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The general practitioner is frequently called upon to prescribe for

FEMALE DISORDERS OF AN INDEFINITE NATURE

in which some one or more of the pelvic organs peculiar to the sex are affected. There may be congestion, or irritation, or subacute or chronic inflammation of the uterus or appendages. The lesion may be comparatively slight but the systemic disturbance considerable. In such cases it is difficult to exactly locate or specifically define the trouble existing in one or more of the

THE ANTISEPTIC.

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Original Articles.

• COLITIS.

BY

J. BERNARD DAWSON, M.B., B.S. F.R.C.S. (ENG.)



ROUND the subject of Colitis has waged a war betwixt physician and surgeon which has led even now to inconclusive results. Although the surgeons have to some extent taken upon themselves the treatment of this condition, still, in the main, the physician remains paramount in its treatment.

Great confusion has arisen because of the diverse and extensive nomenclature that has been invented to describe the varying forms and degrees of colitis. The writer, in a paper published in the *British Medical Journal*, attempted to simplify this matter and avoided, as far as possible, such complex and confusing titles as Muco-membranous Colitis, Colica Nervosa et Mucosa.

It has been clearly shown that the casts which are passed in certain forms of colitis are in no way membranous but consist to a great extent of inspissated mucous; therefore the use of the word "membranous" should be avoided and the phrase "Colitis with Casts," substituted. Again much argument has been aroused by the question as to how far there is a nervous element in some of these cases of colitis.

Physicians have gone so far as to affirm that the condition is entirely a neurosis and that the local phenomena are due to a deranged enervation of the colon.

The writer has always held that the nervous symptoms which are so pronounced in some cases of colitis are the effect and not the cause of

* Specially contributed to *The Antiseptic*.

the colonic lesions. When one remembers what profound psychological changes may accompany a case of uncomplicated hæmorrhoid, it is not surprising that a long continued colitis should produce that state of mind known as neurotic. *Post mortem* evidence is naturally very scanty since colitis is not a fatal complaint, but such as it is, it clearly tends to show that in all cases where the usual symptoms of colitis are present, either with or without casts, there is some definite inflammatory change in the mucosa of the colon.

Ante mortem evidence obtained by use of the Sigmoidoscope has very clearly shown this fact to be true. Thus, Lockhart Mummery, by careful examination of 9 cases of colitis with casts, discovered that in 8 cases definite organic lesions were present. Again Beck, in 500 cases of chronic colitis, found inflammatory lesions in 394 or 78·8 per cent.

For ordinary practical purposes the following simple nomenclature is sufficient and comprehensive:—

1. *Acute Simple Colitis* is a condition similar pathologically to acute pharyngitis and is exemplified by the entero-colitis which occurs in infantile summer diarrhoea.

This usually reacts to treatment or may pass on to acute alternative colitis or subside into chronic simple colitis.

Chronic Simple Colitis may be a sequela to acute simple colitis or may arise without any obvious acute stage. It is similar pathologically to hypertrophic rhinitis and has been called hypertrophic colitis. It is justifiable to use the term "chronic simple colitis" when, on examination with the sigmoidoscope, the mucous membrane of the sigmoid is seen to be thickened, oedematous and discharging copious mucus without ulceration. There may, of course, be some ulcers higher up which will account for the condition; but since it has been shown that in colitis the most marked destruction and damage occurs at the sigmoid, the absence of evidence there is sufficient for clinical purposes.

Acute Ulcerative Colitis is theoretically a sequela to acute simple colitis, but the inflammation may be so intense as to produce ulceration practically from the onset. Dysentery due either to Shiga's bacillus, or to the Amœba, is the commonest form of acute ulcerative colitis, but the condition may occur without either of the above organisms being present.

Chronic Ulcerative Colitis.—The ulceration may be superficial and punctate, consisting of erosions, or it may be extensive, serpiginous and progressive, passing on to pericolicitis, abscess, or to perforation. This form of colitis resembles the various forms of gastritis and gastric ulcers.

The question now arises why the passage of casts is only present in certain cases and those cases the ones that are attended by the most manifest nervous phenomena.

The answer to this question is that the casts are generally present when obstinate constipation is an antecedent and attendant feature. In such cases the usual event is a periodic passage of casts associated with severe pain. In the intervals the patient is comparatively well, save for the constipation. What happens is that the mucus poured out from the inflamed mucous, has time, during this period of stasis, to become inspissated and moulded into its cast like appearance; then in responsive to purgative drugs or to the irritation of the overloaded colon the casts are expelled with considerable distress.

Treatment.

It is not the purpose of this paper to give detailed treatment for each variety of colitis since much depends upon the phenomena observed in each individual case.

The various forms of treatment will be discussed and some mention made of the newer surgical methods.

The Diet.—It is usual to put patients upon what is, either strictly or approximately, a pure milk diet. Whether this is satisfactory is very doubtful. The object of dieting in colitis is to produce faeces which shall be the least irritating to the inflamed mucosa. A milk diet, whilst leaving a small residue, produces faecal masses which are small globular, very fine and undoubtedly irritating to the colon, which has to undergo prolonged and strong contractions to pass along such small masses. Since they do not produce an efficient distension of the bowel, they are apt to remain too long in contact with the mucous membrane.

As a remedy for this VON NOORDEN recommends a liberal diet of food which leaves a bulky residue of cellulose, articles such as brown bread and vegetables being freely given, together with a daily allowance of cream or other highly fatty material, producing motions which being bulky, soft, well lubricated and unirritating, are easily voided from the colon. I have seen a patient who, when upon a milk diet, passed small hard faeces with pain and distress, able under VON NOORDEN'S diet to empty his colon of bulky masses without trouble.

Intestinal Antiseptics.—The value of so-called intestinal antiseptics has always been a matter of argument. I have tried Bismuth, Salol, Beta-Naphthol, Cyllin, Turpentine and Calomel, and of these Calomel

given in fractional doses continuously is the only one which has had apparent effect.

The work of METCHNIKOFF upon the fauna and flora of the great intestine tends to show that it is to bacteriology that we must look for a satisfactory means of combating the harmful inhabitants of the great gut. He has shown that the lactic acid bacillus is antagonistic to the bacilli of the colon and that milk freshly curdled by an active strain of this bacillus acts as an antiseptic to the great intestine.

Preparations of the lactic acid bacillus are made by most of the wholesale chemists, and, in the main, these articles are reliable.

The Use of Enemata and Colonic Douching.—It is not possible to satisfactorily wash out the whole length of the colon by means of injections administered per rectum. Even the cleverest nurse using a long flexible tube, cannot succeed in making the fluid reach the ascending and transverse colons. In cases of colitis this is particularly so, for the inflamed mucosa means greater irritability, and the injection is forcibly returned as soon as the sigmoid becomes distended. Certain cases, where the mischief is confined to the rectum and sigmoid, copious rectal douche may produce improvement and even cure. The great drawback, however, is the fact that the cleansed surface is almost immediately again soiled by the descent of faecal material from above the zone of the douche.

How far medication of the fluid used is an advantage is difficult to say, for any antiseptic strong enough to exert a bactericidal action upon the germs present is also strong enough to damage the mucosa. Certainly good results can be obtained by the use of sterilized water alone.

Alkaline fluids, such as 4 per cent. solution of Sodium Bicarbonate, or diluted Glycothymoline are of great use when there is much mucus.

In ulcerative cases astringent douches are indicated, such as very weak solutions of Silver Nitrate.

Where there is great irritation and tenesmus and severe hæmorrhage accompanied by symptoms of grave constitutional disturbance, one pint injections of warm olive oil administered to a patient in the knee-elbow position, and retained for as long as possible, are of great use.

In hypertrophic conditions 6 or 10 ounce injections of Hydrogen Peroxide, 10 volumes per cent, retained for half an hour, are of use.

The Surgical Intervention in Colitis.—The only procedure which is of undoubted value is the operation of appendicostomy. By this the appendix is brought through the abdominal wall and, after being

secured, is opened by amputation of its apex. Through the lumen is passed a catheter, so that fluids can be passed direct into the caecum and colon.

By this means not only can the whole colon be thoroughly cleansed but it is entirely emptied, thus enabling the damaged mucosa to enjoy a rest both from active movement and from contact with faeces.

It is best to use 6 or 7 pints of the appropriate fluid warmed to 98° F. There is never any trouble with the fistula thus produced. There is no leakage, and the sinus shows a constant tendency to close, so much so that efforts have to be made to keep it patent. When a cure is obtained it is wise to keep the opening capable of dilatation for two or three months in case of relapse. If at the end of this time all is well, the opening can be easily closed by destroying the mucous membrane living and allowing it to cicatrize.

In conclusion, the writer's opinion is that the confusion which has existed about Colitis is due to the fact that it is not sufficiently recognised that the colonic mucosa, like other mucous surfaces, is subject to the usual varieties of inflammatory mischief, but that different observers have seen these pathological conditions in all stages of inflammatory changes, and that thus many varying phenomena have been described and named.

• THE USE OF ALKALIES IN GASTRIC DISORDERS.

BY

G. RAMAN PILLAI, M. B., CH. B. (EDIN.)

Thambu Chetty St. Madras.

Although the physiology of digestion is still somewhat obscure, and no definite rules can be laid down as regards the administration of alkalies in gastric affections, a consideration of the subject in the present state of our knowledge, may be not uninteresting.

Alkalies are given in certain gastric disorders with a view to neutralising the acids that are the products of abnormal activity of the stomach.

In health (unless, of course, some other acid is taken along with the food) hydrochloric acid is the only acid present in the stomach; it is present in the stomach during active gastric digestion only; and its total quantity and strength of acidity vary but very little. As soon as

* Specially contributed to *The Antiseptic*.

proteid food enters the stomach, the HCl. is poured out on it continuously by the secreting glands. This secretion attains its maximum in about half an hour (15-40 minutes)—the first "acid tide."

The whole of this acid combines with the proteids and alkaline bases of the food constituents, leaving no more free acid in the stomach until the second acid tide occurs, which reaches its maximum in about one hour after food. This second acid partly combines with any remaining proteids, and partly remains free—the presence of the free HCl. inhibiting fermentation of starch, and also stimulating pancreatic secretion when the gastric contents pass down the duodenum. In about three hours, peptonization is completed, and the food leaves the stomach soon after.

Under *abnormal conditions*, other acids—lactic, acetic, butyric, etc.—may be formed in the stomach towards the end of digestion. The HCl. may be (1) absent (as in cancer); or (2) secreted irregularly in a fasting stomach—"hypersecretion," either periodic or continuous—or (3) secreted during digestion in too great a concentration—"Hyperchlorhydria."

The circumstances, therefore, under which alkaline interference is indicated (although the relief afforded in many cases is merely symptomatic) are:—

- (a) Hyperchlorhydria, often associated with gastric ulceration;
- (b) Hypersecretion in the fasting stomach (probably a gastric neurosis);
- (c) Acid fermentation;
- (d) Gastric Catarrh.

Let us consider what we may expect to result from the administration of alkalies at different phases of gastric digestion:—

Given in solution, half an hour before a meal, in a resting stomach, the drug is soon absorbed (in about 15 minutes) and there is no chance of its interfering with the digestion of the next meal. A glass or two of hot water with gr. x of Soda Bicarb. and gr. ii of Sodium Chloride in it, taken at this time, removes any catarrhal mucus adhering to the mouths of the gastric glands, leaves the entire secreting surface fresh and free to perform its function when the call is made for it. This action is somewhat analogous to that of soap and water on skin surfaces. It can take the place of lavage.

Given with, or immediately after, a meal containing proteid the alkalie interferes with peptic digestion, because the normally secreted

HCl. is neutralised. Even if too concentrated an acid is being secreted at this stage, it would be well to withhold the alkalie until sufficient time has been allowed for the peptonisation of what proteid there is in the stomach—in other words, until the symptoms of hyperacidity are evident (this indicates the period when all the proteid affinities have been satisfied, and no more acid is required for proteolysis.)

This would mean that alkalies are required about three hours after food (or earlier, if the symptoms indicate their use) in order to neutralise the offending acid. Bismuth Carbonate, Magnesium Carbonate, or prepared chalk may be given with some Soda Bicarb. in these cases, the quantity varying with the effects produced.

The insoluble carbonates prevent a too rapid neutralisation, act only on the free acid, and remain practically inert after the free acid has been neutralised. In hyperchlorhydria complicating gastric ulceration, when the case does not necessitate rectal alimentation our aim should be to make the food (which may be given peptonised and rendered alkaline by soda) stay in the stomach for as short a time as possible, and to keep the secreted HCl. from irritating the diseased mucosa. We do not here want the stomach to take any part in digestion. A suitable formula for this is:—

Bismuth Carb., gr. xx.

Magnes. Carb., gr. x.

Soda Bicarb., gr. v.

Aqua ad ℥i.

Hæustus. $\frac{1}{2}$ hour before meals, thrice daily.

By giving this mixture before food, the soda neutralises any acid that is present at the time of taking the mixture; and the insoluble carbonates, spread out over the mucous surface, and lie in ambush, as it were, to attack the HCl. poured out on the entrance of food in the stomach—in this manner to protect the ulcer until the irritating contents are expelled from the stomach. Large doses of the carbonates (e.g., 200 gr. Bismuth Carb.) have been given with great benefit, in such cases.

If hypersecretion (*i. e.*, in a fasting stomach) is to be dealt with, large doses of the carbonates are exhibited during the attacks. As much as 6½ dramchs of Soda Bicarb. in 24 hours was given in a certain case with brilliant result.

When fermentation acids have to be counteracted by means of alkalies they are best given about four hours after meals. An interesting question arises in this connection: If an acid state of the food when

it reaches the duodenum is an absolute necessity in order to stimulate pancreatic secretion (as some physiologists hold), would not our alkalinization of the food, just on the point of leaving the stomach, indirectly suppress pancreatic secretion, and seriously interfere with the intestinal digestion?

So far, we have been confining our attention on proteid foods mainly. In relation to a meal composed mostly of proteids the action of alkalies will be expected to be as we have stated above. But, what are we to expect when the meals consist almost entirely of carbohydrates? Under such conditions, we do not require the acid of the HCl. for the process of digestion to be carried on; not only so, the presence of this acid in the stomach in any appreciable quantity during the first few minutes of digestion, would be a positive hindrance to amylolysis (which can only be carried on by the ptyalin, in a neutral, or faintly alkaline, medium). Are we here to step in with a small dose of alkali to be given along with, or just before, food, with the intention of keeping the gastric contents slightly alkaline until such time—(amylolysis is completed in a favourable medium, in about 15 minutes)—as we think all or most of the starch has been converted? Rationally, we would give an affirmative answer. And, were we able to determine the exact reaction of the stomach contents during several phases of digestion (even supposing there are patients who will submit to a tedious course of test-meals followed by lavage, from an experimenting doctor), we may probably succeed in our symptomatic administration of alkali when the acid is discovered to be in excess.

In conclusion, therefore, in prescribing alkalies for stomach disorders, we should consider several points:—

(a) *Why* they are given—

1. To clear the secreting surface of any catarrhal mucus.
2. To neutralise excess of acid, HCl. or fermentation acids as the case may be.

(b) *When* they should be given in order to attain the above objects, without interfering with the natural process of digestion.

(c) In what *form* and in what doses the best results can be obtained.

* INFANTILE DIARRHŒA, ITS CAUSES AND TREATMENT.

BY

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Introduction:—Diarrhœa is one of the commonest signs of intestinal disturbance in infancy and childhood. Diarrhœa, *per se*, is not a disease. It has, however, assumed such a great importance by carrying away a large number of infants, that it has not only been dignified with the title of a disease—nay has been recognised as one of the foremost fatal affections of children. This disease has been the scourge of infancy the world over and, to quote statistics in one particular country, out of 22,000 deaths that occurred in Great Britain in one year from diarrhœa, 17,000 occurred in children under *one year old*. In Madras, however, the system of registration of births and deaths is very unsatisfactory, as it is carried on by unqualified men in such a hap-hazard-manner, that no reliance whatever can be placed upon the records for the purposes of a scientific investigation of this nature. Efforts, I understand, are being made to rectify this defect. At any rate, it would

be interesting to note that according to the Vital Statistics of the Corporation of Madras, on an average for 3 years 29.5 per cent. of infants making a total of 17,190 do not live to see their first birthday. Knowing that the child is the father of the man, it behoves every prac-

Year.	No. of Children born.	Died under one year.
06-07	18217	5747
07-08	20452	5652
08-09	19437	5791
		17,190

itioner in this country to do his level best to prevent the occurrence of the disease as far as possible and also to combat the disease successfully when it sets in.

Etiology:—It is a disease chiefly due to errors in diet. It is met with more frequently in *bottle-fed* infants than those that are *breast-fed*. In the former case, it is usually traceable to errors in the quality of *food*, while in the latter to the *feeding*. It is sometimes possible that maternal milk does not agree with the infant but fortunately such instances are rare.

For purposes of classification the causes of infantile diarrhœa may be stated as under:—

I. *Pre-disposing causes*—

- (a) Extrinsic.
- (b) Intrinsic.

* A paper specially contributed to *The Antiseptic*.

II. *Exciting causes.*I. (a) *Extrinsic causes:—*

1. *Bad hygienic conditions:—*Diarrhoea is most prevalent where infants are brought up in damp, over-crowded and ill-ventilated houses which have been fouled by sewer-gases, emanations from cesspools, dung-heaps, etc. The mortality of infants of the poorest classes of people is therefore very great.

2. Living in large cities or towns pre-disposes a child to recurrent attacks of diarrhoea, so much so that in practice it is found to be of great advantage to remove a child suffering from diarrhoea, to a village or country-side.

3. Another important reason is, that the children are particularly susceptible to chill. It lowers the resisting powers of the tissues generally and of the alimentary canal especially.

4. *Weather and season of the year:—*One of the gravest and most fatal forms of diarrhoea is the so-called Acute Summer Diarrhoea of children. The disease is largely prevalent during the hot months of the year from May to October. These are not the regular summer months, and to be accurate it must therefore be stated that it occurs during the late summer and early winter (rainy) months. This is accounted for by the fact, that the curve of Epidemic diarrhoea does not follow the temperature of the air but that of the soil. The higher the temperature and the longer the summer heat lasts, the greater is the havoc done by the disease. And again the heat of summer favours the growth of certain organisms in the milk with great rapidity.

(b) *Intrinsic causes:—*

1. *The age of the infant:—*The younger the infant the greater are the chances. The new born babe which depended upon its mother for its nourishment is, in a few hours after birth, called upon to perform the elaborate task of digesting and assimilating its food independently with its delicate digestive mechanism. A recollection of the knowledge of Anatomy and Physiology will remind one how the child is placed at a disadvantage with its partially developed salivary glands and pancreas and how its very life is imperilled, even when there are slight digestive disturbances.

At the age of 6 or 7 months when they crawl about they have a tendency to stomach anything they chance to pick up which sets up gastro-intestinal irritation producing a very severe form of diarrhoea.

2. *The food of the infant and its digestive apparatus:—*Children are mainly fed upon milk which is anything but a germ-free fluid; the

sterilising power of the child's stomach is very little, as it secretes very little (HCl) and the organisms which are swallowed with the food have a good chance of overcoming its weak powers and settling themselves comfortably in the intestines to set up irritation there.

3. *Constitutional causes:—*An infant born prematurely has less vitality to resist evil influences. Children suffering from Rickets are peculiarly susceptible to Catarrhal affections of this nature.

II. *Exciting causes:—*

1. *The food:—*In artificially fed babies diarrhoea is very common arising from the use of impure or stale cow's milk, from the too early and excessive use of starchy foods or from the employment of solid and unsuitable food as rice, fruits, etc. Out of 1,943 fatal cases of Holt's 1,885 occurred in artificially fed children.

2. *Bacteria:—*Many of the severest forms of diarrhoea, especially the acute summer diarrhoea, are most certainly due to bacterial infection. Individual observers have concluded from their own researches that this or that micro-organism is the chief factor. It is, however, worthy of note that DUVALÉ and BASSETT working in the Thomas Wilson Sanatorium discovered in the dejecta of children suffering from Summer Diarrhoea a bacillus identical with the organism shown by Shiga to be the cause of Epidemic dysentery in Japan. In 1903 Rockefeller's institute showed that this organism was present in a large number of cases which fact has been confirmed by FLEXNOR and HOLT.

3. *The relation of flies:—*Many observers as Dr. NASH, Medical Officer of Health for Southend, Dr. BRIDGE of Devonport and Dr. EDMUND SMITH, Medical Officer of Health for New York have suspected and referred to the mischievous part played by the house-fly in the production of infantile diarrhoea. I for one believe that the carrier of infection to the food of the infant is our long unsuspected enemy the common house-fly. He is suspected to be responsible for more affections than one, Typhoid, etc., and, if I am permitted to digress a little, I suspect also for the intestinal parasites in children, viz., *Ascaris Lumbricoides* and *Oxyuris Vermicularis*—which question I intend working out at some future date.

I would, therefore, suggest that a crusade of extermination be instituted successfully against the house-fly if infant mortality by Summer Diarrhoea has to be kept at a low minimum; the procedure can do no harm to anybody while on the other hand a good deal of benefit may arise.

4. *Local irritation of the bowels by hard impacted faecal matter* may occasionally produce constipation alternating with diarrhoea. Some

of the intestinal parasites also are reputed to be sometimes factors in its causation.

5. *Local diseases*:—Ulceration of the bowels and tuberculosis of the intestines—*tabes mesenterica*—are always associated with looseness of bowels and ought to be diagnosed from ordinary diarrhoeas of infants.

6. *Drugs*:—Certain drugs, especially poisons, produce symptoms simulating Summer Diarrhoea. Children who are breast-fed may be affected through milk by drugs taken by the mother, as castor oil, *senna*, &c.

7. It may also be due to one of the Specific infectious diseases as Enteric, Measles, etc.

8. A peculiar form of Diarrhoea of nervous origin is known as the Lienteric Diarrhoea.

Though not specified in the title for the essay it would be of advantage to speak in general of the symptoms of infantile diarrhoea. I do not propose to deal with them under the varieties described in text-books but shall confine myself to the most important ones which require special methods of treatment and therefore demand special mention.

The most common symptoms that perplex one in practice and at the same time point definitely to the nature and seat of mischief is the character of the stools.

First of all there is the green motions commonly met with. What is the cause of the greenness? Some suppose that the greenness is due to the development of a micro-organism which produces the pigment. Though it cannot be denied, in many cases it is due to the bile pigment being hurried through the intestines without undergoing the usual changes.

The 2nd variety is offensive putrid stools. What does this indicate? It is due to the reason that in the upper part of the intestines the peristalsis is too rapid to allow the food to be properly digested and assimilated and that a mass of imperfectly digested food is hurried on and gets lodged in the colon where it undergoes putrefaction giving rise to the putrid stools.

The 3rd variety is the acrid, pungent and irritating stools, as evidenced by the smell and by the production of an erythematous eruption over the buttock due to the production of fatty acids as butyric acid, etc. In these cases an alkaline treatment is indicated as Bicarbonate of Soda, or a few grains of Citrate of Soda in the case of bottle-fed infants may be added to each ounce of milk given to the baby.

Another important variety which must be distinguished is the frothy, cheesy stools consisting of white particles in small round lumps about the

size of a coriander seed scattered all through the faecal matter. These particles consist chiefly of casein the remains of undigested milk. If diarrhoea is associated with this condition, here is a most certain indication that the child is getting more food than he needs or rather than he can digest. In these cases if one takes the trouble to enquire into the system of feeding, he will invariably find that there has been no regularity in the hours of feeding and the only indication has been the cry of the infant and at each cry more food was given the child. In these cases the mother should be impressed the necessity of feeding the infant at regular intervals and that the cry of an infant does not necessarily mean hunger but also thirst, wet clothes and pain etc.

The 5th variety I would like to mention is the mucous slimy stools clearly pointing to the involvement of the large intestines due to the fact that the large intestines are mainly lined by mucin forming cells while in the small intestines they are few. In these cases, I prefer Bismuth to any other, in large doses.

I have yet one more variety to deal with and I have done. It is the thin copious, watery and serous stools having no faecal matter. This is usually accompanied by vomiting and collapse and indicates a very serious affection *viz.*, the epidemic form. This form runs a rapid course in many cases and the infant may be moribund in a few hours. The symptoms of collapse in an infant are the depressed fontanelle having the same significance as a very feeble pulse in an adult the fall of temperature the increasing restlessness and the shrunken and wrinkled skin. "The skin instead of falling when pinched is apt to remain in folds and is one of the signs to be looked for in infantile diarrhoea." Many observers conclude that it is due to the involvement of the kidneys and in these cases there is partial suppression of urine while examination of urine shows presence of albumen. In these cases special lines of treatment to stimulate the kidneys as well should be adopted.

Coma accompanied by too high or a fall of surface temperature is a sign of fatal termination and unless present, the case is not hopeless however desperate the condition of the infant may appear to be.

The pathological changes found in fatal cases are few. The whole intestinal mucosa may be swollen and inflamed and lymph follicles are found to be enlarged oedematous.

Treatment:—

(a) Prophylactic.

(b) Hygienic.

(c) Curative.

Prophylactic:—Preventive measures rank first in importance.

A rickety child may be advantageously sent away out of town to country side or village during summer. The infant should be clothed so as to protect it from chills. Clothing should be light and loose and a flannel binder ought to be applied around the abdomen. In the case of breast-fed infants weaning should not be undertaken during summer, while in the case of artificially fed children, extra care and cleanliness should be bestowed upon the process.

The importance of carrying out artificial feeding in a thoroughly clean and scientific manner cannot be over-rated. "It is essential that before treating a case arising from errors in diet, the medical adviser should have clearly in his mind what ought to be the normal diet of an infant, the method of preparation, the frequency of feeding, the amount to be given at any given age and kindred questions that may come up to him for reference." And again one need not be long in practice to realise that under modern conditions the number of women who can or do nurse their own children is getting smaller in this country. It is mostly due to the foolish system of early marriage in this country and girls who are a little more than children become mothers before they are fully developed. Another reason is that most girls that attend school improve their intellect at the expense of their health, as the social conditions existing in this country do not permit them to take open air exercises &c. and the consequence is that they become bad nursing mothers. It also seems to be a part of the price we have to pay for the so-called civilisation. I therefore propose to give in this paper in detail the best method of artificial feeding in practice based on the plan recommended by DR. SOUTHERLAND.

In the absence of mother's milk a wet nurse is the best substitute; but in practice one does not find chances to do so as there are many practical and social obstacles in this country so that cow's milk is the substitute in practice. If one cannot bring up his own cow for this purpose which is quite easy and not expensive in this country the milk should be obtained from a clean dairy farm and should be delivered as soon as possible without being altered in any way, in air-tight bottles which have been sterilized previously. Unboiled milk is probably the more nutritious form of diet but if there is any doubt as to the purity of the milk it may be boiled on delivery. This probably serves the purpose but has the disadvantage of so altering the taste of milk as to render it unpalatable for infants. A better plan is to put the milk containing pan into another containing water and to bring the water to the boil (an enamel apparatus for this purpose may be had from Messrs. Spencer & Co for Rs. 1/4). The boiling should be continued for five minutes at the end of which time the milk should be removed and cooled rapidly and then

transferred to a clean glass bottle, fitted with a lid or covered with a fine muslin or plugged with cotton wool and placed in a cool place.

Before being given to the infant it should be diluted in order to bring the proportion of solids as nearly as possible to that existing in breast milk. For the first fortnight the dilution may be of the strength of milk to diluent as 1:3 then up to the age of three months 1:2; from the age of three to six months may be 1:1 and from six to nine months 2:1 and after nine months, twelve months pure milk may be given from 1½ to 2 pints daily. Barley water is a good diluent if properly prepared as follows:—A table spoonful of pearl barley is washed and put in a saucepan with one pint of cold water. This is brought to the boil and then allowed to simmer beside the fire for half an hour. The water is then strained off and used as required. Some infants seem to agree better with barley water and others with plain boiled water or lime water.

Sugar has to be added to this diluted milk in order to bring it up to the standard. Sugar of milk is best but too expensive; Extract of Malt has a marked sweetening power and renders milk palatable and will convert any starch present and is believed to render the curd in the stomach less dense and indigestible. It has many advantages and is suitable for common use. Cane sugar may also be used although not so digestible. It has the advantage of being the cheapest. The amount of sweetening matter to be added varies with the infant, and the degree of dilution, but for the first month the addition of half an ounce of sugar of milk or Malt Extract or three drams of cane sugar to each 15 ounces of milk prepared for use will be sufficient.

The dilution of milk renders the addition of some fatty material necessary. It is often advisable, however, to begin bottle feeding without the addition of any extra cream. If we use 7 ounces of milk diluted with twice its bulk of water we have to add one ounce of cream to the mixture to bring it up to the standard. Among the poorer classes fresh butter or cod liver oil may be substituted being cheaper.

The number of feeds in the 24 hours both in the case of bottle-fed and breast-fed infants may be arranged according to the age of infant and the times once fixed must be closely adhered to, the principle being that the interval between meals should be long enough to allow of complete digestion, and of emptying the stomach, and of a period of rest for the stomach. As a rule, during the first month feeding every two hours during a day of 12 hours (*i.e.*,) from 7 A.M. till 7 P.M. and only two feeds one at 11 P.M. and the other at 3 A.M. during night of 12 hours should be

given. I cannot here too strongly condemn the habit of mothers making their suckling infants to sleep with them and nurse them right through the night whenever the baby cries. Medical men ought to invariably enquire in this direction and remedy the evil habit before treating a case. If the infant be asleep when feeding time comes, he should be awakened and fed. If he cries before time, he is not to be fed but an examination as to other cases of discomfort should be made. In hot weather a common cause of crying is thirst and not hunger.

Though the milk prepared in the above manner is fit to be used, I prefer the addition of Citrate of Soda as suggested by Wright, one or two grains of Citrate of Soda to each ounce of the mixture prepared for use. The curds formed in the stomach are believed to be rendered more digestible and the vital properties of milk are not injured.

TIME TABLE FOR INFANT FEEDING.

Age.	Interval by day.	Night feeds.	Quantity at each feed.
During 1st month.	2 hours.	2	1 to 1½ ounces.
" 2nd "	2-2½ "	2	2 to 3 "
" 3rd "	" "	1	3 to 4 "
" 4th "	2½-3 "	1	4 to 5 "
" 5th "	" "	1	4 to 5 "
" 6th "	3 "	Nil.	5 to 6 "
" 7-9th "	3 "	Nil.	6 to 7 "
" 9-12th "	3½-4 "	Nil.	7 to 8 "

The quantity here given is not absolute; to some extent it must be left to the baby's appetite; the best plan is to tell the mother to give the child as much as he will have at each feed.

The last point in artificial feeding is the kind of bottle to be used. The best bottle is one that is boat-shaped with an India-rubber teat but no long rubber tube. Allenbery's feeding bottle sold for Re. 1. is a good one. The bottle should be scalded after use and cleaned with a bottle brush which should be boiled before using. After each feed the nipple should be turned inside out and washed and kept with the bottle in a basin containing Boric lotion 5 grains to an ounce, in the interval. As an additional precautionary measure, during summer, printed papers containing instructions as given to all the mothers attending the Paddington Green Childrens' Hospital may be distributed translated in all the vernaculars, the most important of them modified according to the needs of this country are:—

"In hot wheather milk quickly turns sour or becomes tainted by dust,

dirt and flies and may easily bring on diarrhoea unless the following precautions are taken:—

1. Buy the milk twice a day and get the best cow's milk.
2. Boil it once for one or two minutes. Do not boil it till cream settles on top, as you are accustomed to do.
3. Then place it in a covered vessel in a basin of water to keep it cool. The milk must be covered to prevent dust and flies from reaching it.
4. Always taste the milk in a spoon before putting it in bottle, to see that it has not turned sour. Do not put the teat in your mouth.
5. Do not keep any milk left in the bottle for the infant's next meal. Use it for yourself or the rest of the family.
6. The bottle should be boat-shaped with an India-rubber teat with no long tubes.
7. The bottle should be scalded out after use and cleaned with a brush each time.
8. After each feed the nipple should be turned inside out and washed and kept with the bottle in cold water.
9. In any case of sudden diarrhoea or vomiting stop the milk at once and give only plain water or barley water and take the baby to a qualified doctor without delay and not to a quack or a Vythian. Do not think that diarrhoea will pass off, as the baby may be so ill in 24 hours that no treatment will be of any use.
10. Do not be afraid that the baby will starve if only plain water or barley water is given for a day or two. There is no danger in this.
11. Do not think when a baby cries or is sick that it wants more food.
12. Do not give rice before the child cuts the four incisors.
13. Do not give patent foods to infants without a doctor's advice.
14. Do not keep any "dummy" soothers in infant's mouth.
15. Do not keep the child naked. It is important to keep it clothed to protect it from chills.

Hygienic:—The child suffering from the disease should be kept in a well-ventilated room, warm in bed, isolated from other children. All clothes soiled by the excreta of the child should be thoroughly sterilised and particular care should be bestowed on the disinfection of stools.

Curative:—No one line of treatment can be laid down; each case must be studied and a searching investigation must be made as to cause and nature of the disease. If due to over-feeding in a breast-fed infant

the number of feeding times or the amount given at each meal should be diminished. In the case of bottle-fed babies every effort should be made to ascertain the cause; if due to rickets, it must be treated by appropriate remedies. In severe cases marked by vomiting and collapse special lines of treatment should be adopted, the watch-words being Starvation, Elimination and Evacuation.

Starvation:—We must starve the child because we do not wish to put in more pabulum for the micro-organisms to grow. Milk in any form should be stopped and efforts must be made to clear the gastro-intestinal tract. If the child does not improve, starvation may be carried on for 36 or even 48 hours remembering that children bear starvation very well only if they are kept warm and given water to drink. At the end of 48 hours, or if sufficient time has been allowed for the thorough evacuation of the gastro-intestinal tract, albumen water may be given; if the number of stools has diminished and the motions are not of a mucous character, a little nourishment in the shape of whey, and lastly the casein of milk which must be given gradually increased in quality and quantity as the condition improves. The chief points about the dietetic treatment are:—

1. To give no food until the stomach can retain and digest it.
2. To begin with very weak foods and very small meals.
3. "To let the patient have as much water as he can retain."

Evacuation of the Gastro-intestinal tract.

Stomach and small intestines: When vomiting is present, washing out of the stomach is imperatively indicated and should be done at once. It is an exceedingly simple procedure in children and there should be no hesitation in employing it either with plain water or weak Condy's Fluid. For this purpose a small-sized red rubber œsophageal tube connected by means of a piece of glass tubing to another piece of soft rubber tube which is attached to a funnel or to the barrel part of a glass syringe from which the piston has been removed as recommended by Dr. Hutchinson is a simple and useful apparatus.

Before finally removing the tube after a thorough wash, half an ounce of castor oil may be introduced into the stomach with the object of evacuating the small intestines where the micro-organisms grow.

Large intestines: The washing out of the colon should be done if the diarrhoea is excessive and the colon is involved. It is better, if treatment is begun at both ends. This may be effected by means of a soft rubber catheter, No. 14, English, connected to a receiver which must be held about 2½ to 3 feet from the patient's body. The child must lie

on its back with the legs well drawn up and the hip raised. The well-oiled tip of the catheter is passed into the rectum and the water allowed to flow slowly in when two inches of the catheter have been introduced, as this facilitates the further introduction higher up. Irrigation must be carried on till the washings come away clear.

Elimination of poisons or toxins absorbed into the system may be effected by subcutaneous injection of saline about 8 or 10 ozs, at one spot into the loose tissues of the axilla or the abdominal wall.

The restorative effects of saline injections in collapse are marvellous. The benefit thus obtained may be kept up by small doses of brandy and strychnine.

For restlessness and the inelastic state of the skin I have described, it is advantageous to put the child on a hot pack, or a hot bath with or without mustard.

Medicinal Treatment.

Acids, alkalies, astringents and antiseptics have all been vaunted as specifics, and have given disappointing results. Intestinal antiseptics, as Salol, Soda Salicylas, Resorcin, etc., have been recommended and useful in the hands of some, while some authorities disclaim the efficacy of these drugs. There are four drugs which are trustworthy in the treatment of diarrhoea in children, *viz.*, Castor Oil, Calomel, Bismuth and Opium.

Castor Oil should always be given 3 or 4 drams at the onset of the disease giving place to Calomel, if not retained, with the object of evacuating the intestinal tract; subsequent action of bowels should be kept up by Castor Oil in the form of *misturæol*: Ricini B.P. 3i every four hours for 4 or 5 days and afterwards less frequently.

Calomel should be given in fractional doses 1/6 grain combined with a grain of Bicarb: of Soda every hour until one grain has been taken and afterwards less frequently every two or three hours. This is useful especially if vomiting is present.

Bismuth in the form of Sub: nitrate gives good results when given in not less than 10 grain doses every 2 hours so that black stools are produced. To be effectual, Sulphide of Bismuth must be formed. The large doses of Bismuth are continued until the child can take milk and then in 5 grain doses until full milk diet is taken or constipation results.

Opium plays an important part in the treatment of diarrhoea but the only two preparations that can be given to infants under one year are *Tinctura Camphoræ Co.* and *Pulv: Cretæ Arunaticus* with *Opio*. Extreme

care should be used when the drug is given as children bear opium very badly. It is indicated, if the tongue is clean and the motions are offensive. It quiets down the peristalsis and so prevents putrefaction and diarrhoea. It may also be given if the stools are very frequent and accompanied by tenesmus.

It should on no account be given at the outset of the disease nor in collapse. A furred tongue is a contra-indication for its use.

Two practical points with regard to the use of opium are :—

- i. It should be given separately and not along with other drugs, Tinct Camphor Co. being the better of the two preparations.
- ii. A child should not be waked up to give a dose of opium, for fear of giving an extra dose if he be already in a drowsy state.

Dr. Hutchinson speaks very highly of Argenti Nitras in the treatment of diarrhoea and says he keeps it up his sleeves as his last card in treatment of infant diarrhoea. He recommends Argenti Nitras $\frac{1}{8}$ gr. Acid Nitric Dil m. i. Glycerine m. 5 and distilled water 2 drams. It may be given 3 or 4 times in the day when the motions are watery and offensive in the later phases of the illness.

To state briefly, the treatment in mild cases need not be carried out in all the details I have just described; after withholding the milk for a time extending from 8 to 24 hours according to the severity of the disease and substituting Barley water, Albumen water or plain water, the child should be given a dose of Castor Oil according to its age. In my practice I have invariably found mothers reluctant to give a dose of Castor Oil under the impression that the child will die by extra-purgation; should there be fever in addition, the position of the doctor is rendered much worse as there is a popular belief that it is dangerous to give Castor Oil in fevers. Should you desire to respect their wishes and also to save your reputation, I would advise the Calomel treatment in fractional doses in preference to other forms of purgation *viz.*, Salins or Gregory's powder, the latter being too inconvenient and bulky, the former irritating. The next step after the bowels have been evacuated is to put the child in Mist: Ol: Ricini (3ii. 3i) in tea-spoonful doses for a day or two to keep up the action of bowels till the motions are less offensive and turn yellowish.

Now is the time to put the child on Bismuth either in the form of Sub Nitras or Salicylas, remembering the rule to give it in large doses. Should the motions be still watery and serve no purpose except to weaken the child, I recommend my plan of putting the child on Mist: Cretæ

in combination with Bismuth or alone which by its mechanical action serves to harden the fæcal matter.

Before concluding I wish to say a word or two about the so many artificial foods that one finds in the market and what ought to be the attitude of the profession towards it. They may be classified under three groups; No. I group consisting of Allenbury's Nos. 1 & 2 and Horlick's malted milk intended to be a complete substitute for milk.

No. II. Mellins Food—a completely malted food and all Carbohydrates being in a soluble form.

Benger's food-compound of wheat flour and pancreatic extract. These foods are intended to be prepared with milk, the artificial part having been predigested.

No. III. Containing unaltered starch. These are sometimes used by some, when natural food is temporarily suspended. For my own part I never use it either in the treatment of infantile diarrhoea or in artificial feeding of infants nor do I recommend it.

In conclusion, if there is one point more than another that I wish to bring to special notice, is the fact that **the better and the more intelligent way** the children are cared for and brought up, the less is the mortality of infants as evidenced by the death rate of infants of various classes in the classical Prussian town of Erfut shown by Dr. Von Med: Kurt Jester; there 30.5% of infants born to parents of working classes die during the 1st year, 17.3% among middle classes and only 8% of those in better classes of society.

The second point I wish to lay stress upon is the point played by the house fly in the production of infantile diarrhoea by infection. Since writing the above the following has appeared in the home telegrams of the *Madras Mail* dated Friday the 29th October 1909. "The Local Government Board has issued a report by Prof. Nuthall F. R. S. to the effect that house flies are carriers of Cholera, Typhoid, Infantile Diarrhoea and Dysentery and should receive the serious attention of sanitary authorities."

Our Contemporaries.

MEDICINE.

Orchitis due to Mumps without Salivary Gland Swelling.

The importance of remembering that orchitis may be due to mumps is considerable, particularly in young men in whom otherwise the gonococcus may sometimes be put down too readily as the cause of the

mischievous. Mumps is a general, specific, infectious disease comparable to the exanthemata, and its commonest local manifestation is the painful swelling of various glands. So constantly are the salivary glands, particularly the parotid glands, inflamed and enlarged that one is a little apt to forget that mumps may occur without any salivary gland affection at all, and that painful swelling of the testes may be its only manifestation in young adolescent males.

The chronological relation between the parotid and the testicular manifestations of the disease is variable. Parotitis usually precedes orchitis by one or more days; exceptionally parotid inflammation follows orchitis instead of preceding it; and there are rarer cases still in which tumefaction of the salivary glands is entirely absent, and orchitis may then be the sole manifestation of the disease.

The following is an instance in point. An acute orchitis occurred in a boy of 15; the cause of the orchitis was not obvious, but the nature of the case was cleared up by the development in each of the patient's two sisters, 15 days and 23 days later respectively, of the typical parotid inflammation of mumps. The boy in question was seized suddenly on April 20 with a violent headache and repeated vomiting. When seen by his doctor shortly afterwards, so little could be found to account for his symptoms that no better diagnosis than gastric fever could be suggested. From April 20 to April 23 his condition remained about the same, except that a purgative had been followed by a return of appetite and a diminution of the fever. On April 24, four days after the onset of the illness, the lad on rising in the morning felt that his right testicle was slightly painful. The next day—April 25—it had become very painful and it had swollen, and the skin over it was red and œdematous, so that the patient was obliged to stay in bed.

He was very carefully examined by a surgeon who, finding that the epididymis was even more affected than the testes, and that nowhere, either in the urethra or elsewhere, was there any obvious cause for this trouble, debated whether it might not be an example of acute tuberculous epididymo-orchitis. At this time the temperature had risen to 104° F., which was the highest it had yet attained.

On April 27 a more careful inquiry into the history elicited the fact that on April 10, which was the last day the boy had been at school before the break-up for the holidays, and 10 days before the onset of the illness, three schoolmates had been laid up with mumps. This seemed to throw considerable light upon the case. Under treatment by means of rest and fomentations the orchitis rapidly decreased and it was

perfectly cured by May 2. If there had been the least doubt as to the orchitis in this case being due to mumps, this doubt was entirely removed on May 5, that is to say, 15 days after the boy had been ill, when his elder sister, aged 16, developed great swelling of the right parotid gland which was very painful, the swelling next day having also extended to the left. Her condition was undoubtedly that of mumps, which she in all probability caught from her brother. A younger sister aged 11, also developed the typical symptoms of mumps on May 13.—*The Hospital.*

Kala Azar.

The treatment of Kala Azar has up to the present been a very hopeless one, but the apparent cure of a case after treatment by atoxyl raised everyone's hopes that perhaps an agent with curative effects for this disease had been found. Whether this be so or not remains to be seen, but a report on "Two Cases of Kala Azar Treated by the Arylarsonates," by Major HARRISON and Captain CUMMING, in the February number of the *Journal of the Royal Army Medical Corps*, tends to show that at any rate in some cases these drugs appear to be useless. Two soldiers from India were very thoroughly treated by the authors just mentioned, but the downward progress of the disease was not retarded in any way, death eventually taking place in much the same manner as usual in these cases. In the second case, however, an almost complete absence of parasites was found at the autopsy, and this may have been a result of the drug. It is just possible that if the arylarsonate treatment had been begun earlier better results might have been obtained from it, but until this has been done it is premature to speculate. Senega was tried when the patients were almost in *extremis*, the use of this drug having been suggested to the authors by Sir WILLIAM LEISHMAN, who stated that Captain ENSOR had had some promising results from it in the treatment of this disease.—*Ibid.*

Prandial Diarrhoea.

DR. LINOSSIER, of Vichy, has recently called attention to a peculiar variety of diarrhoea which he calls "prandial," because it is almost invariably observed at, or soon after, meals.

This diarrhoea is ushered in without any premonitory symptom on the right of the epigastric hollow, by sudden pain, which may be quite severe. It radiates in the direction of the umbilicus or thorax and is associated with a feeling of extreme distress, with pallor, cold sweats and feeling of faintness. The pain, as a rule, only lasts a few minutes and

is followed by severe colic and an imperious call to evacuate the bowels, the motion being liquid and consisting largely of bile. Thereupon the trouble is at an end and the patient is able to resume his meal.

This prandial diarrhœa may only recur at long intervals, but in some instances it recurs after every meal, to the very great discomfort of the patient. Diarrhœa may be the only symptom, pain being absent, while in others there is pain and no diarrhœa.

The affection is met with exclusively in "livery" subjects, whose nervous system is highly strung and whose gall-bladder is abnormally sensitive.

The author explains its occurrence in the following way: Under ordinary circumstances the bile begins to pour into the duodenum as soon as food enters the stomach and continues throughout the process of digestion. In bilious subjects, under the influence of the gastro-intestinal reflex, the evacuation of bile takes place suddenly, and as these patients are almost always choleemics, the sudden discharge of a large quantity of bile into the intestine sets up violent peristalsis and determines an irresistible action of the bowels. The pain, however, may be due to violent contraction of the gall-bladder or possibly to the passage of a gall-stone.

Prandial diarrhœa does not appear to threaten life, but it constitutes a most troublesome infirmity. It is fairly common in the form of more or less irregular attacks, but is rare as a daily occurrence. It is more frequent at the midday than at the evening meal.

By way of treatment the author recommends the administration of opium and belladonna in order to lessen the sensitiveness of the gastro-intestinal reflex, to be given a quarter of an hour before the meal, with, on the other hand, a lacto-vegetarian diet, Vichy water, moderate exercise and a quiet life, avoiding every source of fatigue.

These patients will usually be found to be suffering from more or less pronounced digestive troubles to which is due the excitability of the gastro-intestinal reflex. A lacto-vegetarian diet often suffices to attenuate the symptoms, but it is not to be relied upon. Digestion is laboured and there is alimentary stasis, which allows of putrefactive changes in the intestinal contents, with the formation of toxins and irritation of the whole tract. Such patients should be given two or three compressed Lactobacilline tablets with meals, the diet meanwhile being mainly lacto-vegetarian. The effect of this treatment is to prevent putrefactive and other abnormal fermentations, and within a few days the nervous hyper-excitability subsides and the symptoms gradually mend. The treatment,

however, requires to be maintained for some weeks, the dietary being gradually enlarged until an ordinary mixed diet is reached.—*The Journal of Practical Dietetics and Bacterio Therapeutics.*

Typhoid Fever, Rupture of Spleen in.

Enlargement of the spleen to some degree is constantly associated with typhoid fever, and splenic rupture occurs more frequently than is clinically recognized. Many cases of lineal rupture have gone to death undiagnosed. Many such cases have been diagnosed perforation, and, because of medical prejudice, have been denied surgical help. It occurs most frequently in the beginning of the third week, and then during the actual stage of convalescence. This latter is probably explained by muscular effort. Any reference to pain on the part of the patient, under the left costal arch, should put the attendant on his guard. The normal spleen cannot be palpated satisfactorily, and does not have to assume great dimensions for spontaneous rupture. The enlarged typhoid spleen should never be handled, but should be touched daily. The marks upon the skin, with the date at the end of the line, would indicate the increase in size.

In all cases of typhoid, an ice-bag should be constantly applied to the spleen. In cases of enlargement the patient should be bathed most gently and carefully. A sudden increase in the pulse-rate, 20 or 30 beats, at any time during the course of this disease, should be investigated thoroughly. If this increased pulse-rate is attended by evidence of shock (hæmorrhage), the attendant should be notified instantly. If the liver dulness is not obscured and a rapidly rising temperature soon sets in, rupture of the spleen is the tentative diagnosis. Pain is an insignificant diagnostic sign of rupture. On diagnosis, infusion and Fowler's position should be instituted, immediately before operating. The use of adrena-should be of little value. The lin, ergot, and iron preparations would seem to be of little value. The only hope for recovery is in operation. In the course of operation for intestinal perforation, the spleen should be gently palpated through the abdominal incision and, if like a bag of molasses, should be removed.

All the grave complications of typhoid fever are essentially surgical. A typhoid state is no contraindication for operation. Aspiration of the pus tumor can be carried out. Continuous peritoneal lavage with normal salt solution by means of two glass tubes, the giving one in the upper end of the incision (subdiaphragmatic) and the receiving tube a suprapubic stab, should be employed after removal of the organ. Roentgenography may be employed in suspected cases.—*The Monthly Cyclopædia and Medical Bulletin.*

Practical Advice in the Treatment of Irritable Lunatics.

By Dr. E. REISS, Clinic for Mental and Nervous Diseases at the University of Tübingen.—As regards the powdered hypnotics, Veronal and its sodium salt Medinal hold a pre-eminent position. They are best given in doses of 0.5 to 1 gram. in wafers, on an empty stomach, mixed with large quantities of liquid; otherwise resorption might take place slowly and irregularly, and delay the effect, which may thus extend to the next morning instead of during the night. Of these two hypnotics, preference should be given to Medinal, on account of its easy solubility. It can be administered to patients who refuse to take it per os or as clyisma without any difficulty when dissolved in 10 to 20 c.c.m. of water and mixed with a little amylum.—*The Therapist*.

Ethyl Chlorid as an Anæsthetic.

Dr. SILL, in the *Medical Record*, extols the merits of Ethyl Chlorid, in which we have a comparatively safe and reliable general anæsthetic, which is most suited for operations for the removal of adenoids and tonsils in children. The anæsthetic is simple of administration and does not require an expert or one of large experience to give it. The patient is under the influence quickly, is out almost immediately upon completion of the operation; there are no unpleasant or dangerous effects from its use either during or after the operation. The anæsthetic is not only especially applicable in operations in the throat, but should be used in most of the other operations performed upon children. When the inhaler is kept over the patient's nose and mouth he can be kept under the anæsthetic as long as desired. It is only when that is removed that the patient regains consciousness more quickly than with other anæsthetics. Where long operations are necessary on the nose or throat he advises first putting the patient under Ethyl Chlorid and then continuing deep anæsthesia with ether, using the drop method.—*The Monthly Cyclopædia and Medical Bulletin*.

Treatment of Mucous Colitis.

KOHLER gives the following conclusions regarding the treatment of mucous colitis:—1. We must eliminate in, as far as possible, any known cause. 2. We must use the best possible means of overcoming stasis of the bowel, and procure, if possible, normal evacuation of its contents. 3. We must use necessary means to restore and improve the natural tone of the mucous membrane and muscular coats of the intestine. Generally speaking, the large intestine should be

thoroughly washed out once a day, so as to effectually remove all mucous from the colon. To do this, at least two quarts of water should be used, and the patient should assume the knee-chest or a modified Sims' position. By allowing the water to flow very gradually and by having it at about the temperature of the body, all straining is avoided, and patients quickly learn to hold a quart or even two quarts of water, and to retain it for many minutes. As a rule a considerable quantity of mucous comes away with the water. The best time to give the enema is in the forenoon, about 11 o'clock, for by that time the bowels will usually have moved, and the action of the water upon the empty intestine will be more beneficial. Drugs are of little value. Iron, arsenic and strychnine should be given for the anæmic, and sometimes antiseptics, such as creosote and bismuth salicylate, are useful to allay intestinal fermentation. As regards diet, different views are entertained. Some believe in the protection of the intestine as much as possible, advocating the simplest non-irritating diet—one that leaves the smallest residue. Others, such as VON NOORDEN, HENNICKER and BOAS, do not consider the starvation diet rational; indeed VON NOORDEN urges the use of a diet that is very coarse and containing much cellulose, and fruits with small seeds and thick skins, like currants, gooseberries and grapes. He maintains that action of the bowels must be rendered normal, not only for the time of the cure but for all time. With this object in view, he suggests the use of a coarse diet as above outlined for several weeks. Regulation of the bowel leads to a rapid cure in many cases of mucous colitis. The author thinks that it is best, as a rule, to urge abundant and nutritious diet, without, however, insisting that the patient eat substances that are too coarse, and he thinks it also advisable to divide up the meals so that five or six meals are taken daily. Next to abundant nourishment the methodical oil cure is of great value. The oil should be used every other night in half-pint doses, and should be retained in the bowel overnight. This, if persevered in, favourably influences the constipation and also effects a diminution or actual disappearance of the mucous discharges. If these measures fail, after careful and persistent use, then and then only should the question of surgical intervention be raised.—*The Australasian Medical Gazette*.

Intestinal Perforation in an Ambulatory case of Typhoid Fever—Recovery.

BY

H. GERALD LOUGHRAN, M.B., B.S. (MELB.),
Brighton, Victoria.

G.C., æt. 21, furnace hand at smelters, consulted me on Thursday, August 21st, 1909. He had felt quite well and had been at work up

till preceding Monday, when he had a headache. He now complained of "headache" and felt "sick all over." Temperature 99, pulse 82. Sent in to hospital, the diagnosis being either dengue or *incipient* typhoid.

The following day the temperature was 100.2, the next day it was 99.4, next day normal. Two days later he was discharged at his own request with a temperature of 97.8 and a pulse of 60. (August 26th). He had had no spots and no enlargement of spleen, and said he only felt sick on two days.

On August 27th he states that he felt well, ate a hearty breakfast and lunch, and signified his intention of going to work on "afternoon shift."

At 2-30 p.m., he was seized with intense pain on the right side of the abdomen, below the umbilicus. My colleague, Dr. LOONEY, saw him at 4 p.m., when he was in a collapsed condition, and sent him to hospital after giving him $\frac{1}{4}$ gr. morphia hypodermically. On admission at 5 p.m. his temperature was 102.4, pulse 130, respiration 24.

At 8 p.m. when I saw him in company with Dr. LOONEY, his temperature was 102.8, pulse 120; pain not so severe. He lay on the right side with his knees drawn up; the right side of the abdomen was rigid and extremely tender. We thought him to be an acute case of appendicitis, but as his expression was better than when Dr. LOONEY had seen him and his pulse was improving, we decided to wait till morning.

No suspicion of typhoid crossed our minds, and in fact there was nothing in the history to suggest it.

At 10 a.m. the following morning (28-8-09) his temperature was 101, pulse 100. His facies looked worse than on the preceding day, and there was some dullness in the right flank.

At 11 a.m. Dr. LOONEY administered chloroform, and I opened the abdomen by the usual incision for the appendix. On incising the peritoneum, which appeared thickened and unduly vascular, a gush of faecal fluid took place, containing some semisolid particles. So faecal was this fluid that I thought at first I had opened an adherent coil of bowel, but was soon able to satisfy myself that the peritoneal cavity was full of this feculent material. As much as possible was allowed to run out, and swabbed out, and then the appendix was sought for. The caecum was reddened and flaked with lymph, but the appendix was healthy and not adherent to anything. The lower portion of the ileum was now pulled out, and in the first coil which escaped was a perforation of the diameter of a lead pencil, from which a particle of undigested food was protruding. The peritoneal coat of the bowel was red and cracked and flaked with

lymph. The perforation was surrounded by a continuous Lembert's suture, which seemed inclined to cut through the friable bowel. As much fluid as possible was swabbed out of the peritoneum, the bowel returned, and a large drainage tube inserted into the wound, which was partially sutured. A second incision was made above the pubes, and more faecal fluid escaped. This was swabbed out with sponges on holders and a large drain tube was passed down to the bottom of the pelvis.

The patient was put to bed in Fowler's position, and a continuous enema of saline given per rectum. Temperature at 8 p.m. 102, pulse 108; has vomited at intervals, and, with straining, a good deal of dark green fluid. During the night he retained about 4 pints of saline, slept half an hour, vomited dark green fluid at frequent intervals, and passed 26 oz. of urine.

29-8-09.—Temperature at 8 a.m. 100, pulse 100; temperature at 8 p.m. 100, pulse 92, has vomited a good deal during the day; only retained about 15 oz. saline. Given calomel gr. 3 in six half-hourly doses; slept about an hour during the night.

30-8-09, at 8 a.m.—Temperature 98°, pulse 84; bowels have acted; wounds discharging freely a light brownish fluid. Saline discontinued.

1-9-09.—Faeces are coming through tube above pubes. Temperature 98°, pulse 88.

2-9-09.—Tube removed from wound in appendical region, and gauge packing used.

12-9-09.—Faeces still coming through tube in mid line. Tube shortened so as to just pierce abdominal wall.

17-9-09.—Tube left out of faecal fistula. Bowels acting daily after enemata.

30-9-09.—Complaining of abdominal pain. Very little faecal matter coming through fistula. A tumour present above and to right of umbilicus, hard on palpation and dull on percussion, but not tender. Bowels rather constipated.

Given large doses of castor oil and mag. sulph. for next three days with little effect on bowels. On October 4th a high enema of olive oil and soapsuds brought away an enormous stool containing some scybalæ. This was repeated on the following day with a like result. The tumour then gradually disappeared, the bowels acting freely with aperients, and he has since been free from pain.

7-10-09.—Faeces appeared in fistula for last time.

9-10-09.—Allowed up.

Nov. 1st, 1909.—Both wounds healed; patient walking about feeling comfortable.—*The Australasian Medical Gazette.*

SURGERY.

Varicocele.

BY

D'ARCY POWER, F.R.C.S.,

Surgeon to St. Bartholomew's Hospital.

When you have to do the operation, just remember some details about it. First of all, you prepare the patient in such a way that no irritation of the skin is caused; you must bear in mind all the time that the skin here is very delicate, and you must not set up eczema or dermatitis by your preliminary treatment. I would rather the patient were washed on the operating table with ether soap and biniodide lotion, and at once proceed to operate, rather than prepare the skin overnight, and pack him up, with the subsequent risk of chafing. You want a good assistant, who would devote himself to nothing except keeping the vas deferens away from the vessels which you are going to tie. He has enough to do if he holds the scrotum up with the index fingers and thumbs of his two hands, and is sure he has got the pampiniform plexus just underneath the skin, and that the vas is below his fingers. He makes the skin quite tense, and when he has done that, you incise between the two fingers, *i.e.*, $1\frac{1}{2}$ inches. Cut down through skin, and then through fascia, three or four or five layers, as the case may be, until you come down to the veins themselves. The mistake is to try to pass the needle under the pampiniform plexus before you come down to it. This plexus lies in several layers of fascia, and you must divide each if you are going to get the best results; go right down until the veins shine out as black things; and even then there is another layer of fascia which you can divide. So the essence of the operation is freeing and seeing the pampiniform plexus. And do not let your assistant move his fingers, otherwise the vas deferens will slip up, and you will almost certainly tie the vas with the veins. Remember that the veins lie packed together in little packets. Take an aneurysm needle, pass it beneath the packet of veins which you have freed. It is a proof that you have freed them sufficiently if you have to use no force to pass your aneurysm needle. If the needle will not pass freely underneath the veins, or if you have to cut down upon the end of it you have not divided all your fascia. Better it is to take your needle out again, take up your scalpel and forceps again, and go on cutting through the fascia until you can pass your needle readily, than to force the aneurysm needle through tough fascia. When you pass your needle under the veins, you should be able to move it to-and-fro at least an inch, so that there is an inch of that plexus exposed in the wound. Pass a double ligature through the eye of the needle,

withdraw your needle—and your ligature will be of catgut for choice; then tie the pampiniform plexus in two places, where you have freed it, that is to say, an inch apart. The parts are many, and you must get your knot tied into the veins, slowly, evenly and securely. When you have the ligatures tied, put a pair of pressure forceps above and below each. It happens to even the best of us that when we think we have securely tied a ligature, it slips off; therefore you must have your pressure forceps to pull upon the ends if this accident should happen. Cut out a piece of the veins between the two ligatures, generally about half an inch. You want to leave a fair piece of vein between the end of the ligature and the point where you divide; otherwise the ligature will certainly come off, and if it does, it is a disaster, as far as that particular case is concerned. There is certain to be much bleeding from the ends of the veins. A good varicocele operation is bloodless from beginning to end, and that is a very important factor in the subsequent repair. If you are at all careless or rough you are certain to have a hæmatoma. You have two ends of divided veins and the first thing which strikes you when you divide them is: "I have certainly got that vas after all." But it is not. When you look at the veins they are so thickened, and the walls are so thick that unless you cut sections and microscope them, you cannot tell the vas from veins. These thickened veins nearly always stand out. Take the two ends of the catgut ligature, and tie them together, so that you bring the ends of the veins into apposition. There must be a lump; you cannot help it. It is of no use trying to get them into exact apposition. Then bring the skin edges of the wound together; you need not trouble about the fasciæ, and be very careful that the skin edges are not turned in. The proper way to get them into apposition is for your assistant to let go the scrotum which he has been holding all this time, put a blunt hook on either side, and pull the ends tight. Then you can easily sew the edges. It is better not to use a continuous suture, use three or four interrupted sutures of fine catgut. If you get everything quite dry the subsequent dressing should be collodion and wool. In about seven or eight days' time the patient can go out; there is no reason to keep him in bed after taking the stitches out.—*The Canadian Practitioner and Review.*

Appendicitis with Normal Temperature and Normal Pulse: Report of a Case.

BY

HERMANN B. GESSNER, M.D., New Orleans.

The combination of elevated temperature and quickened pulse is regarded by many as an essential item in the clinical picture of an early

appendicitis. The normal temperature of a well circumscribed abscess and the normal or subnormal temperature of a virulent infection against which the organism is powerless to react—the latter associated with a quick, weak pulse—are recognized clinical facts. That the stage of invasion may also have an afebrile character is not so well known. For this reason the following case is deemed of sufficient interest to be here reported:

Frank C., colored, male, aged twenty-seven years, railroad employee, was admitted to Charity Hospital on September 25th 1909, suffering from a compound comminuted fracture of both bones of the right leg. The course of this injury was uneventful.

On Sunday evening, October 24, he began suffering with abdominal pain, accompanied by vomiting. On Monday this pain was still present, also the vomiting; the bowels being inactive, magnesium sulphate was administered in two one-half ounce doses, and three soap-suds enemata were given, all without result.

On Tuesday the writer's attention was called to the case, the picture of which may be summed up briefly as follows: Abdominal pain, vomiting, obstinate constipation for thirty-six hours, tenderness over appendix, abdomen rigid, especially as to the right rectus; temperature normal, pulse 72. The other features appearing to outweigh the normal temperature and pulse, the patient was at once prepared and operated on. A long, thick, angry-looking appendix was found, pointing its tip over the brim into the pelvis. Adhesions were broken up gently and the appendix removed, using the cuff method of treating the stump because of its thickness. Recovery was uneventful.

The giving of salts is mentioned only to be condemned, as an enema will usually accomplish the same purpose as efficiently and far more safely.

The absence of febrile temperature and pulse elevation might be explained by the thickness of the tube wall but for the surface injection and the fresh adhesions above mentioned.—*The International Journal of Surgery.*

The General Practitioner as Anæsthetist.

By

J. ALLAN, M.D.

The administration of anæsthetics is in some quarters looked upon as work for a specialist, but there is no reason why it should not be legitimately done by the general practitioner. The duty of giving anæsthetic cannot, however, be lightly undertaken, and the public have a right to demand

that those who give anæsthetics should have had adequate training in this branch of medicine.

CHOICE OF AN ANÆSTHETIC.

For major operative work, where prolonged anæsthesia is required the choice naturally rests with chloroform or ether or a mixture of these. For several reasons chloroform has been the choice of the majority of practitioners. Perhaps the chief reasons are that chloroform can be so easily carried about and that it can be so easily administered. Ether has never been so much favoured by the man in general practice, probably owing to the greater difficulty of transport of the Clover's apparatus and because of the supposed greater trouble in administering it. There is now a general consensus of opinion in favour of the exhibition of ether by the open method, but the difficulty is that large quantities are used, the mask becomes saturated, and, unless great care is exercised, the ether may get on to the patient's face. This last risk may to a certain extent be obviated by employing three or four layers of lint or flannel in the construction of the mask and by interposing between the face and the edge of the mask a layer of wool or gauze. A mixture of chloroform and ether in the proportion of one of chloroform to two of ether (C₁ E₂) or two of chloroform to three of ether (C₂ E₃), is an excellent and efficient anæsthetic and is certainly much safer than pure chloroform. As a routine general anæsthetic this mixture is about as good as any. As regards fatality, ether is undoubtedly less dangerous than chloroform, but it is more disagreeable to take and the after effects are likely to be more marked. It is more liable to be followed by pulmonary complications, and its exhibition is contra-indicated in patients suffering from bronchitis, etc. For this reason it is not an ideal anæsthetic for old people who are the subjects of chronic bronchitis. It may be incidentally mentioned that many of these old people take and bear chloroform very well indeed. Ether, when administered with freer admixture with air, is not so liable to cause severe after effects or to be followed by lung complications. For minor surgical work ethyl chloride can be used, but it is only suitable for operations which can be accomplished in a few minutes. As a preliminary anæsthetising agent, prior to the exhibition of chloroform or ether, it is excellent. It must not, however, be recklessly administered, because as regards fatality it is intermediate between chloroform and ether, and it therefore cannot be called a safe anæsthetic. It would appear that it cannot be given without risk to a patient in the sitting posture, for example, for teeth extractions in a dentist's chair. Nitrous oxide is the best anæsthetic to use for minor dental work and, it can also be employed in simple surgical operations as in opening abscesses, incising whitlows, etc., where anæsthesia of short duration is only necessary.

ANÆSTHETIST'S ARMAMENTARIUM.

There are certain things which should always be at hand when an anæsthetic is given, no matter how simple the case may be. These necessary items are tongue forceps mouth gag, hypodermic stimulant, and perhaps a mask. Of course, the anæsthetic might be given by means of a towel or piece of lint, but my own experience is that it can be more easily and more satisfactorily given on a mask. No anæsthetic case should be undertaken unless a hypodermic syringe in working order and charged with strychnine is at hand. It takes time to fill a hypodermic syringe, and the prompt injection of strychnine may avert a fatal syncope. It is always a wise precaution to be prepared for emergencies. While the things just mentioned may be taken as the minimum with which an anæsthetist should work, he will prefer to have a better stocked table beside him. In addition to the above, he will probably desire one or two towels, a basin, an extra hypodermic syringe, a minim measure-glass, amyl nitrite capsules, brandy, solution of strong ammonia, throat sponges, etc.

SOME PRACTICAL POINTS.

The patient should be properly prepared; that is to say, the bowels should have been thoroughly moved and no food taken for some hours prior to the exhibition of the anæsthetic. These precautions diminish the risk of accidents during anæsthetisation and tend to minimise after effects. The condition of the various organs, heart, lungs, kidneys, should always be previously carefully investigated. For instance, a child suffering from several boils is put under a general anæsthetic to allow these being treated surgically. The child afterwards sinks into a fatal coma, and it is then discovered too late that there is sugar in the urine. The anæsthetic should be given slowly and continuously by constantly dropping it on to the mask from a special bottle. The mask should not be saturated with the anæsthetic and then placed tightly down on the patient's face. Once surgical anæsthesia is established this condition is best maintained by frequently dropping a little of the anæsthetic on to the mask. When struggling the patient should not be forcibly held down. It is better to simply guide the patient's movements so that he does not harm himself or other people. During this stage the anæsthetic should be given well diluted. Nothing is more calculated to risk the patient taking an overdose than the holding of the mask saturated with the anæsthetic close to the patient's face during the time he is struggling. Speaking generally, one may say that surgical anæsthesia is indicated by muscular relaxation, regular breathing, contracted pupils and absence of corneal reflex. All four may not be present, and it is quite possible to

have perfect anæsthesia without the abolition of the corneal reflex. In conclusion, it may be said that the practitioner who undertakes to give the anæsthetic for a major operation should realise that his duty is to attend to the administration of the anæsthetic, to watch carefully the effect on the patient.—*The Hospital*.

Skin Grafting on Large Surfaces.

Dr. E. K. MACOMBER gives the salient points of his technic as follows:

1. Do not graft till the surface is well granulated and healing has begun.
2. Take skin from person to be grafted when possible.
3. Use silver nitrate the day before to prepare the field instead of shaving or scraping the granulated surface at the time.
4. Wash with salt solution and wipe dry with sterile gauze before placing grafts.
5. Place grafts around the edge near the skin border, laying them directly from the razor without immersing them.
6. Lay grafts smoothly and press out all air bubbles.
7. Cover grafted area with a single layer of gauze, which leave in place for a week. Cover this with a thick pad of gauze wet with salt solution, then a layer of absorbent cotton, then a firm roller bandage.
8. Remove all dressings, except single layer, daily. Cleanse with salt solution and apply fresh dressings as before.—*The International Journal of Surgery*.

Stricture of the Male Urethra.

BY.

E. O. SMITH, M.D.,

*Professor of Genito-Urinary Surgery, Ohio-Miami Medical College;
Genito-Urinary Surgeon, Good Samaritan Hospital, Cincinnati.*

Stricture of the urethra is an abnormal narrowing of some part of that channel which interferes with the free outflow of urine, due to either muscular spasm or to organic changes in the walls of the urethra.

Abnormal narrowing of the external meatus should be divided very carefully. If cut too widely, the patient will be left without projectile force.

Spasmodic contraction of the urethra is usually due to acid urine, sexual excesses, fissure of the anus, hæmorrhoids, pinworms, cantharides, turpentine, etc.

Strictures following traumatism are much more stubborn to yield to treatment and the band of scar tissue may have to be dissected out through an external incision.

The popular idea that a rapid cure of gonorrhœa causes stricture is not based on facts, but on the contrary, the longer the duration of the gonorrhœal inflammation the more liable is the patient to have a

stricture. In fact, it is the exception for an urethra to become absolutely normal after one prolonged attack of specific urethritis. The part behind the constricting band becomes dilated; a pouch is formed which is a most excellent container and incubator for the germs of sepsis which may lead to periurethral abscess and possibly urethral fistula. This argues for an early treatment of stricture.

Stricture is suspected when there is gleet, frequent micturition, with a tardy beginning of the stream, dribbling after urination, with possibly some hypogastric pain.

In examining for stricture great care and gentleness must be practised, otherwise a false passage may be produced.

Treatment is both general and local. The diet should be bland and not stimulating; alcohol and tobacco are to be excluded; sexual excesses to be avoided, also exposures to cold and wet.

Local treatment consists in gradual dilation. Begin with the largest sound or bougie that can be easily passed. This may be only a filiform. Gradually increase the size of the sound used. Treatments should be given every four or five days in the beginning, always being surgically clean with one's hands and instruments.

Urethral chill and shock can usually be prevented by giving the patient ten grains of quinine and five drops of tincture of aconite about twenty minutes before the treatment.

Epididymitis may, but seldom does, follow the passage of a sound.

Strictures that do not yield to the gradual dilation treatment are the exception. Internal urethrotomy should not be attempted except by those skilled in genitourinary surgery, as there is a possibility of doing great damage.

External urethrotomy is seldom necessary in the treatment of strictures other than those due to traumatism.—*International Journal of Surgery*.

OBSTETRICS AND GYNÆCOLOGY.

What Women should know in Regard to Uterine Cancer.

BY

J. H. CARSTENS, M.D., Detroit, Mich.

I have suggested that the medical profession agitate this point in the lay press, and on every occasion talk about cancer. Take our calendar, and the different days of the year are named after some supposed great saints (and most of them were great sinners); it seems to me a great deal better to name one day of the year "Cancer Day," and have every-body talk about cancer; have the lay press full of cancer articles

on that day; the preachers in their sermons should talk about cancer; the doctor should talk about it—then we can hope to arouse the public, and especially the medical men, to think of this great menace.

I have suggested to the Michigan State Board of Health that they get up a circular, which should be in the hands of every woman in the cancer period of life. These circulars should be in possession of county societies, and of every physician. I have suggested something like this:

The change of life or menopause comes on gradually, rarely suddenly. It is not preceded by excessive flowing or discharge or pain in a healthy woman.

By cancer period is understood those years after forty, although rarely it may occur earlier.

The first symptoms of cancer are:

1. Profuse flowing, even if only a day more than usual. Flowing or spotting during the interval or after the use of a syringe or a movement of the bowels.

2. Whites or leucorrhea, if not existing previously. If existing, but becoming more profuse, watery, irritating, or producing itching, it is a very suspicious symptom.

3. Loss of weight, if no other cause is apparent. Pain in the region of the womb, back or side.

If any of the above symptoms occur after the age of thirty-five or forty, a woman should seek prompt relief and insist on thorough investigation of the cause and prompt treatment.

Cancer is always at first a local disease, and can be removed if early recognized, and an absolute permanent cure brought about.—*International Journal of Surgery*.

Dysmenorrhea.

BY

AUGUSTIN H. GOELET M.D., New York,
Professor of Diseases of Women, New York School of Clinical Medicine,
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Hospital, Etc.

Dysmenorrhea (painful menstruation) is one of the most important symptoms of which women complain, important from her standpoint because its anticipation every month is often a nightmare, and when the pain is severe it incapacitates her for her usual duties, frequently confining her to bed—important also, because when neglected it often leads to serious disease of the pelvic organs, or it may indicate the existence already of serious disease that requires immediate attention. As a rule,

too little attention is given to this condition by writers of works on diseases of women because it is only a symptom; hence the physician who is called upon to deal with it has very little to guide him either concerning its numerous causes or the means of affording permanent relief, and he is prone to regard it with indifference or employs only palliative measures for the relief of pain.

Undoubtedly, persistent, severe dysmenorrhea indicates something out of the ordinary, something more than simple congestion or spasm, and it deserves more consideration than is usually accorded it. That it is, in the beginning at least, often caused by mechanical obstruction in the cervical canal is in a measure true, though it may be difficult to demonstrate this when the patient is examined, during the interval between menstrual periods, because the obstruction may be due to spasm or swelling (infiltration) of the mucous membrane which disappears with the congestion coincident with menstruation. However, when the obstruction, which invariably occurs at the internal os, is caused by induration of the structure at that part of the canal it is quite demonstrable at all times, as there is an exaggerated sensibility that is distinctly manifested when anything passes this point.

Whether this obstruction is the sole cause of the pain during menstruation in these cases, or there is something back of this condition producing it, is not always easily determined. I am inclined to believe that spasm of the uterus with contraction and narrowing of the cervix is most frequently the direct source of the pain in the majority of instances. But the question is to determine what produces this. Is this obstruction a cause or result of the condition producing the dysmenorrhea?

There are two principal types of dysmenorrhea that are most important, *viz.*, one when the menstrual flow is scant and insufficient, and the other when the flow is too free or profuse.

When the flow is scanty it usually signifies imperfect development of the ovaries or uterus, or both, or it may be a condition of atrophy if it occurs later in life after the flow has been normal. Then again it may be caused by displacements especially flexions of the uterus, growths, or tumors that, by pressure or displacement of the pelvic organs, interfere with the blood supply to the uterus and ovaries. I once observed this condition in a patient who had a dermoid cyst of one ovary that developed between the uterus and bladder, crowding the uterus back into the hollow of the sacrum. After its removal menstruation was freer and was attended with much less pain. Anemia, impaired general nutrition, sedentary habits, an indolent life, unhealthy surroundings, excessive

development of fat, all induce scanty, but not necessarily painful menstruation, though such conditions may be associated with dysmenorrhea and may presumably act as contributing causes.

When the flow is too free or profuse it may indicate inflammation of the endometrium, or the uterine body of the adnexa, a growth in the uterine cavity or in the wall encroaching upon the cavity, or obstruction to the return circulation from the uterus by growths external to it, or inflammatory exudates in the broad ligaments, or adhesions so distributed that the vessels are constricted. Prolapse of the kidney by pressure on the ovarian vein also causes obstruction to the return flow from the uterus, and we find it often associated with this type of dysmenorrhea. Displacements of the uterus also appear at times to be a cause of this form of dysmenorrhea, retroversions and anteversions in particular, while, on the other hand, flexions are more frequently associated with the other form characterized by scanty menstruation. Whether the displacement is a cause or the result of dysmenorrhea or merely coincident cannot always be positively determined. It is nevertheless true that permanent correction of these displacements by an operation that maintains the uterus in position invariably cures the dysmenorrhea, provided contributing causes are likewise removed.

I recall a case that illustrates this point very clearly. A lady, when forty-one years old, was submitted to operation for fixation of a prolapsed kidney and suspension of the uterus for retroversion, and was thereby completely cured of an unusually severe dysmenorrhea that had continued since puberty, confining her to bed for several days at every period. During this time pessaries had been used to support the uterus, and dilatation and curetting had been resorted to also, all of which afforded only temporary relief and only moderation of the pain.

Not all forms of dysmenorrhea, however, are characterized by either scanty or too profuse menstruation. In some cases the amount is normal yet the pain may be severe.

The pain during menstruation is not always uterine, though it may be referred to the uterus most frequently. Its actual location at times is the ovary or the Fallopian tube leading from the ovary to the uterus. A diseased condition of the ovarian structure may make rupture and discharge of the ovum painful, or obstruction at the uterine end of the tube (its narrowest part) may give rise to pain from the effort of the tube to expel the blood and ovum into the uterus, inducing spasm of the muscular structure of the tube wall as well as that of the uterus.

The pain may be more severe before the flow makes its appearance, and then upon its free establishment becomes less severe or abate

completely, or it may not occur until the flow ensues and continue throughout; or there may be no pain until the flow ceases. Pain that occurs before the appearance of the flow is usually of ovarian origin, or it may be tubal. When the pain is paroxysmal in the beginning and the flow is intermittent and scanty, it usually denotes obstruction at the cervical canal. When the pain continues throughout menstruation it is evidence of some chronic inflammatory condition of the uterus (metritis, endometritis) or adnexa (the tubes and ovaries), and when the pain is more severe or continues after menstruation has ceased, and especially if a discharge follows the menses, with at times insufficient flow, it usually denotes interference with the circulation of the uterus by growths or deposits, such as post-inflammatory exudates, or it may be displacement of the uterus.

At times dysmenorrhea will begin with the first menstruation at puberty, and will go on increasing in severity from year to year, which would seem to indicate that the condition causing it is steadily progressing. Hence it is most unwise to let it go unremedied. I have observed ovarian cystomas and ovarian cysts in cases of this kind, and it may be presumed that their cause was neglect of early correction of the condition producing the dysmenorrhea, since dysmenorrhea maintains a congested state of the ovaries. In other cases the dysmenorrhea is relieved or aggravated by marriage even when pregnancy does not occur. Aggravation of this symptom after marriage certainly calls for immediate investigation and immediate steps for its relief. But dysmenorrhea may first make its appearance after marriage. When a girl, who has been menstruating normally and without pain before, develops painful menstruation after marriage, it almost always indicates infection from the husband and calls for prompt action. It may, it is true, arise from improper marital relations, excesses, or efforts to prevent conception, but it should then likewise be given prompt attention.

Treatment.—From the foregoing it is evident that it would be impossible to outline any particular method of treatment for dysmenorrhea that would be applicable for all cases. Every case must be dealt with individually, and the treatment resolves itself into correction of the condition producing it. In other words, its cause must be sought and removed. This is the only rational procedure that can be adopted. Hence it is only possible to state tentatively what method of treatment would be appropriate if certain conditions were operating as causes.

If the cause is found to be cervical obstruction, dilatation of the canal is manifestly proper, but it should be maintained to insure permanent relief. Recontraction would bring about recurrence of the obstruction

and return of the pain. Other conditions that may act as contributing causes of the pain or maintain increased congestion of the pelvic organs must likewise be given attention at the same time, and must be corrected. For instance, impaired general health, unfavorable environment, prolonged engagements, unsatisfied or imperfectly relieved sexual excitement, and conditions within the pelvis and above in the abdomen that are maintaining congestion of the pelvic organs, as prolapse of the kidney's constipation, intestinal indigestion, etc.

Dilatation may be accomplished by means of the steel dilator under anæsthesia, and should be maintained by the introduction of a drainage stem through the canal, which should be inserted immediately after dilatation and kept in place by a tampon. It should be retained in position for a week, being removed from time to time for the purpose of cleansing and irrigation of the cavity of the uterus. Meanwhile the patient must be confined to bed. At the time of dilatation the cavity of the uterus should be curetted, and special attention should be bestowed upon the internal os, where the sharp curet should be used to remove indurated elevations upon the surface of the mucous membrane. In some cases the same thing can be accomplished by repeated application of negative electrolysis with conical electrodes without anæsthesia, and the treatment can be carried out at the office without confining the patient to bed.

Displacements of the uterus should be corrected by operation, since no positive reliance can be placed upon pessaries, as a rule, for correcting such conditions, posterior displacements in particular, when associated with dysmenorrhea. Anterior displacements, however, may often be corrected by dilatation as described above, followed by vaginal support of a properly adjusted pessary, and in some cases by negative electrolysis aided by the pessary.

When dysmenorrhea is due to imperfect development, electricity judiciously used will accomplish a great deal. Both the galvanic and faradic currents are to be employed, and the applications are made through the uterus by means of an electrode inserted into the cavity. But it will be necessary to continue these applications for a considerable length of time in order to accomplish the desired result.

In some cases more radical measures will be required, though, unless the necessity is plainly pronounced, they should not be resorted to until other methods of relief have been employed and have failed. It would be quite useless, as well as most unwise, to persist with treatment that did not afford relief or gave no evidence of effecting a cure.—*International Journal of Surgery.*

The Clinical Significance of Glycosuria in Pregnant Women.

A positive reaction with Fehling's solution during pregnancy does not necessarily indicate the existence of diabetes but is usually due to lactosuria, or to transient, alimentary, or recurrent glycosuria. In such cases it is imperative to determine whether the sugar occurs as lactose or glucose, for lactosuria is without clinical significance and is probably associated with premature activity of the breasts. The fermentation and the phenyl-hydrazine tests should therefore be applied.

The significance of glycosuria is not so clear. If alimentary in character, it may be disregarded with impunity. Otherwise, it may be of the transient or recurrent variety, or may indicate the existence of true diabetes. If glycosuria appears late in pregnancy, does not exceed 2 per cent. in amount, and is not accompanied by symptoms, it is probably transient and may disappear spontaneously at any time, or persist until the end of pregnancy. In either event it is usually of slight clinical significance, and merely indicates that the patient should be carefully watched. If the sugar appears in pregnancy and in large amounts, the condition is more serious.

Pregnancy may occur in diabetic women, or diabetes may become manifest during pregnancy. Either is a serious complication, although the prognosis is not so alarming as is frequently stated; many patients do perfectly well, while a smaller proportion die in coma, or collapse at the end of pregnancy, or during or shortly after labour. If the output of sugar is large and cannot be controlled, or at least markedly diminished, by suitable dietetic and medicinal treatment, the induction of abortion or premature labour is indicated even in the absence of serious symptoms, and much more so when they are present. In pregnant women, as in any other cases of diabetes, it is important to remember that the actual presence of sugar in the urine is not a sign of bad prognosis unless there is at the same time evidence of acidosis. This is indicated by the presence in the urine of di-acetic acid and acetone, in addition to sugar. It is much more important to apply the sodium nitroprusside test to the urine in cases of this kind, therefore, than it is to rely on Fehling's test alone.—*The Hospital*.

The Vomiting of Pregnancy Treated by Adrenalin.

REAUDI speaks highly of his experience in the treatment of a severe case of hyperemesis gravidarum of more than two month's duration by means of adrenalin in small doses. Various remedies

had been tried, and artificially-induced labour was seriously contemplated. In whatever way the drug acts—whether by neutralizing the toxins produced in pregnancy, by toning up the nervous and muscular system, as an antitonic, as a stimulant of tissue change, or as a regulator of the vasomotor system, or in any of the other methods which have been theoretically suggested—the author is convinced of its great therapeutic success in the cure of obstinate vomiting of pregnancy.—*The Medical Times*.

THERAPEUTICS.

Effect of Drugs on Blood-vessels.

DRS. EPPINGER and HESS have studied, according to the method of E. O. MEYER, the action of certain drugs that are known to influence in some way the vascular system. Blood-vessels removed from animals immediately after death are suspended in a solution containing the drug to be studied, and the changes in their length which they undergo are registered and observed by means of a kymograph. Comparing the effects produced on peripheral arteries with those on the coronary arteries it is found that these two kinds of vessels are affected differently by some of the drugs. Thus with adrenalin the coronary arteries dilate, while the peripheral arteries contract. Just the inverse happens with choline, eserine, and pilocarpine. The digitalis group cause contraction of both kinds of vessels, and atropine, ergotine, and the nitrites cause dilatation. Also caffeine and theobromine dilate the two kinds of vessels. Iodides are found to have no effect at all. The authors suggest that these facts are of therapeutic interest, for in some cases it would be desirable to associate two drugs together in order to produce an effect at the same time upon the vessels of the heart and on those of the periphery.—*The Hospital*.

On Medinal.

PERETTI reports on his experiences with Medinal at the Grafenberg Asylum. The remedy was employed internally in forty-two cases of lunatics of various categories, in all about 500 doses of generally 0.55 gm. in 30 grms. aq. menth. The success was very similar to veronal (0.5 gm), but the effect was prompter. I never noticed that the patients became habituated to the remedy, nor that it had any cumulative effect or unpleasant by-effects. The greater solubility of Medinal in cold water (1:5), compared with veronal (1:145), affords not only the advantage that its internal administration is easier, and it is more quickly resorbed, but also in cases where the stomach must be protected it can be applied per rectum and subcutaneously. Subcutaneous injections, even 10 per cent. solutions, which have been tried in four cases, are not

quite painless. Medinal was most efficacious in cases of slight depression and in simple insomnia of a neurasthenic character. In severe depression the nights were a little better than when nothing had been given. In organically produced disturbances the effect was uncertain, senile women reacting a little better than senile men. In paralytics the remedy often proved useless. In cases of excitement in lunatics Medinal is not an efficient substitute for the other subcutaneously applied remedies, such as morphia and scopolamin. — *The Therapist*.

The Local Use of Chloral Hydrate.

THOUGH chloral hydrate may be ranked as one of our best known and most widely used narcotics, its local action upon bacteria and upon tissues does not seem to be very generally appreciated. For a number of years various practitioners have been using solution of this salt for local application to contused and inflamed tissues, and these claim that in such conditions as bruising of soft parts, burns, sunburns, and even acute arthritis it is a decidedly effective anodyne. In the *Munchener Medizinische Wochenschrift* for November 23rd, 1909, HELLER describes several ways in which the salt is of value for its local activity. He first calls attention to its powerful deodorizing effect, he having for many years used 5 per cent. solutions for the preservation of pathological specimens, and as a useful and effectual wash for the hands, hair, and beard of the pathologist, removing completely the clinging odours of the autopsy or dissecting room. Besides its use in the laboratory, he says it is of great value in the clinic, especially in cases of tonsillitis and pharyngitis. His procedure of treating such cases consists of taking into the mouth a small amount of a 2½ per cent. solution of chloral hydrate, and, after throwing the head back, of swishing the fluid about in the throat without gargling. In the same article PROF. QUINCKE notes that he has used the drug for sore throats for many years with excellent results. In lues, diphtheria, and Vincent's Angina, QUINCKE still applies bichloride, but in all other forms of sore throat, and in those cases of lues, also, in which mercury is contraindicated, he has used a 2 per cent. solution of chloral, by means of a powerful spray. In the nose in diphtheria and other purulent processes a 1 per cent. solution in normal saline is used, while in ulcerative stomatitis, especially of mercurial origin, a 2 per cent. spray, or a 1 per cent. wash is of great value. This ensures mechanical cleansing, disinfection, and deodorization, and, following the initial burning, a decrease of pain. Chloral would thus appear to be an ideal agent for the treatment of angina, and may prove of value in other forms of inflammation of mucous membranes. — *The Therapist*.

Salol in Tooth-powder.

THE dangers of using tooth-powder in which salol is a constituent are drawn attention to in an article in *Le Lyon Medical*, as the result of an observation of DUBREUIL, who, states that he has met with several cases of labial eczema in persons who have used powder containing this drug. The decomposition of salol into salicylic acid and phenol sets up an irritation of the labio-buccal mucous membrane and of the skin of the lips. The writer goes on to remark that having regard to the frequent presence of the drug in tooth-powders and to the comparative rarity of labial eczema in the users thereof, the risks of contracting the condition cannot be very great. — *The Hospital*.

OPHTHALMOLOGY.

The Operative Treatment of Chronic Glaucoma

Other Than by Iridectomy.

A HISTORICAL COMMENTARY.

BY

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The history of glaucoma, and all that is connected with the disease, as we regard it to-day, virtually extends back but little over half a century. It is true that MIDDLEMORE, of London, suggested scleral puncture for the relief of grave affections of the eye, characterized by abnormal hardness of the globe and progressive loss of sight, about eighty years ago, and that the great Scotch clinician McKENZIE, actually made the operation in such a case about the year 1830. McKENZIE considered the measure only a palliative one. Indeed, glaucoma in any form was deemed incurable till the brilliant work of ALBRECHT VON GRAEFE, which began subsequent to 1885. GRAEFE's first antiglaucomatous iridectomy was made in 1856, and his classic and epochmaking reports on the working of iridectomy in inflammatory glaucoma appeared in the years 1857 to 1859. Little had been learned even as to the symptomatology of the disorder till the study was taken up by TAVIGNOT, the elder DESMARRES and VON ARLT, just prior to the discovery of the ophthalmoscope by HELMHOLTZ, in 1851. These three listed most of the symptoms. They failed, however, to include anæsthesia of the cornea, the signs and changes in the fundus and those relative to the visual and color fields. ED. JAEGER, ARLT's predecessor, in 1854, was the first to note the peculiar appearance of the optic disc, but, strange to say, made the mistake of taking the excavation for a mound, or swelling. About the same time VON GRAEFE

discovered the arterial pulse, and in 1855 he found that the disc was cupped instead of elevated as JAEGER had supposed. This same acute observer, in 1856, cited contraction of the nasal field as a characteristic sign of glaucoma. In the same year H. MUELLER called attention to the union between the peripheral portion of the iris and the cornea, though it seems that DONDEERS had made the same observation, *i.e.*, the obliteration of the iris angle, in 1855, attributing it to the hypertension of the globe. In 1868 VON GRAEF was already aware of the pernicious effects of mydriatics upon glaucomatous eyes, and employed the extract of physostigmin, or Calabar bean, to counteract the dilation of the pupil; while LAQUER, in 1876, was the first to recommend eserine for the same purpose. About the same time ADOLF WEBER, of Darmstadt, also discovered the miotic properties of this drug.

The operative measures for chronic glaucoma are divided into *intra-bulbar* and *extra-bulbar*. To the first, exclusive of iridectomy, belong the various forms of sclerotomy, posterior and anterior. During the twenty years subsequent to the interventions of Middlemore and McKenzie only posterior scleral puncture was resorted to though the elder Desmarres, about 1847, had cured a case of "inflammation of the aqueous membrane, of an intermittent character, with insupportable pain," by a simple paracentesis of the cornea, which was doubtless, in reality glaucoma. HANCOCK in 1860 on the theory that glaucoma was due to contracture of the circular fibres of the ciliary muscle, strangling the vessels and nerves, tried replacing iridectomy by division of this muscle, under the name *intra-ocular myotomy*. With a Beer's knife he made an oblique section beginning at the limbus, passing outward and backward, and engaging sclera and muscle, between exterior and inferior. There were several modifications of this procedure by other operators.

DEWECKER, in 1865, having studied the nature of the scleral scars following the operation of iridectomy for glaucoma, and having noted their porosity, was the first to conceive the idea that a filtration cicatrix was the essential thing in such surgery and that the excision of the iris was superfluous. Sclerotomy to replace iridectomy, however, was introduced by STELLWAG VON CARION, in 1868. But STELLWAG did not make sclerotomy after the idea of DEWECKER, *i.e.* to obtain a filtration scar; but rather to relieve what he imagined as regarded the malady in question to be the too great rigidity of the sclera, particularly as concerned the outermost fibres. He made a large, very oblique incision of the sclera, posterior to the corneal limbus. Among the many theories advanced to account for the high intra-ocular tension was

that of a low grade of inflammation of the sclera, with thickening and contraction of that tunic, especially of its outermost fibres, and to this was directed STELLWAG'S sclerotomy. He later fell in line with DEWECKER, and abandoned posterior for anterior sclerotomy. Then followed the different more or less ingenious modes of anterior sclerotomy. Prominent early originators in this field were DEWECKER, QUAGLINO and MAUTHNER who elaborated the technic, and popularized the procedure. In 1883, PANAS gave a method of anterior sclerotomy which he called *oulétomie*, specially destined, as its name implies, for incising the cicatrix in case of relapsing glaucoma after iridectomy, where adhesions and inclusions of the iris had occurred. This consisted in making the usual punctures with a very narrow Graefe knife near the ends of the remaining cicatrix, and so completing the section as to include the entangled iris and scleral scar, but leaving intact a narrow bridge of conjunctiva. At times he also divided the latter. DEWECKER made a similar operation which was named "cicatriscotomy." These two procedures might be named secondary sclerotomies.

It is highly probable that in all these primary, clean anterior sclerotomies that the paracentesis is the therapeutic factor, and not the peculiar manner of the incision. True the relief is always immediate, and often lasting. To filtration cicatrices we shall return.

Another form of intra-bulbar operation is that which concerns both the iris and the sclera. It might be a combination of sclerotomy and iridectomy, (sclero-iridectomy) as first made by the elder TERSON in 1885; or sclerotomy with incision of the iris, (sclero-iritomy) like that of NICATI, dating from 1892, and the *internal irido-sclerotomy* of VICENTIS devised in 1893, or, sclerotomy with tearing of the iris, (sclero-dialysis) first practiced by DEWECKER, in 1894, and CHIBRET'S operation made in 1897. This surgeon pushed a keratome or Graefe knife into the anterior chamber through a 3 or 4 mm. long wound canal, engaged the iris with the point and pushed on, making irido-dialysis. He would repeat this in different meridians, as many as 5 or 6 times. Some of these measures are not essentially different, as regards their effects, from the ordinary iridectomy, which is not under discussion. It may be permitted in passing to refer to one form of sclero-iridectomy, out of the ordinary, *viz.*, that of LOGET-SCHNIKOW, of St. Petersburg, first described in 1894. Here the excision of iris comprises but a tiny section at the extreme periphery, and it is destined as a sluice-gate only. As the cornea and sphincter are left intact miotics may be still employed to advantage. POPE made a similar iridectomy for optical purposes in 1871.

Other measures in this category, also, seem to act in a way quite different from the ordinary iridectomy.

On the principle that glaucoma is the result of *anterior retention* are based those operations whose object is the freeing of the union of the iris and the cornea in the angle of the anterior chamber, or of establishing communication between the contents of the anterior chamber and the plexus of SCHLEMM. To these belong VICENTIS' and NICATI'S incisions of the irien angle, and DeWECKER'S and other forms of irido-dialysis. TAILOR, in 1891-6, demonstrated by experiments upon the eyes of dogs that operations like that of Vicentis do put into communication the anterior chamber and the intra-trabecular spaces, and that they give access to the inter-fascicular spaces of the ciliary muscle when these also are engaged by the knife. Solution of fluorescein injected into the anterior chamber disappeared more quickly in the operated than it did in the control eyes; and, inversely, when injected into the veins the solution appeared earlier in the anterior chamber of the operated than in the unoperated eyes.

HERBERT and PRIESTLEY SMITH, in the last years of the 19th century and the first years of the 20th, believing that subconjunctival sclero-corneal fistula was the essential thing in operations for chronic glaucoma, made artificial incarceration of the iris to produce this fistulous scar. Their methods were something after the manner of the old irido-encleisis made by ADAMS in 1812, and that of HIMLAY, in 1843. HOLTH, of Christiania, Norway, averred, before the French Society of Ophthalmology, in 1906, that he had never observed a filtration scar after a correct iridectomy for glaucoma, but had seen it only in those instances where existed an incarceration of the iris in one of the angles of the wound, thus constituting the necessary filtration cicatrix. With this idea he made irido-encleisis in 127 cases of chronic glaucoma, and with results far superior to any he had obtained with classic iridectomy.

Trepanation of the Sclera, or Sclerectomy.—Still another form of intra-bulbar surgery for chronic glaucoma having for its object the much-sought-after filtration scar, is that by which a small portion of the sclera adjacent to the limbus is excised. Sclerectomy to lower intra-ocular tension was, I believe, first done by ARGYLL-ROBERTSON, in 1876, but the trepanation was here an equatorial one for absolute glaucoma. Recently such procedures have been rather extensively practised for chronic glaucoma by LAGRANGE, and ROCHON-DUVIGNEAUD, but nearly always in conjunction with a generous iridectomy. Still later, in 1908, HOLTH, just alluded to, not having been quite satisfied with his irido-encleisis, devised a modification of LAGRANGE'S sclerectomy. He now

makes a long, slanting, subconjunctival incision, with a lance keratome, as if for an iridectomy, from one lip of which,—more often the anterior one,—he removes a crescentic piece of the sclera, by means of a punch. He then makes a tiny, extremely peripheral iridectomy, after the manner of LOGET-SCHNIKOW, not for any therapeutic effect upon the glaucomatous process, but to prevent hernia or incarceration of the iris. HOLTH claims for his method greater freedom from such accidents as expulsive hæmorrhage, rupture of the zonule, and greater certainty of obtaining a true and lasting fistulous or filtration scar.

Cyclodialysis, or the establishment of communication between the anterior chamber and the supra-choroidal space.—This is yet another mode of intra-bulbar surgery for chronic glaucoma. A forerunner of the method may be found in an operation devised by CHIBRET, in 1883. This surgeon, in order to make a filtration scar, punctured the sclera very obliquely with a stoplance, entering the anterior-chamber through the angle of the iris. He re-opened the wound daily, for a period of three weeks, either by pressure massage over the cornea, or with the aid of a blunt instrument, which he poked through the wound. FUCHS found detachment of the choroid in about 10 per cent. of cases after iridectomy. In such instances the good effects of the operation are not apparent till after the subsidence of the detachments, which usually occurs in a few days. FUCHS thought these detachments were the result of tearing the uvea away from sclera at the iridic angle, permitting the aqueous to enter the supra-choroidal space. This, in turn, led AXENFELD, in 1903, to suggest this as an explanation of the benefit derived from iridectomy. This consideration caused HEINE, of Breslau, in 1904, to invent the operation of cyclodialysis. This consists in an attempt to make permanent communication between the anterior chamber and the supra-choroidal space. The good results which occasionally follow this procedure are probably due to freeing the angle of the anterior chamber and not to persistent choroidal detachment. It would seem that complications are more prone to follow this than most other operations for chronic glaucoma.

Extra-bulbar Methods.—Among the earlier surgical measures for the relief of chronic glaucoma, where the intervention did not directly involve the diseased eye itself, was *ciliary neurotomy*, introduced by MEYER and SECONDI, in 1870. Then optico-ciliary neurotomy, proposed by BOUCHERON, in 1876, for eyes blind from absolute glaucoma. Then followed stretching or elongation, and even the plucking out, of the external branch of the nasal or infra-trochlear nerve, originated by BADAL in 1883. None of these several procedures ever accomplished much more

than to afford relief from pain, temporary lessening of tension and other symptoms, hence, as true curative agents proved but illusory.

On the theory that the ciliary ganglion regulates the circulation of the anterior segment of the eye, ROHMER, in 1902, tried extirpation of this body, by Kroulein's operation, in painful absolute glaucoma. The pain was relieved but not the tension. Ciliary neurotomy would have accomplished the same result in a simpler manner.

ABADIE, of Paris, in 1897, inspired by the theories and experiments of Wegner, which dated from 1866, and assumed that glaucoma was due to hypersecretion of liquid within the eye induced by vaso-motor excitation, conceived the idea that ablation of the superior cervical ganglion of the great sympathetic nerve would be an advantage in the treatment. But it was JONNESCO of Bucharest, in 1898, he of stovain-cocain fame, who made the first sympathectomy for this purpose. This operation has since been rather extensively resorted to in various parts of the world, but, while the results have been in a measure effective, they have been, on the whole, far from brilliant, and disaster and even death have been known to follow; and whatever was gained by the measure has most often been dissipated by time.

Electricity.—Both the galvanic and the faradic currents have been brought to serve as agents in the extra-bulbar treatment of chronic glaucoma. As in sympathectomy, on the principle that chronic glaucoma is the result of vaso-motor excitation, ALLARD, in 1899, had the idea to modify this excitability by the application of a strong galvanic current to the sympathetic nerve. He employed a negative electrode whose surface was 300 square centimeters in area applied to the nape of the neck, and a positive in the form of a strip of metal 8 or 10 inches long and one centimeter wide placed over the furrow corresponding to the anterior border of the sterno-mastoid muscle. The current was from 15 to 20 milliamperes, and of an electromotive force of 20 volts. The applications were for 15 to 20 minutes 3 times a week till 15 to 20 treatments were given. The results were reported as most satisfactory.

In cases of simple, chronic glaucoma, with marked optic atrophy, both the faradic and the combined currents have been applied to the lids of the affected eye, sometimes with apparent benefit.

Malaxation or Massage.—Digital massage was first proposed, in this connection, by SCHENKL and KLINE, in 1882, and first methodically executed by DIANOUX, in 1883, but in conjunction with anterior sclerotomy. The manipulation tends to retard healing of the wound and to render the cicatrix more permeable. Later, in 1899, the practice was revived by

DOMEC, of Dijon, and others. This sort of massage consists, in the main, of pressure, by the thumb over the center of the cornea, through one or the other lid. It is performed daily in sittings lasting from one to five minutes, preferably after puncture of the cornea, but sometimes without previous surgical interference; always, however, in conjunction with miotics. In some instances the massage is begun on the day of the operation—in others it is delayed for several days, or till after closure of the wound. By pressure massage over the center of the cornea one expects to get dilation of the vessels and excretory channels around the rim of the anterior chamber, whereas, by pressure on the sclera the lens and the iris are forced forward and the tendency is to narrow and block said channels.

Subconjunctival Injections.—These have been made in chronic glaucoma just as they have in diseases like irido-cyclitis, detachment of the retina and others, the supposed effects being osmotic, counter-irritant, antiseptic, lymphagogue, etc. Weak solutions of sodium chlorid undoubtedly aid in restoring normal tension in an eye that has become too soft from traumatic uveitis. Whether or not they would work the other way in a glaucomatous eye the writer cannot say. Of late, THOMAS and FISHER, of Oakland, California, have reported cases of glaucoma treated with marked benefit by subconjunctival injections of sodium citrate solution. Their theory is that glaucoma is essentially an œdema of the eye-ball caused by the presence in the globe of substances, like acids, which increase the affinity of the tissue colloids for water. The sodium citrate, we are told, is most potent to counteract the influence of the substances that increase said affinity, hence its efficacy in reducing the intraocular tension.

Choice of Operation.—Of all the surgical procedures here under consideration, unfortunately none can be regarded as a cure in the true sense of the word, that is to say, as something that strikes directly at the cause of the morbid process, but merely as a means of counteracting the most conspicuous symptomatic factor of this process, *viz.*, the hypertension. To combat this successfully is, at present, about all that one can hope to accomplish. To this end then it would seem that of the various measures we have mentioned those which consist either wholly or in part of some form of anterior sclerotomy promise most for the victim of chronic glaucoma. As before stated, the simplest of these gives at least temporary relief. The question then is how best to make the relief from this source most lasting. Shall it not be by importing a certain permeability to the resulting cicatrix? Most likely.

The Filtration Scar.—What are the features most desirable in such a scar? Surely something other than permeability alone. A cystoid

scar may be salutary or malicious according to its size and its anatomical constituents. If of proper proportions and make-up it may serve to maintain the equilibrium of tension without becoming a menace to the eye. If progressively large and the uvea be too greatly involved it becomes a source of irritation and danger. HOLTZ makes a distinction between a *filtration scar* and a *fistulous scar*. The last is the more permeable but, in that it usually means an incarceration of the iris, its capacity for harm may overbalance whatever properties it possesses for good. It may even reach the stage of calling for surgical intervention on its own account. A serious drawback common to both forms of cystoid scar is that they offer a vulnerable point for the entrance of pathogenic bacteria. The kind most devoutly to be wished is, perhaps, one of moderate size and porosity, situated at the very outermost limits of the sclero-corneal junction, loosely covered by healthy conjunctiva, and without involvement of any portion of the uvea. It is possible to obtain such a scar by a simple incision, especially if followed by pressure massage over the cornea. It is also possible by the incision combined with excision of a part of the sclera at the site of the wound, and the omission of the massage. Untoward consequences are less to be dreaded after these methods of antiglaucomatous surgery than most others. Grave complications like detachment of the choroid, rupture of the zonule, explosive choroidal hæmorrhage and malignant glaucoma, not uncommon after iridectomy, are almost unknown in relation to these operations. Moreover, if one fails in his object by a single intervention he is not only justified but actually called upon to repeat the operation—even again and again if necessary.

In conclusion a few words of caution are deemed fitting. In no case, for instance, should one think of resorting to an intra-bulbar operation for chronic glaucoma if by the use of miotics and attention to the general bodily condition the tension of the eyes could be kept within normal bounds. As regards the best means of keeping in touch with the degree of the intra-ocular tension ophthalmologists are rapidly learning that palpation is not to be relied upon, but that the intelligent employment of the tonometer is a prerequisite.—*The American Journal of Ophthalmology*.

The Adverse Influence of Diabetes in Certain Operations on the Eye.

CHARLES STEDMAN BULL says that it is well known that operations on the eyes of patients with advanced diabetes have been followed by fatal results, the patients dying in coma. During the

coma the urine is usually free from sugar, even if it has been abundant prior to the attack. The coma may set in within twenty-four hours after the operation, or it may be postponed for several days. In some of the cases which were followed by unfortunate complications, the diabetes was accompanied by gastrointestinal symptoms and by enlargement of the liver, but the latter gradually subsided. It is probable that the pancreas was also diseased in these cases, as chronic pancreatitis is of very frequent occurrence in chronic diabetes. A prolonged and close observation of the cases under his care, which were followed by various complications, seemed to offer evidence of a greater deficiency of fermentative action than in other cases free from these complications. Whether psychic, nervous, or organic influences were originally at fault in these cases, it was evident that the prognosis for operation was more unfavorable, the more marked was the defective metabolism of the carbohydrates. Whether this failure of fermentative action in these cases occurs through the blood current and tissues of the body, or in the digestive tract, we do not yet know. It is not wise to introduce a strict antidiabetic regimen in a patient immediately before operating, especially if the patient has not been accustomed to it. On the other hand, such a regimen, to which the patient has for a considerable time become accustomed, should not be interrupted at the time of operation. In other words, any change from the general routine of nutrition should not be made in any patient immediately before the operation. The complications which have occurred in his experience after operations on diabetics, have been mainly either iritis, hæmorrhages into the anterior chamber, or an infection of the wound as manifested by slow healing. In the cases of iritis, there was a marked maceration of the pigment epithelium of the iris, a fact long since pointed out by SNELLEN. He has also noticed a rather marked tendency to infection by micro-organisms after operations on diabetics, and it is known that this has been observed in other branches of surgery. In view of these facts it would seem wise to have tests made of the bactericidal power of the blood serum in diabetes. BULL gives an analysis of 115 cases, and concludes that we must carefully distinguish those diseases which are directly due to diabetes as a cause from those which may occur independently of the disease. The abnormal products of metabolism, acetone, diacetic acid, and oxybutyric acid seriously complicate the prognosis, and must, as far as possible, be eliminated before any operation is undertaken. Arteriosclerosis plays an important role in the ætiology of the disease and its complications. The prognosis does not depend on the percentage of glucose in the urine, but on the degree of acid intoxication. The possible connection between diabetes and

tuberculosis needs more searching investigation before any positive opinion can be formed.—*The American Journal of Ophthalmology*.

PÆDIATRICS.

Common Errors in Infant Feeding.

BY

ERIC PRITCHARD, M.A., M.D., M.R.C.P.

Errors in the feeding of infants, and the catastrophies that follow, are by no means confined to artificial methods. During the first few days of the puerperium the mammary secretion, or colostrum, is extremely scanty. It is non-stimulating, non-coagulable, and yet adequately nutritious for the requirements of the nursling. In fact it is exactly the food that on theoretical grounds ought to be supplied to the small, sensitive, and undeveloped stomach. The sugar which it contains is capable of immediate absorption without alteration in the digestive tract. It is dextrose and not lactose, by which it is replaced on the establishment of full activity of the mammary gland. Before lactose, which is a polysaccharide sugar, can be absorbed, it must be digested or split up into its mono-saccharide components—dextrose and galactose—by an inverting ferment (invertin). At birth this ferment is not present, or exists only in minute traces.

The chief function of the fully developed stomach is to act as a reservoir for solid food, and to co-operate with the masticatory organs in disintegrating and rendering it soluble. The pyloric sphincter acts as a guard to the intestines, and prevents large particles from gaining access to the highly sensitive mucous surface of the duodenum. At birth the pylorus is extremely sensitive, and liable, especially in spasmophilic subjects, to become forcibly and tonically contracted when solid particles attempt to force a passage. For this reason Nature provides the new-born infant with colostrum and not with milk, for the former, unlike milk, is non-coagulable. The transition from colostrum to coagulable milk is slow. It may be 10 days or more before the mammary secretion becomes a true milk. During this time the stomach has been functionally developing, acquiring tolerance for coagulated casein, and learning to peptonise or liquefy it. Attempts to evade or short-circuit this route lead to disaster. Hence new-born infants started on the statutory mixtures of 1 part of milk and 3 of water, or on the most approved percentage combinations, often fail. Undue stimulation of the stomach by excessive quantities of diluted milk causes hypertrophic stenosis of the pylorus.

Bad results can be avoided by providing the new-born infant with a food which physically resembles colostrum, and it is to this that proprietary foods owe their popularity. Allenbury food No. 1, for instance, is admirably designed as a substitute for colostrum; it is pre-digested, non-coagulable, non-irritating, and adequately nutritious. But the very features that make it so excellent a substitute for colostrum render it a bad substitute for human milk. No such pre-digested, non-coagulable food can develop the digestive functions of the stomach and alimentary tract. Nature does not provide the infant at or about the tenth day of life with a coagulable food like milk without a good reason. She does not give a liquid food by the mouth and render it solid in the stomach a few minutes later without design. The reason, of course, is to gradually train the stomach to liquefy solid food before the stage of weaning arrives, when the infant often has to subsist "on the same food as we eat ourselves." The writer does not recommend Allenbury No. 1 or any of its congeners as a substitute for colostrum. He thinks there is no better food for the new-born than simple undiluted whey prepared on the ordinary domestic plan from fresh milk and rennet, or more economically, and just as well from separated milk. It is non-stimulating, non-coagulable and adequately nutritious. Further, digestive training may be ensured by adding slowly the elements which develop the functions of the stomach—a coagulable proteid such as caseinogen and an emulsified fat such as cream. The method is extremely simple and the results highly satisfactory.

Cases of wasting and dyspepsia due to disregard of the teaching of the colostrum period are common in hospital practice. Infants who have not learnt to digest mother's milk are suddenly confronted with the still more indigestible milk of the cow. In private practice wasting infants are often seen who immediately after birth have been submitted to a wet nurse in full lactation. If the healthy infant cannot short-circuit the colostrum period how much more improbable is it that a delicate infant can dispense with simple lessons in digestion, and learn to run before it can walk!

No new-born baby should be provided with a wet-nurse until it has served an appropriate apprenticeship, such as described, on an artificial substitute for colostrum. The fact that a few babies manage to "muddle through," is no argument against the more scientific methods. An infant can be taught to digest almost any food, provided that sufficient time be given and the stages of immunisation adequately graduated. All artificially fed infants should be taught to digest cows' milk, and genuinely refractory cases are rare, but sometimes the necessary steps to secure

this end are slow. For instance, if a baby has been brought up for 3 months on Allenbury No. 1, it may take a month to teach it to digest a diluted cow's milk appropriate to its age, but the lesson can always be learnt if at first a few drops, say 5, of cows' milk are added to each bottle, and the subsequent increments are correspondingly minute.

Another class of mistake is made in the quantities of food supplied to infants. In artificial feeding such mistakes are common, but owing to recent improvements in technique they are insignificant compared to the mistakes made in breast feeding. In nature there is some co-ordination between the supply of the mother and the demand of the infant. The strong, healthy infant, by reason of its active powers of sanction, affords the appropriate stimulus for a parallel activity of the secreting gland, while the feeble infant excites little reaction. BUDIN showed that while the weakly nursling may not be imparting sufficient stimulus to keep a mammary gland in active secretion, a single wet-nurse can successfully feed 4 or 5 infants by reason of their united efforts. But Nature does not always pursue the perfect way, and in many cases there is no co-ordination between the supply and the demand. Sometimes there is too much milk, sometimes too little. Apart from the physiological test, namely, the progress of the infant, the only means of ascertaining whether an infant receives enough or too little milk is what the writer terms the "test-feed"—weighing the infant before and after feeding on very accurate scales. The amount consumed is the difference in the two weights. This test can be confirmed in some degree by noting the amount of urine excreted, and by the character and quantity of the stools. Further, the size of the breast before and after feeding affords some index of the amount of milk abstracted. But these tests are not reliable.

The following case illustrates the kind of mistake that can be made by experienced people, and the great value of the weighing method. A baby was seen on Jan. 17, 1907, for obstinate constipation and loss of weight. The mother had been confined on the 4th at a well-known maternity institution, and the infant had been put to the breast regularly ever since. At birth it weighed 7 lb. 10 oz.; it now weighed 6 lb. 14 oz.—a loss of 12 oz. in 14 days. Though somewhat thin it was in good condition, had a good colour, and had never been sick. The writer suspected under-feeding, but was surprised to find the mother's breasts well developed, and affording the usual stream of milk on compression of the nipple. A test-feed was made: after waiting 2 hours since the last feed, the infant was put to the breast. The scales proved that it obtained less than 2 teaspoonfuls of milk. The writer therefore ordered

the mother to give 1 oz. of whey and 20 drops of cream alternately with breast feedings. During the following 6 days the test-feed showed that the amount of breast milk did not increase, but the infant recovered part of the loss in weight, for on the 24th it weighed 7 lb. 4 oz.—a gain of 6 oz. The whey and cream mixture was increased to 1½ oz. of whey and 30 drops of cream, and the mother was encouraged to preserve with breast feeding. On the 28th half a pound in weight had been gained, but the test-feed still proved that this was not due to breast feeding, for the infant abstracted only one teaspoonful of milk from the breast. On Feb. 4 the infant had gained a further ½ lb., but now the test-feed proved that it was obtaining a full amount (3 oz.) from the breast. The whey mixture was consequently suspended, and the infant made uninterrupted progress.

This case shows that with patience and perseverance an apparently non-active breast may ultimately secrete a good supply of milk provided that the infant can supply the necessary stimulus, and that the psychological factor is called into requisition. Encouragement on the part of the doctor and confidence on the part of the mother are most important.

Infants are frequently artificially fed under the belief that the breast milk has "dried up" on the fourth or fifth day. This mistake is made even in maternity wards. There is no criterion to show whether a woman is capable of ultimately secreting a good supply of milk or not. Further, as has been shown, only by the test-feed can it be ascertained whether an infant extracts a small quantity of milk from the breast or not. During the colostrum period, which often extends over 10 days, the secretion of the mammary glands is usually limited. The milk is often thought to "dry up" on the third or fourth day because the breasts, which have previously been hard and congested, often become soft and smaller owing to the resolution of the gland-cells into the colostrum secretion, which is extracted by the infant, and not always immediately replaced.

This mistake is well illustrated by the case of an infant born in Aug. in a maternity. It was brought to the writer at the end of Nov. bottle-fed and doing badly. The mother said that her milk disappeared on the fourth day, and that the authorities in the maternity told her to bring the infant up on the bottle. But in order to avert a second pregnancy she surreptitiously put the infant to the breast at night. She thought the practice was of no advantage to the infant, as she had no milk. But a test-feed showed that the infant had extracted from the breasts 3 oz. of milk. Suspension of the artificial feeding was ordered and the infant at last flourished on the breast.

Since systematically adopting the test-feed the writer has modified many of his views. He finds that among breast-fed infants it is not those who are inadequately fed according to accepted data who suffer from malnutrition, but for the most part those who receive an adequate or an excessive amount. In many cases the infant has thrived and maintained a good weight curve on a half and sometimes on a third of the quantity of milk that should be prescribed according to scientific criteria. Often an infant of 3 or 4 months is fed 10 times in the day, and obtains only from 1 to 1½ oz. of milk at a feeding, or about 12 oz. in the 24 hours. But in spite of the apparently good nutrition of such infants there are advantages in increasing their metabolism. Vigorous metabolism is a clear gain. A starvation diet of this kind is not calculated to promote active nutrition, active digestion, or good reserve powers of metabolic accommodation. When the test-feed proves that an infant is apparently maintaining its nutrition on a manifestly low diet the writer always supplements the defective supply with additional feeds from the bottle. Incidentally, the ordinary methods advised for increasing the breast supply itself are not encouraging, but full doses of iron, in the form of Bland's pills, distinctly improve both the quantity and the quality of the milk.

When supplementary feeding from the bottle is necessary owing to a deficient supply of breast milk, the test-feed is a guide to the quantity that should be given. An infant 5 months old, and accustomed, for instance, to 2 oz. of breast milk at a feeding, would be upset if the statutory allowance of 4 or 5 oz. of modified cow's milk were supplied from the bottle. The normal allowance should ultimately be arrived at, but only gradually. Many infants have their digestive and metabolic processes disturbed from neglect of this precaution, and the same is, of course, true when, at the time of weaning, artificial feeding is substituted for the breast.

Errors with respect to the quality of food are equally serious. The American methods of percentage feeding have shown that many symptoms, both digestive and nutritional, are due to mistakes in the qualitative "make up" of the food. In this country we have been slow to appreciate the advantages of the method. In Germany new interest has been given to accurate infant feeding by the work of CZERNY, KELLER, and FINKELSTEIN, and the coining of a new word, "food-injury," for the damage due to normal constituents in the diet has done much for the cause. The food-injuries of CZERNY—fat-injuries and proteid-injuries—are the old fat, sugar, and proteid dyspepsias of ROTCH and HOLT, but writ large

The injuries to the new-born due to giving proteid in the digestion of which it has not been trained have been pointed out. If proteid owing to excessive quantity, is not digested normally in normal situations, it is digested abnormally in abnormal situations by bacterial agencies, with toxic results. Bacterial infections, perhaps of autogenetic origin, dominate the situation when there is excess of nitrogenous food in the bowel. Parasites always congregate where they can live; where the carcase is, there are the vultures gathered.

But apart from excess of proteid the influence of foreign, or new forms of proteid on the infant, must be reckoned with. Despite the brilliant work of EMIL FISCHER and his school, there are whole classes of albumoses about which little is known. It is almost certain that many of these occur in human milk, and perhaps to a less degree in cow's milk, and that some of them are toxic. The milk of menstruating women and of epileptics is generally toxic, and has proved actually fatal to the suckling. Breast-fed infants often present severe toxic symptoms although nothing abnormal can be detected in the quantity or quality of the milk; and they subsequently progress normally on cow's milk modified to the same chemical standard.

Vomiting in infants nearly always represents a food-injury, but is more often the deferred result of some initial mistake than due to the method of feeding in force at the time. The habit of vomiting is easily acquired; it becomes, in fact an automatic reflex so sensitive and so insistent, that, no matter what the food, it is rejected with a persistency resembling the rumination of the cow. Infants who have acquired this habit from injudicious feeding when the nerve-centres are plastic and impressionable are unavailingly treated by changes in the diet or by bismuth and soda. The scientific method of treatment is to break the automatic nature of the habit by temporarily exhausting the centre, or by dulling its sensibility to stimuli from the stomach. For the latter purpose chloral, bromide, or chloretone are useful. When the habit is broken the drug may be suspended. The writer has tried a method of exhausting the centre with encouraging results. A harmless emetic, such as vinum ipecacuanhæ and carbonate of ammonium is given about half an hour before feeding. After the violent stimulus of the emetic the stomach fails to respond by vomiting to the milder stimulus of food.

For diarrhoea, treatment is often the reverse of scientific; it generally consists in giving mixtures of bismuth, chalk, and opium, and in changing the food from milk to a thin paste of arrowroot and water given

frequently and in small quantities. Diarrhoea usually represents a protective reaction to relieve a wounded organ, namely, the intestine, of the peccant material. A wounded intestine ought to be treated like wounds in other parts—by asepsis, and by rest. As long as food is taken the intestine cannot be at rest, neither can it be in a relatively aseptic condition. The treatment of acute diarrhoea by irrigation of the bowel with large clysters of very hot water, by the suspension of all food for 24 hours or more, and by the exhibition of opium and brandy is so successful that it is difficult to understand why any other should be adopted.

Chronic diarrhoea, in which the stools contain milky-white particles of what is popularly supposed to be the undigested casein, is usually treated by suspension of milk, and by the substitution of some other sort of food. These white particles are coiled-up flakes of mucus, and represent a deferred lesion due to a food injury. This can be proved by picking out a few of the most characteristic pieces and by teasing them out in water, when flakes of mucous or mucons membrane will be found. When such particles appear the condition is chronic colitis, and as such it should be treated not necessarily by suspension of milk.

In the early days of percentage feeding increasing percentages of fat was considered the rational treatment of chronic constipation instead of aperients, enemata, and glycerine suppositories. HOLT pointed out that undue increase in the percentage of fat was calculated to produce fat-dyspepsia (the fat injury of FINKELSTEIN). These fat injuries are quite distinctive and common among the infants of the well-to-do. The writer always treats chronic constipation with a petroleum emulsion. It acts purely mechanically; it lubricates the bowel, softens the motions, cannot be absorbed, and never produces any injuries or symptoms. This emulsion combined with skilful massage of the colon is the best remedy for this intractable condition.—*The Medical Review*.

THE ANTISEPTIC.

APRIL, 1910.

The "Independent Medical Profession" and the Abkari Department in Madras.



ORD MORLEY has written to the Government of India to encourage the growth of an independent medical profession in this country. We do not know what reply the Government of India have given to the Secretary of State to that recommendation. But we know that since the beginning of this month the Abkari Department of Madras has been on the war path about the possession of cocaine by some of the independent medical practitioners of Madras. We wrote on this subject in July 1906 and again in June 1907. Our readers might remember that in June 1907 we protested against the proposal of the Board of Revenue to exclude Hospital Assistants in private practice from the category of qualified medical men while including Hospital Assistants in Government employment among qualified medical men for the purposes of the cocaine regulations. Even the Madras Government remarked on that proposal of the Board of Revenue thus:—"The definition of a qualified medical practitioner is so framed that Assistant Surgeons and Apothecaries and Hospital Assistants who are not graduates in medicine and who are not in Government employ will not be able to prescribe cocaine at all without a prescription being countersigned by the District Medical Officer. The necessity for this rule should be fully explained." And the full explanation for the necessity for the rule was that the Surgeon General wanted it. Well, that was in June 1907. We heard nothing more about the subject till a few days ago. From June 1907, till April 1910, Hospital Assistants in private practice in Madras were prescribing cocaine, and such of them as have dispensaries were selling cocaine under licenses. From this we came to the conclusion that the Madras Government had decided not to put into practice the proposals of the Board of Revenue which manifested such invidious distinction between medical men in Government employ and the same class of men in private practice. But all of a sudden, from the commencement of the present official year, the Abkari Department has commenced to enforce the rules framed by the Board of Revenue

most rigidly, with the result that many Hospital Assistants in private practice are now prevented from prescribing cocaine or selling it.

We have protested against the rule and explained our views on the question fully in these columns in June 1907. We do not want to go over the same ground again now. All that we want to say now is this—that a rule which places a private medical practitioner at a disadvantage as compared with the same class of a medical man in Government employ, and which has been hibernating in a passive state for nearly two years, should all at once be roused to a state of active vigour within a few months after the receipt of a despatch from the Secretary of State exhorting the authorities in this country to encourage the growth of an independent medical profession appears to us to be of the nature of a practical joke. Is the Abkari Department pulling LORD MORLEY'S legs?

We understand that the Hospital Assistants in Madras have held a protest meeting and passed resolutions. Well, that is a beginning. But, if we may advise the private Hospital Assistants and others who are affected by these regulations, we would ask then to get printed in parallel columns the 'Independent Medical Profession' despatch of LORD MORLEY and the Cocaine Regulations of the Madras Board of Revenue and present a copy to LORD MORLEY. We understand that some of the private Hospital Assistants are going to England soon. Why not they form a deputation and wait on the Secretary of State? LORD MORLEY is a philosopher. But we are certain that his Lordship will enjoy reading the Cocaine Regulations of the Madras Board of Revenue. Who knows that LORD MORLEY may not delegate the task of developing an independent medical profession in India to our Abkari Department?

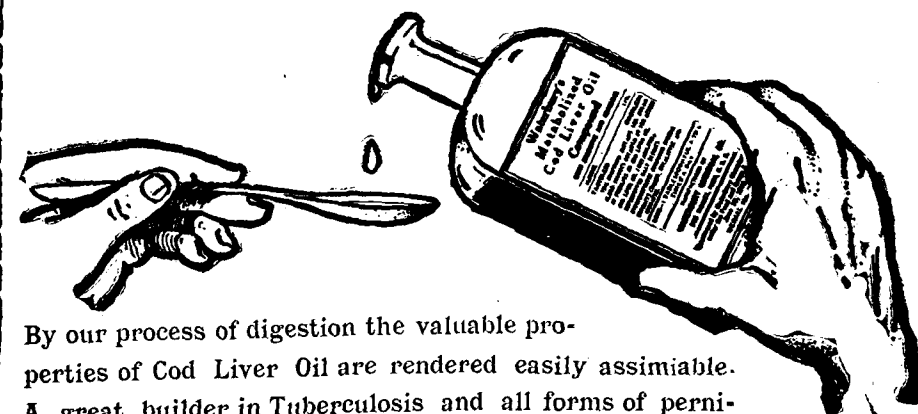
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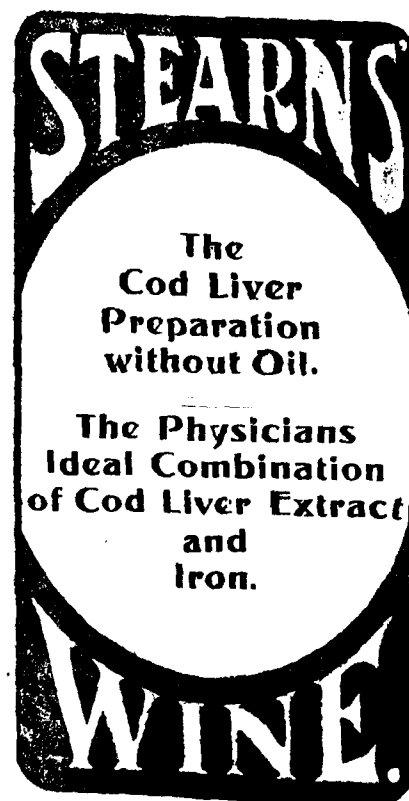
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