by which this is done consists in the diverting of the tendencies into channels other than their natural ones, and hence is termed sublimation. The old maid who lavishes maternal affections upon the proverbial cat, and who daily studies the columns of births and marriages, is a case in point. Again, the disappointed lover sublimates his thwarted sex energies into dangerous sports and goes to the Bush to shoot big game. The broken hearted man plunges into intense study or exhausting physical labour and this is a case of sublimation. Indeed, much of the benefit of "occupational" methods of treatment are explained in this way. As a rule the more satisfactory the sublimation is, the more nearly is it allied to the repressed tendency or activity. It is frequently to be regarded as a kind of "second best", as in the case of the woman who looks after chickens instead of babies, or devotes herself to the work of a church instead of that of a home and family. The energies and tendencies which training and education cause to be repressed at an early age must find some suitable outlet if balance is to be maintained and conflict avoided. This outlet must be useful, or at least harmless, and thus acceptable to the conscious mind. It must also, as stated, be in some way associated with or allied to the repression tendency, otherwise it will not suffice as a channel for the expending of its energies. The choice of early sublimations and their adequacy in any instance, are said to be the main determining factors, not only of a child's future mental health and happiness, but also of the general nature of the work and activities of his life.

Another mental mechanism is called PHANTASY, which may be described as a real refuge from hard fact. The individual has an immediate imaginary fulfilment of some desire, and ignores the practical obstacles which stand in the way of fulfilment. The building of "CASTLES IN THE AIR" is indulged in by all of us, and within limits is not only harmless, but, indeed, actually helpful in so far as it encourages the individual to further effort towards attaining his castle in the air and

making his dream come true. An ordinary day-dream is an instance of phantasy. Many people prefer their phantasy ready made, and achieve this end by attending plays or reading novels, or seeing moving pictures, in which they identify themselves with the hero or heroine. It is in this way that the immense popularity of various authors with certain classes of the community is often to be explained. The eternal popularity of love stories and adventure stories is to be explained in this way. The danger of unbridled phantasy lies in the fact that there are many people so constituted that, as a result of constant indulgence in it, their whole personality becomes so turned in towards themselves and their phantasies, and away from the outward world of fact, that they tend to live more and more in the dream-world rather than in the real one, and they finally become incapable of getting back to reality at all, their phantasies being more real to them than reality itself. It is believed that this mechanism is a powerful causative factor in the production of certain forms of insanity, and certainly it explains the ideas of many chronic delusional cases such as the following:—

The patient was a lady suffering from paranoia, or chronic delusional insanity. She believed herself to be the rightful queen, secretly married to a mysterious prince of untold power and wealth, from whom she was being cruelly kept apart by political intrigue. She was convinced however, that in due time this prince, who owned the institution in which she resided, as well as all the other public buildings of the country, would come to liberate her, that he would ascend the throne of the country, and that they would reign happily together. The history of her case is that she belonged to a wealthy county family, and when about to make a very good marriage had the misfortune to lose her money, her home, and her position, in consequence of which her engagement was broken off. At this time she was to all appearance perfectly well mentally and by no means destitute, as a little income remained on which she could live in fair comfort with the strictest economy. Now, she would naturally think with regretful longing of the old days when she was the central figure in her district, with every one paying her respect. But she did more than this; she refused to face the cold, miserable reality, and she avoided it by stepping into a kind of exaggerated day-dream from which she has never emerged. In her present state she has, from her point of view, recovered all her old position and advantages and increased them tenfold. Her love affair has come right and is a grander thing than she had ever hoped. Better far than being the head of a county, she is shortly to be head of an empire, with nations instead of villagers to do her homage. She has gained peace from a situation which was intollerable to her by the method of avoiding the conflict together, and at the price of completely losing her hold on reality.

But the most important and interesting mechanism is PROJECTION, which is a compromise which certain minds can adopt between the repressed material and the repressing force. The existence of painful facts is more or less admitted, but they are disposed of by being fitted on to someone else. "They may exist", says the patient in effect, "but they have nothing to do with me." Simple instances of projection abound in every-day life. It is the cantankerous man who reproaches every one with ill-temper, and there is nobody so suspicious of others as the person who is himself deceitful. *One cannot admire a virtue or dispise a vice in others unless that virtue or vice is present in oneself.* This mechanism is of extraordinary importance in connection with methods of treatment and in formation of some of the most striking symptoms of nervous and mental disease. It is at the root of many of the accusations made and delusions held by insane persons. There is no doubt, for example, that the common delusions of many female patients that some man, frequently an unfortunate and blameless clergyman, is in love with them and thrusting his unwelcome attentions upon them are simply instances of the "projection" of a repressed and unconscious desire of their own. The hallucinations of the insane are also very often to be explained by projection, the patient projecting self-reproaches so completely that they appear to come from without as actual reproving or threatening voices.

Now, we consider the mental mechanisms known as DISSOCIATION AND RATIONALISATION. A very common form of dissociation consists in the splitting of the mind into different compartments, as it were, each containing some group of ideas which is never allowed to come into association with other groups. The individual is perfectly conscious of these various systems of ideas severally, but because of their inconsistencies or incompatibility with one another, the dissociative tendency sees to it that they are never presented to his conscious mind together. The glaring inconsistencies of conduct which abound in the lives of most of us are examples of this tendency. The dishonest financier may be a model of propriety in his domestic life, and the fraudulent merchant may devote much of his ill-gotten gains to charitable and religious purposes. These persons are quite unaware of the inconsistency of their acts because of the dissociation which has impaired the homogeneity of their mind, and which prevents the conflicting and incompatible motives from ever meeting one another in consciousness. There are limits to this process, in a mentally healthy man, and even the most inconsistent of mortals must occasionally be faced with, say, the contradiction between his religious exercises on a Sunday and his dishonest activities on the following day. RATIONALISATIONS are reasons given by an individual for his conduct which are in reality not reasons at all, but excuses

or justifications which are frequently thought of after the event. Some lawyers are noted for this practice: with them of course, it is a practiced art. The dishonest merchant referred to would explain that business is one thing and family life another; that when he considers the unscrupulous methods practiced against him, he is really astonished at his own moderation; that the struggle for existence is a very real thing; that all is fair in love and war, etc. These statements which mean little or nothing, suffice to persuade him that his conduct is devoid of inconsistency.

They are well seen also in many nervous and mental cases—as in the delusions of the melancholic patient. The unhappiness and depression come first, and it is in the desperate attempt to find logical reasons for them that the patient invents the delusion that she has committed this or that sin. Another patient announced himself to be Napoleon, and when it was pointed out to him that on the previous day he had called himself the Duke of Wellington, he straightway replied, “Yes, but that was by another mother.” One patient explained the fact that he was found lying with his feet on the pillow and his head at the foot of the bed, by saying “I am what the doctors call a breech case.” I thanked him for this information. The *hypnotic state* may be regarded as *an artificially produced dissociation*, and the remarkable cases of “double personality” which have been reported are very perfect instances of dissociation in its most extreme degrees.

INVERSION is an additional aid to repression, and may be described as a special variety of sublimation. It consists in an attempt to strengthen repression by an exaggeration in consciousness of opposite quality or tendency that which is being repressed. There is always at least a tendency in ourselves to the vices we condemn in others, and in this direction it is of interest to recall the almost incredible bitterness with which certain women will denounce and abuse a girl who has “got into trouble.”

DISPLACEMENT is another mechanism of great practical importance. It directly explains neurotic symptoms. It denotes in its most limited sense the transferring of the affects or emotions connected with some painful idea to another one which is less unacceptable to consciousness. The painful ideas are excluded from consciousness, but their emotional tone is permitted to make its appearance therein in association with some other group of ideas. For instance a child dislikes a certain doctor for some reason or other, and now dislikes all doctors when it sees them, in other words it displaces the dislike of one particular doctor to another doctor, without any justification or reason. Displacement gives rise to inadequate or disproportion-

ate emotional reactions characteristic of hysteria and the obsessional neurosis, and it is directly connected with the phenomenon called "transference" which is a special and important form of it.

CONVERSION is the name of an important mechanism by which repressed ideas manifest themselves in consciousness, and not, indeed, in any mental disguise, or as any form of mental activity at all, but as bodily symptoms. It is the characteristic mechanism of the disease known as conversion hysteria. A most familiar instance is the man who conceals his sorrow from others—and for the moment from himself—by witty or humorous outward show. Humour is one of the greatest refuges from painful reality that we know, and by its aid we are all able to deprive unpalatable experience of some of its real bitterness and significance. "Even in laughter, the heart is sorrowful." The abnormal extreme of this is depicted in the alcoholic "waster" who drowns his sorrow in drink.

*Now, see how these mechanisms can be shown collectively.* A student found years afterwards, in an old note-book, mixed up among the notes what must have been a desperately dull lecture on one of the subjects of the earlier part of the curriculum, that he had written after his name and appended thereto a string of exalted titles and degrees. This is a very pleasing and almost legitimate use of *phantasy*.

Henry of Hereford (Richard II) has been sentenced to banishment, and his father, in an attempt to comfort his son, gives him probably the most concentrated sample of bad advice extant, which illustrates almost every one of the mechanisms we have considered. He tells him that, instead of admitting that the King has banished him, he ought to pretend that it is he who has banished the King—a perfect instance of *projection*. He is to pretend that there is pestilence in England, and that he is really travelling for his health—a good example of *rationalisation*. He is to imagine that all his aims and desires lie abroad, and not at home—an illustration of *sublimation* and *inversion*. Henry, however, has an excellent grip on reality, and replies bitterly in the well-known speech beginning: "Oh! who can hold a fire in his hand. . . .?"

It will be seen that all these mechanisms have a common object, which they achieve to varying extents and in their different ways. The object is to give expression in some way to the unacceptable ideas which are repressed from the consciousness. The ideas must therefore, be put in such a form or disguised in such a way that consciousness will accept them. The mechanisms thus illustrate the activities of the unconscious in this direction and the compromises, which it makes with the conscious mind.

Lastly we come to deal with INSTINCT & CONFLICT which are not true mental mechanisms, and must be approached in a very careful manner. Already, we have spoken about "groups of ideas", and have seen that the subconscious mind is full of an infinite number of such groups, each group consisting of a number of closely associated ideas connected with some object or other. The name given to these groups of ideas is "constellations", and our ordinary everyday thinking (apart from processes of continued and discriminate attention) is largely composed of successions of these constellations which form a chain of thought consisting of an infinite number of associated links. These constellations tend to come into consciousness on the slightest and flimsiest associative stimulus, and give the perfectly correct impression that they possess some kind of inherent force by virtue of which they seem to be striving constantly to thrust themselves upon our conscious notice. A favourite illustration of this process is that of a young man very much in love. As he walks idly along the most trivial things will serve to remind him of the lady by means of associations which seem strangely farfetched to the outsider. A passing acquaintance reminds him of her because his name is Grimes, and her name is Symes; another because his feet are large and hers are small: etc. The inattention of a man in such a state to the details of his daily business is proverbial, and is clearly the result of this process. His chief reminds him of his future father-in-law, and the work of the office leads him to speculate regarding the possibilities of promotion and increased salary, so that they can get married. This peculiar power of constellations to control and influence thought is a matter of the very first importance. It should be made quite clear that their activity does not stop here. Let this man realise that there is no hope of marriage until a certain task has been done or a certain position gained, and he will apply himself to completing the task or gaining the position with a driving power of well-nigh irresistible strength behind him. This energy may be, in the opinion of his friends, quite foreign to his character as they know it, and owes its origin and maintainance to the existence of the love constellation of which it is the direct outcome. The great essential in a group of ideas, if they are to provide the maximum directing and governing force, is that they should be intimately connected with any of the important instincts.

AN INSTINCT may be defined as an inherent prompting to act without deliberation in a certain way.

Another method of classification is to subdivide instincts into those of self-preservation, nutrition, and sex. Before we consider these instincts attention must be drawn to another instinct which, from its nature and importance, is generally regarded by itself, namely the HERD INSTINCT. It will be

readily admitted that in company there is an unanalysable feeling of comfort and satisfaction, whereas in prolonged solitude there is, on the whole, an equally unanalysable sense of restlessness and discomfort. We talk, think, dress and behave very much as others of our set or herd do, and we constantly sacrifice individual judgment and desire rather than separate ourselves from the herd. Many a man would rather endure corporal punishment than meet his fellow-men, while he himself is wearing brown boots with a morning coat, and the adherence of all of us to other dictates of fashion are instances which might be infinitely multiplied. What the herd loses of individual enterprise and ability it gains in the homogeneity which enables large numbers to act in concert. The use of this in hunting or warfare is obvious and its disadvantages may be seen in the behaviour of a mob. The punishment of the herd for those who come under its ban is expulsion with the loss of the advantages which membership of a community implies. That this punishment is a severe one will be readily understood, for we see its operation in the case of a man who is "cut" by his old acquaintances, "dropped" by his friends, or expelled from his society or club. There is no better place to see a living example of this faculty carried out to the letter, than in the colony of Hong Kong. We make a stranger feel at home by inviting him to become one of us, for the evening, and we must all have experienced the misery which accompanies the feeling that one is in some way "out of it" and not in harmony with the behaviour and ideas of one's fellows, and is "an outsider."

It has been indicated and must be emphasised that, in becoming a member of the herd, the human being tends to give up some of his own individuality. His thoughts become those of the herd, and it becomes very hard, if not impossible, for him to keep an open mind to new ideas which happen to conflict with the traditions of the particular herd to which he belongs. Some new idea of ours "did not go down" with our set, and was regarded as "bad form" or "eccentric" whereupon we found it convenient to drop the notion and remain very sensitive to any idea that we even ever thought of such a thing. Discoveries have been treated in this way, and that we owe to these great scientists our knowledge of them to-day to the fact that the men who made them were, as a rule, strong enough to hold out against the herd, though usually with painful consequences to themselves. Jenner, Galileo, Darwin and Lister stand before our minds prominent in this direction: had they not ignored the herd instinct, where should we have been? Very many of our ideas as to what is morally right or wrong are traceable to the operation of herd instinct, and arise from the unhappiness which we feel when we act in a way which would provoke the displeasure of the herd.



It would be very evident that if a man were to be guided entirely by his personal instincts he would behave, as regards his selection of a mate, in a manner similar to that of his primitive ancestors, namely, carrying off the lady of his choice to his dwelling at short notice, quelling any resistance by the use of the club. Obedience to herd tradition, however, is a compelling force within him, by virtue of which he dispenses with the club, goes through the conventional period of engagement, and even endures the wedding ceremonies. By this method of lawful and conventional matrimony, he succeeds in resolving the conflict between his sex instinct and his herd tradition. We need not pause to argue whether or not sex instinct is the most powerful in our nature or whether it ranks after that of self-preservation, nor need we even make the attempt to analyse it into component parts. The essential thing for us to remember is that the word as used psychologically and in psychotherapy has the broadest possible significance, and includes a large number of activities which are not called sexual in the ordinary limited sense of the word.

It is futile to object to Freud's views as to the power of the sex instinct unless one is in some kind of agreement with him as to the sense in which this word is used. He uses the term to cover various feelings to which we should give such names as friendliness, attraction, modesty, and so forth. Whilst it may be argued that Freud's use is too broad, it might equally be shown that we use it in too narrow a sense. For example, it seems obvious that there must be a "sexual" factor in the regard of any man for any woman, yet the average man would feel grossly insulted were it suggested that sex attraction played any part in his friendly relations with, say the relatives and sisters of his wife. This is because he interprets it as definite sexual relationships and acts, and nothing more. The astonishing thing is how any one can possibly fail to appreciate the unique driving and compelling power of the sex instinct, even using the word in the ordinary limited sense. One has observed a girl change from childhood to womanhood under one's very own eyes, not referring merely to bodily changes, remarkable and striking though these may be, but to the complete alteration in outlook and behaviour which accompanies the growing consciousness of sex.

A moment's consideration will show that of all human instincts there is none which is subjected to such intense and prolonged process of training, refining, and adapting to the conditions of civilised life as the sex instinct. In the discussion of herd instinct it was pointed out how it conflicts with the sexual instinct at every point, leaving but the one solution of lawful marriage, which does violence to neither. Now if this is considered in detail it will be seen that a very great part of

the whole process of education and training is devoted to checking manifestations of the sex instinct and attempting to adapt it to the demands of civilised society. We may take as an instance the fact that at a certain age, the young child may take a great delight in removing its cloths or exposing itself. This tendency is very promptly and properly checked by those who have the care of it until finally it ceases to appear. The immense majority of children, at the time when puberty is reached have had it firmly and indelibly impressed upon them that the whole matter of sex is something not only fascinatingly mysterious but altogether wicked and wrong, and only to be spoken or thought of covertly and in the absence of parents and teachers. Deception follows as a matter of course, and may go on to such lengths as in the classical case reported of a girl who had led the life of grossest immorality and had given birth to two illegitimate children, although her mother assured the physician that her child was utterly ignorant of the meaning of sex. Such teaching should be condemned, and children when old enough should be openly enlightened on these matters.

It is only when the processes of repression and sublimation do not function properly, or when repression is applied to material which ought not to be repressed, that the state of things is pathological.

Now take for example the childish tendency to show off its naked body, to which we have just referred. The ordinary young woman, or flapper, is not only unconscious of any such tendency (although such exists), but would strongly resent any suggestion that it existed or had ever existed in her. Its manifestations, however, are obvious in such details of dress as low necks, short sleeves, abbreviated skirts, or absence thereof, and the open work or skin coloured stockings, most girls, when they sit down usually showing more than is desired. The rationalisations that such things are modern, convenient, in accordance with the dictates of fashion, are quite satisfactory to them, and serve to prevent any realization of the real rude nature of these manifestations arising in consciousness. The sex factor is very important in the maintaining of health: as a matter of fact the immense majority of nervous cases prove to have a very important sex factors at their root. So long as the patient fully realises that the conflict exists and consciously decides upon certain course of action, the conflict here cannot be regarded as pathological. For a man to do a wrong, his mental health won't be affected so long as he realises that he has deliberately chosen to deal with the conflict in this way. In the second place, any evasion of a conflict implies a certain amount of repression, and repression is not a conscious act. It is a natural tendency which exists in us all, and to a very much more marked degree in the neurotic.

We have seen that material which has been repressed by an individual spends its energy in attempting to manifest itself in his consciousness in some form which he will not recognise, and will therefore tolerate. In this attempt it makes use of the various mental mechanisms which have been described. What had been said concerning the unconscious mind and in particular its entirely egocentric and uneducateable nature must constantly be remembered. The devices by which it may be said to hoodwink the repressing power or "censure" of the individual are almost incredibly ingenious.

Even in the everyday life of normal persons delightful instances are constantly to be met with in which the unconscious cores off the conscious mind, with all the odds against it, and it has been said that all slips of the tongue and pen, and even in most trivial unusual actions and eccentricities, are instances of this.

We now approach the wonderful study of *DREAMS*, and in passing consider the strongest and certainly the most fascinating card that the repressed material has to play in its effort to manifest itself, namely that of *SYMBOLISM*. The whole question of symbolism is one of great complexity, into which it will not be necessary in my discourse to go into completely. It has often been pointed out that it is characteristic of the average human mind to think and speak in pictures and symbols rather than in actual thoughts and groups of ideas which these symbols represent. Words themselves are, in one sense, nothing but symbols, and a moment's reflection will show what an enormous part of our speaking and thinking is carried out purely by the use of symbols. We meet an officer in uniform, and have conveyed to us the ideas that he is a Colonel and that he is also a doctor, and that he has served four years on active service, and that he was singled out for special recognition and awarded a decoration known as the Victoria Cross. We come by all this information, not because he carries a placard announcing these facts, but because he carries a few pence worth of metal and ribbons arranged in certain ways; things intrinsically worthless, which have ideas attached to them, in other words symbols. We speak of fighting for the flag, and it need hardly be pointed out that no sane man would shed his blood for a piece of coloured cloth, unless it was the accepted representative in his mind of ideas for which he was prepared to die. Many of the things we prize most dearly have their worth, not in themselves, but in the ideas for which they stand. A rose is the concrete representation of enough sentiment to cover the earth; a plain gold ring, and a plain wooden cross stand for ideas which volumes cannot fully express.

In the using of symbols, and the performing of symbolic acts, it is essential that all the parties concerned should know what the symbols stand for, and that it should stand for the same thing for everybody. When one removes one's hat when passing a lady, one assumes that she has been trained, as the rest of us have, to regard that strange and irrational act as a symbolic one representing ideas of courtesy and respect. Had she not been trained she would regard the proceeding as distinctly eccentric, much as we would regard the action of any one who proceeded to take off his boots before entering a place of worship—an action which would be considered perfectly right and proper in India. Symbols mean nothing, and, in fact, cease to be regarded as symbols until one knows the key. The same symbol, however, may convey utterly different meanings to different people, or even the same person at different times and in different environments. To the railwayman on duty a red flag means danger, but to the railwayman taking a day off for a Socialist demonstration a red flag means something very different. (May be Bolshevism, but perhaps this is also a sign of danger).

Repressed complexes show quite remarkable ability to symbolise in their attempt to avoid repression and enter consciousness unrecognised. They appear symbolised, and very often the first essential in treatment is for the patient and physician to find the key, which neither of them know to begin with. We are in fact, literally presented with a picture puzzle of the kind which are still popular in magazine competitions—ideas expressed in pictures. In minor everyday instances, outsiders frequently understand the symbol without any great difficulty. To a certain extent this comes into play in its very simplest form in what we call reading character. Braithwaite describes Sir Berkeley's eyes as "an outward sign of all the warmth within." The pedantic phraseology and many-syllabled speech of a certain type of man is but a symbolic expression of an intellectual conceit which social tradition forbids him to show directly. When we say that a man is "oozing with self-importance," we are saying something which we know he would deny with his last breath: we have really deduced it from its symbolic manifestation, such as his dress, which we call affected; his gait, which we call pompous or mincing; his tone and accent, which we call "side", and of which Hong Kong is full to overflowing. These are all symbols, and in this particular instance we know the key.

In everyday life, this symbolising process has limits in sane people. The less normal he is, the more will utterly strange and foreign matters tend to reach consciousness in this way, but so long as he retains a reasonable grip on reality the process is limited. **When does the normal person lose grip on reality?**

Obviously **when he is asleep**. If, therefore, the duel between re-presented complex and repressing force continues during sleep, which happens to be the case, surely sleep would be an ideal time for a complex to make a special effort to express itself, for the good reason that consciousness is now so dim, so vague, so deprived of its highest functions, such as those of criticism and judgment, that it will accept almost anything which can evade the still active censure, no matter how absurd, grotesque, and opposed to reality its disguise, may be. Such a special effort is made, and the result is a DREAM. While it may well be called one of the fairy tales of science, it is, none the less, literally true. **A dream is a symbolic picture of the realisation of an unconscious wish:** it represents the free expression of an instinctive tendency which has been subjected to repression. It represents it in a disguised and symbolised form because repression has to be circumvented and sleep has to be preserved. The repression will pass nothing which the dreamer would recognise in its true colours, and which would startle him into wakefulness. It is obvious, too, that a symbolised and pictured presentation of the idea is demanded by the circumstances of the case. The intellectual element in a dream is nil. There are no normal values, comparisons, alternatives, which can be estimated and considered; there are no "ifs," "buts," "althoughs," "eithers," "ors," in a dream. The whole thing is bound to be dramatised:—picture writing pure and simple.

We have here a most admirable method of discovering the nature of a patient's buried complexes, and the sources of his conflicts, if we could but obtain the key to the symbolic pictures which his dreams offer to us. The analysis of dreams has been designated the royal road to the unconscious. It is an essential factor in psychoanalytic treatment.

One must begin to attempt to analyse his own dreams and those of others. The subject is as difficult as it is fascinating, but it should be noted that, especially after a certain amount of ability and experience have been gained, it is unwise to analyse the dreams of one's friends unless the matter is fully understood to be one of thorough scientific or medical treatment. There are two golden rules which will greatly assist you, if they are constantly kept in mind. The first is to remember that the dream is an idea expressed in a picture. Take pencil and paper, and endeavour by a drawing, or a series of drawings, to express some given idea, and you will realise something of the limitations and difficulties which it involves. The nearest approach to it is the cartoon. Take an example from PUNCH. The President of the United States is depicted as an Indian brave sitting outside the council tent and filling a large pipe from a tin of tobacco. At the first glance such a picture would seem to many to be quite meaningless, and even grotesque. The President of the United

States is not an Indian brave, and may very possibly be a non-smoker. Such comments are precisely parallel to those one frequently hears made by persons who can "see no sense in their dreams." They never had a costume of the kind the dream depicts; they could not possibly leap through windows, or fall down precipices in the way their dream makes them do, and so on. On looking a little further at the apparently insignificant details of the cartoon, however, we find that the council tent is ornamented on the outside by pictures of an eagle in a certain attitude, and a dove with a leaf in its mouth, also that the label of the tobacco tin describes it as the "All-round Navy Cut," and that the trademark consists of two two globes or spheres united by a connecting band. In studying the cartoon we realise that it is upon these details that its meaning depends. The fact that the President is in a costume and situation quite inconsistent with reality does not distress us, although it is, to the superficial glance by far the most striking part of the picture, and at once proceeded to consider what the symbolic meaning, if any, the above details may have. The dove with the leaf in its mouth instantly and inevitably suggests the idea of **PEACE**. The posturing eagle at once suggests the idea of **AMERICA**, and the legend on the label, "All-round Navy Cut," becomes an obvious *DOUBLE ENTENDRE* which has a meaning far removed from tobacco. Returning now to the central figure, with these other symbols interpreted, it is a natural consequence that the picture of an Indian brave filling a large pipe of peculiar appearance should suggest the "pipe of **peace**." **The idea of the cartoon**, then as distinguished from its superficial appearance, has to do with **America**, with a conclave or **council of some kind**, with **peace**, and with an **all-round naval "cut" or diminution**. At this stage our ordinary knowledge of affairs makes it clear that the cartoon is concerned with the **Washington Conference**. This illustration shows us the extraordinary importance of apparently minor details, the frequent comparative insignificance of what may seem to be the striking points in the picture, and the fact that, as one proceeds from detail to detail, the significance of the points which were at first obscure often become suddenly apparent. The illustration may also be used to bring out the second of the golden rules mentioned, namely, to remember always the difference between objective reality and psychological reality. A Red Indian is an essential part of the cartoon, but had one had this picture described to one as a dream, and assumed that the central figure must represent a "real" man, and that the dream was about "a Red Indian," one might have spent a very long time in an unsuccessful attempt to elucidate the dream by inviting the dreamer to recall a Red Indian of his acquaintance.

The dream may be regarded as having a framework on which it moulds itself into the shape in which the dreamer ex-

periences and relates it. The framework is the "manifest content," and it is the central idea which is called its "latent content," and the latter is the idea, tendency, or wish which the dreamer's unconsciousmind is striving to express.

A dream may also be likened unto a charade—an impromptu play, whose object is to present a word to the audience in some clever disguise. The properties are taken from those articles of furniture lying around which happen to be best adapted for the purpose. Hence a walking stick may be used as a sceptre, or an oar, or a fishing rod, or a WALKING STICK, as the charade may require. The word or idea is, moreover, expressed in successive scenes, syllable by syllable. As all sorts of puns and plays upon words are legitimate, and the successive scenes generally appear nonsensical and disconnected until all have been first analysed and then resynthesised. Freud has a good illustration in a dream of one of his children, who, having been sent supperless to bed for some misdemeanour, was heard in her sleep to repeat a list of various dainties in which she was most delighted. She was obviously fulfilling, a desire for a gastro-nomic orgy, by way of compensation for the missed supper, and the unconscious mind adopted its characteristic method of simply representing her with pictures of the good things she desired. Now, and then, when the incitement of the wish happens to arise during sleep, there may be very little distortion. A man who has eaten a supper of sardines, salt herring or something of the kind, dreams that he is at a soda fountain, drinking draught after draught of thirst-quenching fluid. Finally he awakes to find that he is very thirsty. The two main functions of a dream are here most beautifully illustrated and combined. The wish is gratified and sleep is preserved until the organic sensation becomes too strong.

Finally, we come to the study of DREAM ANALYSIS. The matter is not difficult in itself but is rendered more complicated by the fact that some views of dream analysis differ so profoundly from the original Freudian theories on important points. One of Freud's greatest opponents was his greatest pupil, Jung of Zurich, although modified views have been aired by Maeder, Adler, Silberer, and others.

We have already seen that the dream consists of a manifest and a latent content, and that the former is a distorted and symbolised expression of the latter, which is an unconscious "wish" in the explained sense of the word. The dream may thus be regarded as yet another instance of compromise between repressed material and repressing force. On the other hand, sleep is preserved and an unacceptable idea is prevented from obtruding itself, recognisably into consciousness, while on

the other hand the unacceptable idea or "wish" succeeds in entering consciousness unrecognised, and proceeds to realise itself in a sensory picture of its immediate gratification.

The means by which the repressing force or "dream censorship" deals with the dream ideas and prevents their true nature and significance from becoming apparent to consciousness are known as "distorting mechanisms" and are usually described under four heads, namely, 1 CONDENSATION, 2 DRAMATISATION, 3 DISPLACEMENT, 4 SECONDARY ELABORATION.

**CONDENSATION**—The manifest content is a summary of the latent content, and many of the ideas in the latter may be represented by one and the same part of the former. When this is so, the item in the manifest content is said to be "overdetermined." Condensation is an admirable means of distortion, and also almost a necessity, because without some fusion of pictures and events the dream would have to be of phenomenal length to express its latent content. Composite figures, which are very common in dreams, are good illustrations of condensation. Thus, a patient dreamed of a man with a nose of peculiar shape, and strikingly arranged white hair. Except for the hair, the picture was of a man she knew very well, but the hair was that of the man's wife, who, as analysis showed, had also an important place in the dream, and the composite picture was a "condensation" portrait representing the two. Another dreamed of a house, which he recognised as his own home, except that the surrounding street and squares were not those of his own home town. He finally recognised the surroundings as being part of a distant town in which he was anxious to settle down. This idea in the dream was thus presented with the greatest possible vividness, conciseness, and economy of imagery.

**DRAMATISATION**: the dream thoughts are presented as visual images, and one of the consequences of such a regression to picture writing is that the expression of abstract thought, of relationships involving conditions and possibilities, or moral values, and so on, becomes a matter of great difficulty. Sometimes the problem is abandoned, and information about, for instance, the relationship of two dream pictures to one another, must be sought from the context. In other cases the dream expresses abstract thoughts by methods which show wonderful and varying degrees of crudity and ingenuity. Thus the dreamer's right and left may stand for moral right and wrong, and the importance or worth of a person may be indicated by the style and title, or physical size with which the dream invests him. An alternative to a conditional dependence may be presented as two consecutive pictures.

**DISPLACEMENT** The most apparently important or conspicuous elements in the manifest content may not represent



correspondingly important dream thoughts. These, as we noticed in the analogy of the cartoon, may be represented by some apparently trivial incident or object. In addition to this "somatic displacement" often occurs, one part of the body representing another, as in the case recorded by Stoddart, where a patient dreamed that she had an intense headache which was relieved by her emitting masses of red flesh from her mouth. Analysis showed this to represent the process of parturition.

The last of the "distorting mechanisms" is known as SECONDARY ELABORATION, and this, unlike the other three, functions after the dream is over, and may be regarded as a final effort of the dreamcensorship to safeguard consciousness from a knowledge of the dream thoughts. The rapidity with which a dream is forgotten on awaking is proverbial, and in cases where it is remembered the dreamer's efforts at recollection are influenced by the process of "secondary elaboration," the dream as noted by the dreamer immediately on awaking, will often be found to be very different from the dream as he relates it some hours later. The dreamer tends to put into a more coherent and connected form the dream which really was not so carefully connected, and he omits or alters the apparently minor details, which are in all probability the points at which the disguise was dangerously thin. This process is entirely apart from any intention on the part of the dreamer to give an inaccurate report.

The dream, according to Freud, arises from some of the activities and interests of the day preceding it, and from memories, wishes, and experiences associated therewith. These "day remnants" would be elements threatening disturbance of sleep, and in using them the dream shows itself to be the guardian of sleep. They are in the subconscious mind of the dreamer, and are subjected to the distortion mechanisms in the production of the dream. In every case this is a mere covering for the central "wish" of the dream, and that this "wish" is a product of the true unconscious mind—something instinctive, infantile, repressed, and almost certainly sexual. This central "wish" expresses itself by means of a symbol which, being unintelligible to the dreamer's consciousness, is "passed through," as it were, into the dream without further distortion. It is disguised already, because symbolism is the language—the only language—of the true unconscious. The symbols it uses, moreover, were not acquired or learned, still less are they the choice of the individual and explainable by his personal experiences and associations. They are the birthright of the unconscious, derived from a time when the human race was very young, and their key is only to be found from a knowledge of primitive peoples and languages, fairy tales, legends, and myths. Dream analysis proceeds by taking the items of the manifest content in succession as starting points for free association by the patient in the manner described. By this means the work of the

distortion mechanisms is soon made clear, and a remarkable amount of psychic material is unfolded. No amount of association on the dreamer's part will lead him to an understanding of the symbols in his dream, which are the chief clue to its central wish, and the analyst himself must interpret these by virtue of his knowledge of the universal symbolism used by the unconscious and manifested in art, folk lore, the history of primitive peoples, the origin of language and so forth. As a practical point it may be stated that it tends to involve all but the very experienced in hopeless confusion between objective and psychological reality in their attempts to decide whether any given element in a dream is a symbol in the above sense or not. This is one of a categorical list of difficulties mentioned by Freud. The great objection to this view of "fixed symbolism" is that it involves the arbitrary interpretation which it therefore invites. A box, a room, an open door, are taken straight away as representing the vagina, just as a pillar, or steeple are bound to symbolise the penis. This may be usually found correct, but it tends to blind one to the possibilities that the open door might represent "opportunity," and the church steeple a striving after righteousness, or there may be a separate meaning, or symbolism of their own. The tale is told of a little girl who showed great amusement, when her teacher announced a lecture on wading birds, of which the first was the stork. When asked to explain her laughter, the child replied with a knowing smile: "Oh! but teacher, the idea of there really being any storks!" The stork as a sexual symbol was so well known to the child that she had no use for it in any other capacity, the idea of the stork as an objective reality, with nothing symbolic about it, had never occurred to her as a possibility.

Hence, dream analysis on the above lines, when complete, lays bare the repressed unconscious "wish" which is the central point, and that is all. It thus is an aid to the exploration of patient's true unconsciousness; it helps to discover his infantile tendencies.

On the other hand, Jung regards the unconscious mind as consisting of two parts—a "personal," and a "collective" unconscious, which later is possessed by every individual at birth. It does not contain anything, which, being derived from experience, is personal to the individual, but it is the source from which arise the instincts which we all have in common, and the earliest rudiments of feeling and thought which are common property of all men, and give some sort of uniformity to the way in which the races and generations of mankind have apprehended the world. The collective unconscious is a source of the legends, fairy tales, myths, and religions which are common to all races of men, and this explains their general similarity in every country and in every age. From this original difference arise difficulties as to

the nature and importance of repression the definition of symbolism, etc., until the two theories of psychology and psychopathology are now quite distinct from one another. Appreciation of their differences is only possible by detailed study of each, and here I shall merely summarize the view of dream interpretation to which Jung has been led. He does not deny the validity of Freud's conclusions, and he uses the same general methods of analysing dreams, but his views of symbols are very different. He does not believe in fixed symbolism, and holds that the meaning of a symbol may vary in different psychological situations—using the word in a broader sense than Freud, extending it to almost any variety of indirect representation. The main characteristic of Jung's view of dreams is the place he gives to the "compensatory function" of the unconscious—neglected rather than "repressed"—enter the conscious mind during sleep and present the dreamer with a picture of his psychological situation as it appears to his unconscious, thus offering an alternative to the attitude which his conscious mind may have adopted. The dream thus deals with the present problems of the dreamer, and offers a statement of these from the point of view of the unconscious, and sometimes even an attempt to solve them. This statement is disguised, not because its content is necessary unacceptable, but because the language of the unconscious, namely picture and symbol, has long been superseded by the conscious mind and is not now understood by it until it is interpreted. The interpretation is "subjective" in method, the incidents and characters in the dreams all being regarded as some aspect of the dreamer himself, being his unconscious attitude to his psychological situation and current conflicts. Thus, I dream a dream: it appears that a certain piece of work which has baffled me is being successfully undertaken by my friend Professor \_\_\_\_\_ who has in reality nothing to do with it. Why is this Professor in my dream? What do I associate with him? What does he mean to me? What part or aspect of me does he stand for? I cannot even think of Professor \_\_\_\_\_ without recalling the self-confidence which I have admired in him ever since I first knew him. He is to me a living example of the power of self-reliance even when unaccompanied by great special gifts. Replace him in the dream by this quality of which I regarded him as representative or "symbol" of, and the contribution which this "subjective" interpretation has to make towards the solution of my problem becomes clear.

It will be found that some dreams are more easily treated "reductively" on the lines of Freud, while others can more readily be interpreted on the "constructive" lines of Jung.

The Book of Daniel (chapters 1-6) shows a very clear way how King Nebucadnezzar had two very mystifying dreams, and how Daniel analyses these two wonderful dreams which have a

very realistic meaning. Dreams which actually came true, of which there are many more examples in history, and in daily life.

We have spoken of dreaming of "castles in the air:" don't forget to bring them down to Earth. Make the psychological reality a physical reality wherever possible. We dream of a great University in Hong Kong. I wonder if our dreams will come true? Remember it is steadily advancing with the times. We not only dream of a great University, but of great men, emanating from this school of learning. You have great ambitions! Don't let people spoil them by sneering at you! Ignore them. You dream of a great future, and I can assure you that it is within your power to make those dreams come true. This is how you can do it: Whatever you are called upon to do should receive your wholehearted attention and interest, your maximum ability. Do it in such a way that those above you will take notice. You can compel them to notice you if only you have enough vigour and common sense. It depends upon you. To become despondent about your lot in life is to belittle yourself. To be determined on better things will surely bring its reward. In gauging your importance do not allow yourself to float in a sea of superlative egotism. Do not let your head swell. A proper estimate of one's self must include credit for retaining control. When you realise your own importance you will keep control of it, so that you may apply your power in a sensible and cool way. You are bigger than you think you are. Act up to this. Then as the years go by you will bring your "castles in the air" down to the reality of Mother Earth, and your dreams will be interpreted in a very realistic way. Indeed your dreams will then come true.

(I am indebted to Professor Henry Yellowless for the use of his excellent notes, and lectures on Psychology and Psychotherapy.)



## Editorial.

### LONGEVITY.

With the approach of Christmas and soon the New Year, one's thoughts turn to the conventional greetings of Happiness and Long Life.

“Life, which all creatures love and strive to keep,  
Wonderful, dear, and pleasant unto each,  
Even to the meanest.”

The desire for longevity is universal. It is found in the greetings of many peoples, in the literature and customs of many lands and at various stages of history.

It is therefore refreshing to read that Dr. Hornell Hart contends, from the present rate of lengthening of human life, and from the progress of science that by A.D. 2000, the average duration of human life will be 100 years—and babies then born will have the chance of reaching that ultra-venerable age of 200 years. This seems to us to be an extravagant conception.

Cicero said centuries ago that “to live long it is necessary to live slowly.”—and our Age is anything but slow. It is true that in certain respects Science is materially helping to prolong life, but there are other factors that seem to work *pari passu* in the opposite direction. Thus in 1908, the number of automobile accidents in one place was 8 per million of population, but in 1923, it had gone up to 149 per million; again, according to the report of the Registrar-General, the total number of deaths from cancer in England and Wales in 1923 was 48,000—in 1924, it was 50,000—the highest figures yet recorded; and there are other such examples that will occur to one which all tend to show that for every factor that seems to work for the prolongation of life there are others that work against it.

A more rational view, and one that is apparently supported by actuarial experience is that there is a natural limit of 100 years to life.

This limit does not seem to be impossible of attainment. There are certain diseases like malaria, that are preventable, and that ought to be prevented, and by their prevention, the average duration of life can be lengthened. Quoting from a paper by Prof. Fisher of Yale, we find that “deaths from tuberculosis could be prevented by 75 per cent. thereby adding 2.5 years to human life; those from typhoid fever 85 per cent., adding 0.6 years; diphtheria 70 per cent., adding 0.5 years.”

Preventive medicine thus plays an important part in society to-day. It is not enough for the patient merely to call in the

doctor when he is ill. He should be examined periodically, and if necessary overhauled by his doctor at certain times. It is only then that diseases can be detected at their onset and treatment will be more likely to be successful. Any one familiar with clinics in the East will no doubt recall cases who come filled with hope and faith that their maladies can be cured only to be astounded with the sad statement "Too late."

Where the disease has already gained a footing, life may yet be prolonged by careful treatment. In a well-organised society, therefore, there should not only be enough doctors to make periodical examinations of the inhabitants, advising them about their health, but there should also be enough institutions and Hospitals in which cases can be treated.

In this respect, we are woefully conscious of our shortcomings in this little colony of Hong Kong.

According to the census for 1925, the total civil population of Hong Kong (including foreigners) was 874,420; the total hospital accommodation available for this number was about 2,000 beds; the annual expenditure for the Medical Department was \$500,000. A sister colony not far from us has a population of about 900,000; and her annual expenditure for the Medical service was \$2,000,000!—and yet Hong Kong is one of the greatest ports of the world with the total tonnage of ships (1924) of 56,731,077, while London had only 47,664,975 and New York—37,733,000.

In season and out of season we have pleaded, feebly perhaps like the still small voice, but nevertheless persistently for interest and support of the medical service in this colony—for the need is great. There are no hospitals for children, no place for the treatment of such orthopaedic cases that need more time and attention, and no sanatorium. But we will go on fighting until the consciences of Hong Kong's better-off classes will not neglect the sick and the needy, the aged and the blind in their midst. Christmas is a season for noble impulses, and the New Year a time for making laudable resolutions—(even though they may only be resolutions)—but we trust something more tangible than mere effusions of goodwill will emerge from this year's celebrations. The colony's finances were not ever thus nor hope to be and even now with things as they are it will not be overtaxing the colony's resources to build hospitals if we mean so to do. To visitors to these shores we point with pride to our beautiful motor roads and wonderful harbour. Excellent though these are is it not the better part of pride to be able to point to our splendidly equipped hospitals where many are daily restored to health and usefulness? As Emerson says, "The first wealth is health" and in giving generously to the support of the colony's health work, it will only be a case of "casting thy bread upon the waters, for thou shalt find it after many days."

It would be a grave mistake; however, to aim merely at prolonging life—for what can be more pathetic than to see a decrepit old man in his second childhood? He does not live, he exists, and it is a cruel perversity to keep him alive. It sounds hard, but it is no less true, and longevity without health, without the use of those faculties which make life worthwhile, is a dread state from which one should devoutly desire to be delivered.

Sir William Osler is often credited with the remark that above sixty years of age a man should be peacefully despatched by chloroform for he maintains that “a large proportion of the evils of the world may be traced to sexagenarians—nearly all the great mistakes politically and socially, all of the worst poems, most of the bad pictures, a majority of the bad novels, not a few of the bad sermons and speeches.” While we cannot agree *in toto* with what he says, we believe his views are not unsustained by the practices of certain cannibalistic races. These people agree with him in principle but they differ in their methods of disposing a sexagenarian—they eat him instead!

Few of us are as practical as all that. At any rate we should be better employed if instead of aiming at prolonging life beyond the allotted span of three score years and ten, we make an effort to preserve the lives of those that are born. The infant mortality rate in China is said to be 30 to 40 per cent.; in India it is 40 per cent.; in Great Britain it is only 11 per cent. Our guiding principle should be to reduce infant mortality to the lowest possible, and to give a chance for every life to fill out its natural span and purpose whatever these may be, and not to be, as it were, nipped in the bud. We believe with Crabbe that “life is not measured by the time we live”—

“We live in deeds, not years; in thoughts not breaths;  
In feeling, not in figures on a dial.

We should not count time by heart-throbs. He most  
lives,

Who thinks most, feels the noblest, acts the best.”

S. W. P.



## Clinical Atlas.

by Dr. Alexander Cannon.

### 3.—A Synopsis of Sir Berkeley Moynihan's lecture on CARCINOMA OF THE COLON.

#### *Symptoms.*

In the majority of cases advice is sought because of

- |                                              |                                                                                                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------|
| (a) The presence of a tumour.                | $\left. \begin{array}{l} \text{acute} \\ \text{subacute} \\ \text{chronic} \end{array} \right\}$ |
| (b) The existence of intestinal obstruction, |                                                                                                  |

Careful enquiry reveals earlier symptoms and signs. These are:—

- (a) *Pain and discomfort*, colicky in character, often following quickly upon meals, and giving a sense of great intestinal turmoil, and of uneasy, erratic, exaggerated movement. Accompanying the pain are borborygmi, often extremely loud so that "they can be heard in the next room."
- (b) *Intestinal irregularity*. The character of this varies according to the site of the growth. The colon is developed from the mid-gut and from the hind-gut, and the point of their union is somewhere along the "anastomosis magna" of Riolan, the vascular arch uniting the middle colic to the left colic artery. The function of the foregut is to receive and prepare the food for digestion, of the mid-gut to digest and absorb it; of the hind-gut to store and expel it. The mid-gut extends from the Ampulla of Vater in the second part of the duodenum, to the middle of the transverse colon; that part of it which develops into the small intestine breaks up, digests and absorbs the solid food, and that which develops into the colon absorbs the fluids. *We eat with our small intestine and drink with our large intestine.* The contents of the caecum and ascending colon are normally fluid: liquid is absorbed rapidly, and by the time the hind-gut is reached the faeces are drier and of a firmer consistence.

If any obstruction occurs in that part of the colon developed from the mid-gut the form of intestinal irregularity tends to diarrhoea; if the growth is in that part of the colon developed from the hind-gut the irregularity tends to constipation. It is very rare to find constipation as a symptom of a growth of the right colon, and rare to find it absent in a growth of the left colon. The different consistency of the contents explains this condition.



There is not infrequently a history in cases of left-sided malignant disease of "little attacks" of intestinal occlusion, or difficulty extending over 2, 3, or 4 days overcome by drastic aperients or enemas.

- (c) *Changes in the faeces are not only in their consistence but in their constituents.* When a growth is present blood is commonly seen, and is probably always present if repeated careful search is made. Mucous in great excess is due to the inflammation of the mucosa always found above a growth. The passage of a motion consisting of pure blood has occasionally been the first warning of the presence of a growth.
- (d) *Anaemia* is present and is a striking feature in 20% of all colonic growths, and in 50% of the growths in the ascending colon. The condition in severe cases approaches that of pernicious anaemia.
- (e) *Tumours.* The tumour formed is often small and quite imperceptible unless the patient is thin, or the growth involves an easily accessible portion of the gut. In many cases the tumour felt is due to the accumulation of hardened faecal masses behind a growth, or to great hypertrophy of the muscular coat. When the abdomen is examined to discover a tumour the bowel may be felt to distend and harden, and then slowly to relax under the hand. Wherever the growth is placed the caecum distends to a greater degree than any other part. So great may its overfilling be, that rupture may occur even when the obstruction is in the lower part of the hin-gut.
- (f) *Radiological examination.* The bismuth or barium meal gives little help. The barium enema sometimes shows a filling-defect, very similar to that seen in carcinoma of the stomach. This defect may be mimicked either by the presence of solid faeces in the intestine, or of the accumulation of gas. Before examination is begun the bowel must be cleared. The filling-defect of carcinoma is distinguished by its constancy in position and in degree, and by the absence of any change in it under manipulation.

**THE PATHOLOGICAL ANATOMY** of colonic carcinoma indicates that it is slow in growth, remains long restricted to the intestinal wall, does not spread rapidly or largely in the primary glands, and even on cases of carcinoma of the colon the following conditions were found. In 21 cases the disease had spread outside the bowel wall and had become generalized; in 36 primary lymphatic glands were enlarged; in 55 cases the growth was limited to the gut. In 363 cases of carcinoma of the colon, the disease was in the ascending part in 18.2%, in

the transverse part in 29.7%, and in the sigmoid in 52.1%. The local changes produced by the growth, are (1) stenosis, (2) breaking down of the growth and erosion of the wall producing local adhesive peritonitis, or haemorrhage, or perforation into the peritoneum or rarely into a hollow organ to form a fistula (3) ulceration and dilatation of the bowel above the stenosis.

**SURGICAL TREATMENT.** Growths in the colon are low in the scale of malignancy; they do not spread widely or rapidly in, or away from, the bowel; their vascular and lymph vascular territories so closely correspond that a free removal of glands can safely be made, wide resection is easy, and subsequent anastomoses are often made without difficulty. The primary growth, its extension in the intestinal wall, and all primary and many secondary glands, can therefore in most cases be removed in one block. These are all facts which entitle us to say that few places in the body affected by carcinoma are so accessible and safe for curative operations as the colon.

**OPERATION.** Resection.

1. Mobilize the colon by incision along the "white line."
2. Ligate main vascular trunks connected with bowel to be removed.
3. Clamp upper and lower limits of bowel to be removed; two clamps at each end.
4. Divide gut between each pair of clamps and remove intestine with growth.
5. Anastomose upper and lower openings by
  - a. end-to-end method.
  - b. side-to-side method.
  - c. end-to-side method.

In the cases of acute obstruction due to a growth in the colon, two courses may be followed:—

1. Typhlotomy followed by resection a fortnight later.
2. Paul's operation.

The steps of the operation of resection described above are followed, but the ends of the intestine instead of being joined together are brought side by side to the surface. A "double-barrelled" colotomy opening is left. In 10 days, or less, when the bowel is thoroughly emptied the "spur" between the two openings is destroyed little by little by a clamp, and the single surface opening closed when the bowels are acting normally.

Sir Berkeley says: "If nature dictates that I am ever to suffer from a carcinoma, may the Lord have mercy upon me, and place it in my colon: there it gives me the best chance of recovery after operation."

## 4.—THE MILESTONES OF PREGNANCY.

(Signs and Symptoms in Groups.)

## FIRST THREE MONTH.

*Symptoms.*

1. Amenorrhoea.
2. Breast changes.
3. *Morning sickness.*
4. *Urinary disturbances.*

*Signs.*

1. Enlargement of uterus.
2. Softening of uterus.
3. *Hegar's sign.*
4. Softening of the cervix.
- 5 & 6. Blueing of the Vulva & Vagina.
7. *flat hypogastrium* (due to weight of pelvis weighing down abd. wall).
8. Abderhalden's test.

## BETWEEN THE FOURTH &amp; FIFTH MONTH.

*Symptoms.*

1. Amenorrhoea.
2. Breast changes.
3. *Urinary & gastric symptoms STOP.*
4. "*Quickening*".
5. *Weight of fundus.*

*Signs.*

1. Soft cervix.
2. *Ballotment.*
3. *Intermittent uterine contractions.*
4. Foetal heart (?)
5. Abderhaldens test.

## LAST FIVE MONTHS.

*Symptoms.*

1. Amenorrhoea still persists.
2. Breast changes more marked.
3. & 4. *Pressure symptoms* in bladder & in sacral plexus.

*Signs.*

1. *Fundus rises.*
2. *Umbilicus smoothed out and protruded.*
3. *Foetal heart* (120—160 beats per minute).
4. X-ray.
5. Abderhaldens test.

## SYMPTOMS COMMON TO ALL STAGES.

1. Amenorrhoea.
2. Breast changes.

## SIGNS COMMON TO ALL STAGES.

1. Enlargement of the uterus.
2. Soft cervix.
3. Blue vagina & vulva.
4. Abderhaldens test.

## SPECIAL SYMPTOMS DURING THE FIRST THREE MONTHS.

1. Morning sickness.
2. Urinary disturbances (also during the last month of pregnancy).

## SPECIAL SIGNS DURING THE FIRST THREE MONTHS.

1. Hegar's sign (6th. week to 4th. month).
2. flat hypogastrium.

## SPECIAL SYMPTOMS DURING THE FOURTH MONTH.

1. Quickening.
2. Weight of fundus.

## SPECIAL SIGNS DURING THE FOURTH MONTH.

1. Ballotment.
2. Intermittent uterine contractions (Braxton-Hicks Sign).
3. Funic. souffle.
4. Uterine souffle.

## SPECIAL SYMPTOMS OF THE LAST FIVE MONTHS.

1. Pressure symptoms in bladder and in sacral plexus.

## SPECIAL SIGNS OF THE LAST FIVE MONTHS.

1. Fundus rises.
2. Umbilicus smoothed out.
3. Foetal heart.
4. Foetal parts, are felt.
5. X-ray.

(The above were worked out from a series of over 150 cases). A.C.

N.B. *Italics* indicate very important factors.

## 5. GLANDULAR TUMOURS OF THE NECK.

1. Simple adenitis { acute      In staphylococci and streptococci  
                           subacute    infections there is an excess of  
                           chronic     polymorphs in the blood.
2. Tuberculous disease:
 

Characterised by chronicity; multiplicity of glands; tendency to soften, caseate and rupture leaving a sinus, which on healing shows a tag of skin: periadenitis constant and slight lymphocytosis.
3. Syphilis:
 

Glands multiple: firm, clearly defined—painless—no tendency to suppurate.
4. Leukaemia:
  1. Lymphoid:
 

The red cells are diminished in number. The haemolobin and colour index are lowered. White cells are increased up to 500,000, consisting chiefly of lymphocytes. In both there is a simultaneous appearance of glandular group enlargements in several parts of the body: glands resemble those in Hodgkins' disease.
  2. Leucoid (Spleno-medullary type):
 

Red cells as above. The white cells are increased consisting chiefly of myelocytes. Spleen greatly enlarged.
5. Pseudo-leukaemia:
  1. Aleukaemic lymphomatosis: (Lymphoma). There is a simple increase in the lymphadenoid tissue and a relative increase of lymphocytes in the blood.
  2. Lymphogranulomatosis:
 

There is a peculiar granulation tissue in all the lymphatic structures; secondary anaemia and an increase in the large mononuclears in the blood (Hodgkins' disease). Enlargement of one group of glands, generally cervical, followed sometimes after a long interval by enlargement of other glands in groups. Glands form large masses; they are discrete, smooth, not adherent, not apt to soften or inflame.

## 6. Sarcoma:

## 1. Lymphosarcoma:

The growth begins in lymphatic tissue. The structure is "small round celled".

## 2. Sarcoma of gland:

A rapidly growing tumour originating in a single gland soon causes enlargement of neighbouring glands. Definition is quickly lost; skin reddens, becomes adherent and may rupture, leaving "fungus haematoides" of Hey.

## 7. Carcinoma: Secondary.

Glands at first are hard, increase steadily in size, lose their definition, cause pain, which is rarely severe. Later they may become fixed, though not very firmly; soften and burst, leaving a hard-edged ulcer bleeding readily.

Branchiogenic carcinoma occurs in males (95%) and appears in the upper part of the neck at or above, the level of the cricoid cartilage. In some cases a small tumour, believed to be glandular, has been noticed since childhood. The tumour grows rapidly and quickly becomes fixed to and infiltrates neighbouring structures (e.g. carotid sheath, larynx, trachea, oesophagus, and muscles) causes intense pain, hoarseness of voice, dysphagia, and dyspnoea. It is distinguished from secondary carcinoma by more rapid growth, greater degree of infiltration, and by extremely severe radiating pains.



## 6. CLASSIFICATION OF PATHOLOGICAL LESIONS.

The following international classification is adapted to practical requirements. The full list gives every possible lesion, the portions marked off by capital letters give those lesions which are of common occurrence.

The list applies equally to macroscopic specimens and to histological sections. It also applies when it is desired to review the *causes* of a lesion, or the sequels possible to it. It applies therefore also to clinical work.

Note that many lesions contain changes belonging to more than one heading.

1. MALFORMATIONS: errors of development.
2. CIRCULATORY DISTURBANCES:
  1. Anaemia.
  2. Congestion (active or passive).
  3. Haemorrhages (varying from microscopic focus to a massive haemorrhage).
  4. Thrombosis.
  5. Embolism.
  6. Infarction.
  7. Oedema (varying from a microscopic focus to oedema of a large part of the body).
3. INFLAMMATORY PROCESSES:
  1. Catarrhal or desquamative.
  2. Exudative.
    - (a) serofibrinous.
    - (c) membranous.
    - (b) fibrinous.
    - (d) haemorrhagic.
    - (e) Purulent.
  3. Destructive.
    - (a) Ulceration.
    - (b) Necrosis.
    - (c) Gangrene.
  4. Abscess-formation.
  5. Specific inflammations.
    - (a) Micrococcal (exotoxic).
    - (b) Bacillary (note anaerobes).

- (c) Acid-fasts (the granuloma producing group; and the diphtheroids, or mycobacteria).
- (d) Protozoan (note the metazoa for completeness).
- 6. Productive or proliferative processes.
  - (a) the various forms of chronic inflammation.
  - (b) the process of repair.
  - (c) the fibrosis.
- 4. The infections. The classification of organisms.
- 5. Metabolic diseases:
  - 1. The intoxications (auto-, hetero-).
  - 2. The endocrine diseases.
  - 3. Leukaemias et alia.
  - 4. Gout, arteriosclerosis, acute yellow atrophy.
- 6. REGRESSIVE CHANGES: "DEGENERATIONS":
  - 1. Atrophy.
  - 2. Degeneration in the strict sense.
  - 3. Infiltration.
  - 4. Calculus formation.
  - 5. Simple necrosis.
  - 6. Stenosis.
  - 7. Dilation due to disease. (Under 2, and 3, come cloudy swelling, amyloid disease, and allied states).
- 7. PROGRESSIVE CHANGES: "NEW GROWTHS":
  - 1. Regeneration.
  - 2. Hypertrophy.
  - 3. New Growths in the strict sense.
    - (a) Benign.
    - (b) Indeterminate (either in structure or in malignancy).
    - (c) Malignant:
      - 1. Carcinoma.
      - 2. Indeterminate including hybrid tumours.
        - 1. Sarcoma.
    - (d) Cysts.
- 8. Trauma. Here comes the subject of the surgery of injuries; and "birth processes".



### 9. Operative procedures of all kinds.

On the Decimal System of classification, each series of organs receives a number which is used as the whole number, and each of the above lesions receives a decimal number. Thus 34.331 stands for Gastric Ulcer. 3 means "digestive system". 4 means the fourth part of this (namely stomach), decimal 3 means "inflammatory processes, and the remaining figures refer to: the third group of the inflammatory processes, and the first subvariety of this third group.





The order in which the systems are placed is:

1. Circulatory.
2. Respiratory.
3. Digestive.
4. Haemopoietic and ductless glands.
5. Urogenital.
6. Female reproductive organs.
7. Nervous system.
8. Musculocutaneous.
9. Osseous and Articular.
10. Regions.



(Fuller details appear in the Catalogue of the Museum of the M'Gill University).





## 7. Sir Berkeley Moynihan's classification of INJURIES TO THE BRAIN.

	Vascular Changes.		Ocular Changes.	
	<i>Normal side.</i>	<i>Compressed side.</i>	<i>Normal side.</i>	<i>Compressed side.</i>
<b>Slight pressure.</b>	nil.	venous engorgement.	nil.	contracted.
<b>Moderate pressure.</b>		slight anaemia		slightly dilated & fixed
<b>Severe pressure.</b>		complete anaemia complete paralysis & death.		fully dilated & fixed.

**HUTCHINSON'S PUPIL:** when the eye of the unaffected side is normal and on the affected side the pupil is dilated and fixed (unresponsive.)

SYMPTOMS: 1. Irritative (congestion).  produced by pressure.  
2. Paralytic (anaemia). 

1. Headache, mental dulness, sense of oppression  drowsiness

 pugnacious & obstrusive (if produced rapidly.)

2. Self explanatory.

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**Correspondence.****THE HOSPITAL OF THE ROCKEFELLER INSTITUTE  
FOR MEDICAL RESEARCH.**

66th, Street and Avenue A. New York,

March 19th, 1927.

Dr. S. Y. Wong,  
Dept. of Biochemistry,  
Hong Kong University,  
Hong Kong, China.

Dear Dr. Wong:

We have found your persulfate method for accelerating the digestion of Kjeldahls extremely useful. Particularly it shortens the time required for digestion of feces from a good many hours to about twenty minutes. Furthermore, persulfate provided the only suitable oxidizer for micro-Kjeldahls in which the ammonia is determined gasometrically by the hypobromite method. I am forwarding the reprint of this method, together with a few other reprints which may be of interest to you,

With the kindest regards,

Yours sincerely,

(Sd.) Donald D. Van Slyke.



### Review of Books.

**The Life and Work of Sir Patrick Manson, M.D., LL.D., F.R.C.P., F.R.S., etc.:** By Philip Manson-Bahr, D.S.O., M.D., F.R.C.P. A. Alcock, C.I.E., LL.D., F.R.S. 273 pages; 12 Half tone plates; price 17/6. Publishers: Cassell & Co., Ltd.

From the well-known publishing-house of Messrs. Cassell and Company, we have received for review this delightful book which has given us many hours of genuine pleasure and inspiration.

The subject treated of by these authors is a man great and noble measured by whatever standard.

The scenes of his labour Hong Kong, Amoy, Madagascar and Formosa are not merely names, but places familiar to many in this part of the world.

The period of time touched on is a most interesting one. Politically, it gives a rare view of that fast-fading picture of China at the parting of the ways—the old China of superstition, of childlike curiosity and simplicity, of goodnatured toleration of foreigners in general—and the young China, keen alert, critical, suspicious and sensitive. Historically, it deals with the epoch-making period of discoveries of Malaria, Filaria and other such parasites which have since become familiar to every student of Tropical Medicine.

The account of Manson's life and work is an inspiration to many who know and appreciate his difficulties—the lack of facilities for research, the absence of stimulating contact with men and institutions, the paucity of books and instruments, the scarcity of time, the chilling and killing indifference of officialdom and immediate seniors, the sneering innuendos of jealous colleagues, the almost impenetrable pachydermatous prejudices of the ignorant—these are difficulties we only know too well, and our admiration for the man is the greater because he has so successfully overcome them all.

With regard to the book itself, we should like to add these comments:—

- (i) The facsimile signature of Admiral Li Huang-chang on Plate VIII facing p.86 is put the wrong end up.
- (ii) We look in vain for some such polite mode of address as "Mister" or "Doctor" before a man's name. Thus on p.85 were merely the words Sun Yat-sun, which name was further contracted to Sun only on p.114; on pages 85 and 86 Admiral Li Huang-chang was merely mentioned by name without any prefix of honour or respect.

This fault is common with European writers, but when dealing with public men of the calibre of the two mentioned, it is a fault that ought not to be perpetuated. For example, it is not considered good form to make reference to such public men merely as Baldwin, Macdonald, or Coolidge and no one would ever dream of reporting in the Press or stating in a book that "Cecil at the Geneva conference said such and such a thing."

- (iii) The word "Chinaman" has now degenerated into a term of contempt and the word "Chinese" is to be preferred.
- (iv) On p. 14 reference is made to the "Heathen Chinese aspect,"—we read the subsequent paragraphs for enlightenment on the subject and we only came across an account of fraud—which makes us feel inclined to retort that dishonesty is not exclusively a "Heathen Chinese aspect," any more than honesty is a British monopoly.

Apart from these remarks, we have no hesitation in saying that the book will form an ideal present—for it has interest that will appeal to all. To the Easterners (the Chinese)—it gives us the opportunity of seeing ourselves as others see us; to the Westerner, it traces the growth of Tropical Medicine, and the history of China's reception of Western Medicine; to the young layman it gives a gripping account of a great mind tracking down the death-dealing agents of disease with that sleuth-like relentlessness more exciting than the "thrillers" so dear to every schoolboy's heart;—and to all it tells the story of a great and noble life—simple, industrious, kind and humble—the essence of true greatness.

Lastly, to the members of this University the book has a special appeal. Manson was the first Dean of the Hong Kong College of Medicine which was the precursor of the present medical school of the Hong Kong University; he is a graduate (*honoris causa*) of this institution (1921); he was sometime President of the Medical Society here. The authors were colleagues of the present Professor of Medicine—so that the book has an almost Hong Kong flavour about it.

Read with an eye on the events in China to-day, Manson's inaugural address at the opening of the Hong Kong College of Medicine is almost prophetic.

We heartily recommend this book which has not a single dull line in all its 273 pages.

S. W. P.

**The Treatment of Fractures and Dislocations in General Practice:** By C. Max Page, D.S.O., M.S., F.R.C.S., and R. Rowley Bristow, M.B., B.S., F.R.C.S., St. Thomas' Hospital, 275 pages, 148 illustrations, published by The Oxford University Press.

We have received this book from the publishers for review and we take pleasure in stating that it is just the type of practical book that will answer a long felt want.

One criticism on the average textbooks written in the usual conventional way seems to us to be the amount of space devoted and the care taken in describing morbid processes or learned abstract theories but in the description of treatment—which after all is what most people are interested in much is left to the reader's imagination and the latter has often to wade through the waters of Marah in acquiring experience. Details are seldom given and he who would gaily set out to treat on the guidance of such text books will find ere long what broken reeds they are. Of such sins of omission and commission the authors of the book under review are happily guiltless.

We beg, however, to differ from the authors on one small point. On page 45, it is stated that "plaster is not as handy to apply as the standardised ready-made splint"—and a number of reasons are given. We are aware that the view as thus expressed is the conventional view but it seems to us that conventional views are not necessarily always the right views.

To the objections enumerated, we would reply that plaster of Paris splintage gives absolute fixation and if wisely used in conjunction with radiographic screening, the position of the bones after setting and therefore the correction of the deformity can be so rigidly maintained that interference by the patient is rendered unlikely; furthermore it does not need constant adjustment; it is made to fit individual limbs or parts which the ordinary splints cannot claim to be; plaster bandages are easy to carry about, and do not materially multiply the practitioner's outfit—as much as varying sizes and shapes of splints do; the technique of plaster application is not very much more complicated than say, for example the setting up of a knee-traction flexion splint; and if used as a bivalve splint, a plaster casing does not obstruct the giving of physical treatment. If students are given as much facility in mastering the plaster technique as they are in the use of the ordinary splints, there will be no question as to which method will be more popular.

All this, however, is but a minor difference of opinion which can in nowise detract from the general excellence of the book. Lucidly and concisely written and generously illustrated, it is interesting to read and easy to understand, and it is a book which both practitioners and students will find to be more helpful than

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some of the more pretentious tomes, and in acquiring it, the reader will realise that he has made capital investment.

S. W. P.

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**Diseases of the New-born:** By James Burnet, M.A., M.D., F.R.C.P.Ed. 275 pages. Published by Oxford University Press, London.

This book is written with the object of providing the student and practitioner with an elementary guide to this subject. The book for the most part deals with those conditions which are met with in the first four weeks of life.

The subject of diseases of the infant is one that is often neglected owing to the fact that the obstetrician is liable to leave it to the physician, who in his turn omits it from his curriculum because he considers it is the province of the former. The book is well written and should prove of service to those for whom it is intended.

R. E. T.

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**Normal Midwifery for Midwives and Nurses:** By G. W. Theobald, B.A., M.D., F.R.C.S.Ed., M.R.C.L.Lond. 258 pages, illustrated. Published by Oxford University Press.

This little book contains quite a lot of information which should prove of service to the nurse. From the point of view of examiners some of the views expressed are a little unorthodox.

The book is "breezy" in style, even amusing in parts, but it has one great merit, namely that it is practical.

R. E. T.



## Pharmaceutical Notes.

### Plasmoquine (*Bayer.*)

Chemically "Plasmoquine" is an alkyl-amino-6-methoxy-quinoline-salt, which is obtained synthetically. It is, therefore, not derived from quinine, but is an entirely new quinoline derivative. It is a tasteless, bright yellow, finely granular powder, easily soluble in alcohol and in water to the extent of 0.03% at 20°C.

In a series of experiments, "Plasmoquine" showed itself approximately 60 times more potent against the infection of *plasmodium relictum* than quinine. The clinical observations with this new synthetic anti-malarial remedy have proved that it acts in a new and effective way against the parasites of the various forms of malaria.

For tertian and quartan malaria "Plasmoquine" in doses of 0.02 gm. (1/3 gr.) 5 times a day, has an equal therapeutic result as the usual treatment of quinine. Fewer and all forms of parasites disappear in a few days. Relapses appear to be less frequent than in treatment by quinine.

In aestivo-autumnal malaria, "Plasmoquine" promptly destroys the crescents, and is therefore to be looked upon as the first drug, which causes the sexual forms (the gametes), which are responsible for the propagation of this form of malaria, to disappear with certainty from the peripheral blood in a few days. It even prevents in many cases in which the early ring forms (schizonts) are present, the development of crescents.

On the other hand the ring forms (schizonts) of aestivo-autumnal malaria are in the majority of cases not completely destroyed by "Plasmoquine" alone. The combination product of "Plasmoquine" and quinine, known as "Plasmoquine Co." is therefore recommended for aestivo-autumnal malaria.

"Plasmoquine" is pleasant to take and in the vast majority of cases is well borne. It does not cause the well-known drawbacks of quinine, though in many patients it brings on a marked cyanosis and occasional transient pains in the stomach, which rapidly pass off on stopping the drug. Children also and even infants at the breast stand the preparation, in suspension, well.

In cases of idiosyncrasy and in blackwater fever "Plasmoquine," according to the unanimous opinion of investigators is well borne, and cures the complaint, also getting rid of its cause.

"Plasmoquine" is packed in tubes of 25 tablets of 0.02 gm. "Plasmoquine Co." is packed in bottles of 60 tablets (containing 0.005 gm. Plasmoquine and 0.0625 gm. quinine).



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This new synthetic antimalarial remedy is manufactured by the well-known firm, I. G. Farbenindustrie Aktiengesellschaft. "*Bayer-Meister Lucius*," whose local Agents are **The China Export-Import and Bank Co., Asiatic Building**, who will be glad to supply literature and samples to the medical profession on application.

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#### **Eumenol** (*Merck*.)

This emmenagogue is made from the extract of **Tang-Kui** the root of a Chinese umbellifera. In liquid form, the fluid extract has a brownish-green colour and a somewhat bitter, aromatic taste. On account of its taste, this product is also made up as a dried extract in the form of sugar-coated tablets.

It is claimed to be absolutely non-toxic and quite free from any ecboic action. Its administration is most promising in amenorrhoea and dysmenorrhoea, particularly so in the purely nervous forms.

It is manufactured by the well-known firm, E. Merck, whose agents are Messrs. **Bornemman and Co.**, from whom further information may be obtained.



### Acknowledgments.

We have much pleasure in acknowledging the receipt with thanks of the following contemporaries:—

The Birmingham Medical Review.

The St. George's Hospital Gazette, London.

The St. Mary's Hospital Gazette, London.

The London Hospital Gazette, London.

The Prescriber, Edinburgh.

The Bristol Medico-Chirurgical Journal.

The Medical Journal of Australia.

Chinesische Zeitschrift für die Gesamte Medizin, Moukden.

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The Japan Medical World, Tokyo.

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The Australian Journal of Experimental Biology and Medical Science, (University of Adelaide).

Dr. Huang's Medical Journal, Shanghai.

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## Reprint.—

Salivary Urea Index," by J. D. Vanbuskirk, M.D., and M. S. Kim, M.D., Severance Union Medical College, Seoul, Korea.

"Parasites, chiefly Metazoan, observed in 7,00 specimens of faeces from Koreans, with an attempt to interpret the findings," by Ralph G. Mills, (Research Department, Severance Union Medical College, Seoul). Reprinted from *The American Journal of Hygiene*, Vol. VII, No. 3, May, 1927.

## Reprints.—

"On Occupational Cancer with special reference to the Industries of Malaya," by A. N. Kingsbury. Reprinted from the *Malayan Medical Journal*, Vol. 1, No. 4, December, 1926.

"On Canine Anti-Rabies Vaccination in Malaya." by A. N. Kingsbury. Reprinted from the *Malayan Medical Journal*, Vol. II, No. 2, June, 1927.



## News and Comments.

### The Caduceus.

In the Editorial of the Union Magazine, our sister Journal expresses herself in no uncertain terms about the lack of support and interest from a majority of the students. To be said in extenuation of this attitude, it must be remembered that during the 4 or 5 years of his or her hectic existence in the University, the average student has little time to think of anything else but work. It is said that Eastern students take life far too seriously—and ours certainly seem to think the fate of the world and the future of humanity depended on their passing the First Professional!

We would like to see our students take more interest in the various societies, journals and magazines which are after all run for their benefit, but we cannot be too hard on them if they cannot find the time or inclination to be enthusiasts in the various activities of university life.

But what we detest is that species of humanity called the critic—and in its more virulent form the Arm-chair Critic—an individual whose one main function in life seems to be destructive criticism without rhyme or reason, and who misleads others by his cheap oratory. We started the year with soft words pleading for support and suggestions; we end the year with plain English, If “candied” words will not do, we must use candid words.

What this Journal was like before we took it over some two years ago—is now History. In our time we have managed to print 3 issues a year, and next year we hope to go to 4 issues. Our present circulation is world-wide. If any Critic feels in the mood to dissect us or our work, let him remember that.

The Executive Committee has been carefully watching the influence of the Caduceus, and it feels our purposes are better answered if we change the name of the Journal into that of the “Hong Kong University Medical Journal.”

It is not fair to work the few willing horses to death and we appeal for a more sporting spirit that will carry the Journal to a successful destination—a legacy that we can proudly leave behind to those that come after us.

**Our Members.**

**Sir E. Stuart Taylor, O.B.E.**—It is with pleasure that we learn that Dr. Stuart Taylor has attained the M.R.C.P., London. We congratulate him on his obtaining this high qualification. Many of the students would remember him as the external examiner in Pathology.

**Dr. W. B. A. Moore.**—We congratulate Dr. Moore on his attaining the D.T.M.&H., England. He is well-known in Hong Kong, and was for many years a member of the teaching staff at this University. We hope to have him back some time in January.

**Lt. Col. S. Boylan Smith, O.B.E., D.S.O., R.A.M.C.**—We are sorry to learn that one of our Vice-Presidents, Col. Boylan Smith, has left the Colony, being transferred for duty elsewhere. During his two years' stay here, he has acted as External Examiner in Medicine for the M.B., B.S. Examination of this University.

**Dr. C. W. McKenny.**—It is with the deepest regret that we learn of the retirement of Dr. McKenny from Hong Kong. Dr. McKenny's connection with this University dates back to 1912, when he held the post of Lecturer in Clinical Medicine at the Tung Wah Hospital. When he took up a specialised subject he was appointed Lecturer in Radiology and Electrology. During his tenure of office, he has won the admiration of the staff and students of the Medical Faculty and his retirement has caused the University to lose one of its most respected and most efficient teachers.



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**Our Graduates.**

**Dr. Wu Lien Teh, M.A., M.D., DSc., LL.D., etc.**—We are glad to have one of the foremost western-trained Chinese physician, the eminent Dr. Wu Lien Teh, Director of the Manchurian Plague Prevention Bureau, to lecture before the University Medical Society. Dr. Wu who is an honorary graduate of this University is passing through the Colony on his way to Calcutta to attend the conference of the Far Eastern Association of Tropical Medicine. We hope to be able to publish Dr. Wu's address on the Health Problems in our next issue of the Journal.

**Dr. S. A. M. Sepher.**—We have just received information that Dr. Sepher, who graduated in this University in December 1924, and held eighteen months post graduate appointments here, has been elected a Fellow of the Royal Faculty of Physicians and surgeons of Glasgow (F.R.F.P.S.) We congratulate Dr. Sepher on his attaining this high qualification as he is the first of our graduates to obtain this Fellowship.

**Dr. K. C. Yeo.**—We have heard from Dr. Yeo and must congratulate him on his attaining the D.T.M. & H., Eng. Dr. Yeo graduated in May 1925, and held eighteen months post-graduate appointment here. Dr. Yeo's name appeared in the honours list of the London School of Tropical Medicine, and we are glad to learn that he was placed second on the list, being only 1% below the Medallist.

**The F.E.A.T.M. Conference.**

We wish to announce that Dr. W. B. A. Moore will be attending the Conference of the Far Eastern Association of Tropical Medicine at Calcutta, as the representative of this University.

**Annual Dinner.**

In our last issue, we announce that a Dinner will be held about the end of September. Owing to unavoidable circumstances, it was necessary to postpone it, and the Committee has now fixed a more suitable date. We understand that the Annual Dinner will be held at the Hong Kong Hotel Roof Garden on Saturday, 10th December. A dance will also be held. It is hoped that among the distinguished guests will be H.E. Sir Cecil and Lady Clementi, and the Hon. Mr. W. T. and Mrs. Southorn. In view of the limited accommodation, we would advise an early booking. Tickets and invitation cards may be obtainable from the Hon. Secretary of the Medical Society.

**Post Graduate Course in Obstetrics and Gynaecology.**

We are glad to announce that a post graduate course in Obstetrics and Gynaecology will be given during the Christmas Vacation. The course would also consist of a number of demonstrations on practical midwifery (operations on the phantom), and gynaecological technique, according to the cases available in the hospital. The fee for the whole is \$25 and only a limited number of students will be enrolled. Further particulars may be obtained from Professor Tottenham.

**Appointment.**

We congratulate Dr. K. C. Cheng, M.B., B.S., D.T.M. & H., on his appointment as Senior Medical Officer, of the Kwong Wah Hospital.

