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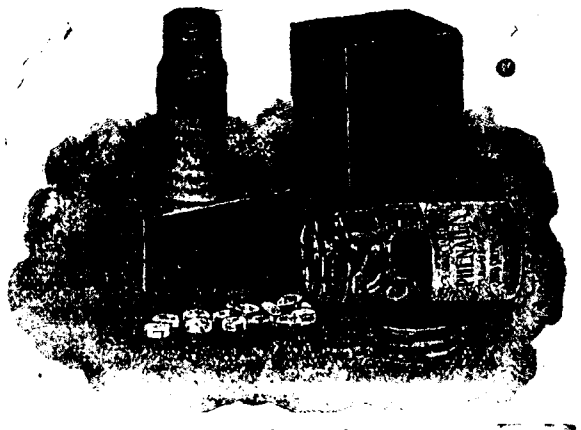

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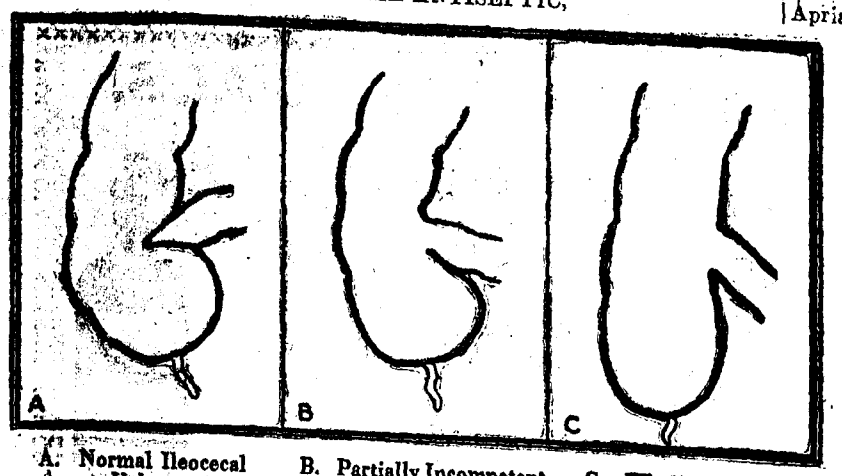

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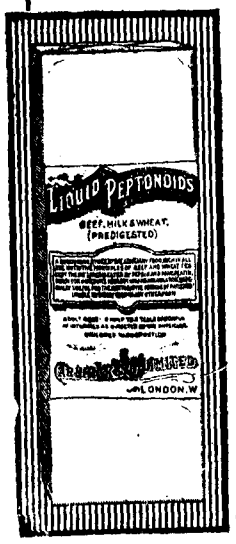

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The Antiseptic

Vol. XXII No. 4. | APRIL, 1925. | ANNUAL SUBSCRIPTION Rs. 5

ORIGINAL ARTICLES.

* CONSERVATION OF VISION, WITH SPECIAL REFERENCE TO THE EYE SIGHT OF SCHOLARS IN VARIOUS INSTITUTIONS

By

KHAN BAHADUR DR. TASADDUQ HUSSAIN, L.M.S. (Cal.), M.D. (Brux),
OPTHALMIC SURGEON I/C. EYE HOSPITAL, AGRA; LECTURER ON OPHTHALMOLOGY, MEDICAL SCHOOL, AGRA; FELLOW OF THE ROYAL SOCIETY OF MEDICINE, LONDON; MEMBER OF THE OPHTHALMOLOGICAL SOCIETY OF UNITED KINGDOM; MEMBER OF THE OPHTHALMOLOGICAL CONGRESS, OXFORD.

AUTHOR OF "AN OPERATION FOR CATARACT WITH AN ANALYSIS OF 1,000 CONSECUTIVE OPERATIONS."

PART 1.

Public health is purchaseable and the only purchase price that is demanded is the effort made in securing the knowledge of prevention of diseases. In the field of conservation of vision this truth is fully accepted and it is believed universally that correct knowledge of the means of avoiding harm to the eyes is the surest means of preserving sight. It is absurd to think that any parent is willing to let his child go blind if he knows the conditions that will inevitably bring on this calamity, and knows the means of prevention. The knowledge of the fact that half of all blindness in the world is preventable cannot but rouse one's emotions. Therefore the movement for conservation of vision is to-day an educational movement

*Specially contributed to the Antiseptic.

concerning itself with bringing to the notice of the public the knowledge of the specialist in saving sight, which is a matter of public, as well as personal, interest. "To accomplish this education of the public, recourse should be had to the newspaper, the popular magazine, printed leaflets and all the other devices of advertisement." (American Encyclopædia of Ophthalmology).

Ophthalmia Neonatorum has blinded thousands of babies, while progressive myopia, sympathetic ophthalmia, interstitial keratitis, ocular tuberculosis and eye troubles following small-pox and measles have blinded a still greater number. Trachoma attacks both child and adult. It thrives in ignorance and neglect. Glaucoma in adults comes on insidiously and the warnings of its approach are neglected because unrecognised.

In schools, in industries, in the home, eye-strain is endured without consideration of its calamitous effects, yet blindness from all these causes is preventable. I wish I could do something to educate the public at large in India on this preventable blindness.

According to the census of 1921, there are 72,708 young men (below the age of 20) completely blind with both eyes in India.

The total number of blind men in the United Provinces alone is 1,05,072.

While the blind in India numbered 443,653 in 1911, the number in 1921 was 479,637, that is, instead of decreasing, it increased by 35,984.

Let us do something more than what we have hitherto been doing to prevent our countrymen from getting blind.

Imagine the hardships they undergo, the incalculable sufferings they endure, and the loss to the country they cause, and all this simply because of lack of knowledge of the easy common means that could prevent the calamity of all such blindness. In some cases only a few days neglect results in a life time of misery.

We would be merely discharging our duty towards our fellowmen if we spread such knowledge. But in the barren field of colossal ignorance that surrounds us, our efforts are not likely to fructify unless helped by other and more powerful agencies. The Public Health Department can do a lot to banish the ignorance on the subject. The Provincial Councils should move in the matter and legislate, if necessary.

In this connection, it is interesting to note that in America, the National Committee for the Prevention of Blindness is engaged in this work of educating the public. It prepares popular literature, publishes it or furnishes the material for articles to magazines, newspapers and to individuals. It provides a lecture service by its own staff or other public spirited member of the medical profession. Superintendents of schools for the blind in Europe, who are in a position to know

how much preventable blindness costs the individual and the State, have been active in the task of spreading the knowledge of possible prevention of blindness. For years, the publications of the schools for the blind, have included directions for prevention of needless blindness. In America, Societies, Committees, State Commissions and interested individuals have undertaken not only educational work but remedial efforts. An example of the sort of service that may be rendered is shown in the admirable "Follow up" work done in Boston, through the co-operation of several organisations. A case is reported by an agent of the Commission for the Blind, by a doctor, or by a nurse, to the Board of Health. The Board sends a city nurse to investigate. If necessary, the child (and sometimes the mother with the child) is removed to the Eye Infirmary for treatment and care, while the hospital, through its "Social Service Department" helps the mother, and visits the family *after* the discharge of the child from the hospital in order to see that the directions of the doctor are carried out. This kindly care is kept up until the result aimed at is attained *i.e.*, the sight is restored to the patient:—

Errors of refractions with which most children are born are responsible for a large percentage of blindness.

It is unfortunate that the advancement of civilization in the world should be taxed with proportionate increase in the extent of short-sightedness.

Myopia is getting far more common in India now. This is due to children having got to do much finer work commencing at an earlier age. To show the effect of school life upon the eyes, the following percentage of Cohn, a German Ophthalmologist, who made extensive researches, are of interest:—

	Percentage of Myopia Found.
In Village schools	1·4%
„ Elementary schools	4·7%
„ Higher schools	10 %
„ College students	59·5%

His conclusions demonstrate that the number of myopic pupils increases from the lowest to the highest schools, and the longer the time that is devoted to the studies of school life, the greater is the increase.

On account of their poor vision, myopic boys are greatly handicapped in many ways. They manifest a strong distaste for all out-door sports in which sharp vision is a requisite, and acquire a marked predilection for indoor occupations—a taste which is very unfortunate for them as it adds further to their ocular deficiency.

In consequence of their inability to note the expression of those with whom they come in contact, the myope often develops an abstracted and

even a stupid expression of countenance, and exhibits a degree of shyness not so frequently seen in those with normal vision.

" Children who have defective eyes cannot, unless relieved, receive any profit by school eduation. They are often behind their class, sometimes remaining in one class year after year, an exasperation to their teachers and discouragement to themselves. Unless relieved by glasses and rendered fit for study, they are regarded as mentally deficient and morally vicious, become personally disheartened and truant, drift into bad society, commit small and then greater crimes and eventually may be seen in asylums, institutions and prisons " (American Encyclopedia of Ophthalmology). " One need not " says the ex-chairman of the Ophthalmic Section of the American Medical Association, " hesitate to say that every Board of Health and Board of Education is committing a moral and social crime, if they do not insist upon the annual systematic examination of school children's eyes."

In United States there were examined 20,000,000, public school children, and it was found that one-fourth of them had one thing or other wrong with their eyes.

In Agra, I examined 3,000 school boys in various local schools. The following is an account of the eye-sight they possess without glasses. Only 40 of them were found wearing glasses. Of the remaining 2,960 only 1,063 have standard vision, and 599 having abnormal vision, and 1,298 boys with seriously defective vision are without glasses.

This number does not include those who on the day of my examination were absent on account of some ailment including eye diseases. I have not examined all the scholars in Agra, but the few that I have examined show that the percentage of defective eyes including minor defects (liable however to lead to grave consequences) is 64·56 in schools.

There are about 9,000,000 scholars in India this year, and number of scholars in our provinces last year was 63,478 in female institutions and 953,364 in male institutions, the total being 1,016,842 scholars in the United Provinces. Applying the same percentage in order to get a rough idea, I fear there may be as many as 58,10,400 scholars in India and 656,471 in our provinces respectively who have more or less defective eyes. All these scholars without exception should be examined by an Eye Specialist for treatment of their present defects and prevention of future complications. There are three Eye Hospitals in these provinces, which on an average treat about 200 in-patients, 400 out-patients and have ten operations done daily. They cannot possibly find time to examine such a huge number of school boys.

Then comes the problem of young children and boys travelling long distances to these three centres of sight examination. There are some ignorant parents who could bring their children for consultation but would not do so. There are others who would do so, but their purse does not permit them.

I can only appeal to the authorities to do someting to help such boys. I know that stringency of funds prevents them from establishing a " Follow up " system, free supply of spectacles or "compulsory examination of sight" before admission to Primary schools, as is done in richer or more civilised countries. But I will take the liberty of suggesting the appointment of at least one Ophthalmic Surgeon in each province under the department of travelling dispensaries, who would travel from school to school with a tent dark room, and electric ophthalmoscope, throughout the province, to examine the sight of school children at Government expense. The expenditure involved cannot be called a very big item, seeing that last year the number of institutions was 21,752 and the expenditure on them Rs. 2,91,44, 794 in the United Provinces.

One will feel regret that so many of our scholars should have something or other wrong with their eyes, and be thus exposed to grave consequences as regards the welfare of their eyes and vision. But one will feel consoled to some extent when I give the following from the American Encyclopaedia of Ophthalmology.

" The great importance of the faulty condition of the eyes of school children is obvious when it is known that normal eyes are comparatively rare. Extensive and careful examination of a large number of growing children both in Europe and America having shown, that only from 10 to 12 in every hundred are born with normal eyes, the remaining 88 or 90 have defective eyes, and about 60 in every 100 of such defective eyes, are defective enough to cause pain, to lower the sharpness of vision and to imperil the health of the eye during the progress of the school life."

The appointment suggested is still more necessary for the fact that in no department of school work is there more prejudice to contend against than in that of refraction. Many children who suffer from errors of refraction are unaware of the fact. Glasses are an expensive item in the up-keep of a heedless child, and many children complain that by wearing glasses, they become subject to ridicule amongst their school fellows.

The President of the American Academy of Ophthalmology says " Mothers and fathers often foolishly, even wickedly, object to the wearing of the glasses by their children.

" Older people frequently avoid wearing of glasses, because they are unbecoming or because they claim that once glasses are fitted, they can

never be discarded. No child is too young to wear glasses. When glasses are needed they should be worn, but they should be prescribed by an Ophthalmologist and not by an Optician.

"The wearing of correctly fitting glasses, when necessary, to avoid eye-strain, is one of the surest means of conserving vision."

Indescribable prejudice coupled with gross ignorance exists in my country against sight testing and wearing glasses, is one of the commonest causes of preventable blindness, and must be responsible for a large percentage of the blind in India.

It is the general conviction of ophthalmologists that every human being must have his or her sight carefully tested twice during lifetime by an expert. This remark is not meant for persons having weak sight, but it applies to persons enjoying perfectly sound health. This testing is to be done first at the age of 8, and then at 40. I know people are generally poor and cannot afford the expense of the examination and glasses, but I do emphasize that when money can be borrowed for conventional customs of society or caste practices, why money cannot be found for such a necessary thing as the preservation of sight. But I fear, apart from poverty, there are other obstacles in the way. The honest ignorance of parents and the lack of knowledge of teachers who themselves do not set the right example by having their sight tested and wearing glasses, is undoubtedly responsible for the youngsters, neglecting their eyes. The general medical practitioners and family physicians by not insisting on their clients for sight testing at these 2 ages, render themselves liable to blame.

It is essential that they must emphasize the importance of this, remembering that in prevention lies the greatest service that the medical profession can render to humanity.

In countries where primary education is compulsory, all children, without exception, are required by rules to be carefully examined before entering school life, and, if the children are too poor to pay for the glasses, the school supplies glasses free of cost.

In England, many educational departments have made it a rule that every infant is examined by retinoscopy as soon after admission to school as possible and is subsequently visited once a year by an oculist. In case of defective sight his parent is summoned to attend with the child at the nearest Eye Clinic.

In India, the school doctor, in places where no oculist is available, does the work of prescribing glasses. He should first master Retinoscopy by practising it on model eye and on patients in an Eye clinic, remembering that it requires several thousand retinoscopies, before one can do it accurately.

The President, Ophthalmological Society of the United Kingdom, London, says:—

"My old and distinguished teacher Edward Nittleship used to say that no man could say even as much as whether a fundus appearance was physiological or pathological until he had examined 2,000 normal eyes." (page 9, Transactions of the Ophthalmological Society of the United Kingdom, Vol. XLI, 1921).

The Director of Ophthalmic Hospitals in Egypt in his official Annual Report for 1918, says:

"All vision testing should be carried out by the Ophthalmic Medical Officer.

The provision of spectacles for adolescents is, by no means, a simple matter. The stages of the procedure are as follows:—

1st. A preliminary subjective examination.

2nd. The daily instillation of atropine drops, for 5 days into the eyes to secure paralysis of accommodation.

3rd. Objective examination in the Dark room with the Retinoscope.

4th. The subjective testing of the result arrived at by the objective examination.

5th. The further subjective examination after the effect of the atropine has passed off in 10 to 15 days.

6th. The examination of the spectacles to see that the lenses are correct, and that the frames are also correct in all of their important essentials.

It is only by carrying out this routine that spectacles can be ordered successfully."

Both school doctor and school masters should bear in mind that proper examination of eye-sight for glasses takes rather a long time.

It usually takes me about a week to prescribe glasses for a young man who attends about three or four times during the week. The prescribing of glasses cannot be done in half an hour, (except for normal-sighted persons above the age of 40) as most of the school masters and unfortunately some of the school doctors seem to think.

*CHOLERA AND ITS TREATMENT

PART I.

By

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DEFINITION.

Cholera is an acute infectious epidemic disease characterised by sudden onset of profuse but painless purging and vomiting, muscular cramps, suppression of urine followed by marked prostration with little or no pulse at the wrist. The stools become quite free from bile and foecal matter in no time and are characterised by the presence of comma bacillus of Koch.

HISTORY.

The name cholera is derived from a Greek word meaning a spout. The violent purging resembles water rushing out of a spout. The disease had been known in India from the earliest times for Charaka and Sustruta describe symptoms alike it.

Lower Bengal is said to be the home of cholera whence the disease has spread to nearly all the countries. Besides Bengal, cholera is endemic in parts of West Indies and Java.

MODE OF EXTENSION.

The disease spreads from endemic area by means of human travel along trade high ways. Epidemics of the disease have been recorded which are associated with pilgrimages and fairs. The people from the fair return to districts and spread cholera.

SEASONAL PREVALENCE.

In Lower Bengal and in other endemic areas cholera is present all the year round. In Calcutta there is a rise in the number of cases in February and lasts through the dry hot weather till June. With the onset of rain there is a fall in the number of cases. After the rain there is again a rise in November.

PREDISPOSING CAUSES.

Men who are depressed mentally or who are of low vitality are liable to an attack of the disease. Too much alcohol, keeping up nights, undue exposure, fasting etc. depresses the vitality of a person.

(*a*) *Chill*:—Though this does not cause cholera it may powerfully predispose to the disease by producing congestion of the intestinal mucus membrane—a more favourable condition for the multiplication of cholera germs.

*Specially contributed to the Antiseptic.

(*b*) *Fasting*:—Acid secretion of the stomach affords a protection against the passage of cholera germs. During fasting the acid is deficient and if after prolonged fasting draughts of cold water infected with cholera germs are taken, may cause cholera.

(*c*) *Saline Purgative*:—Disorders of the stomach or bowels tending to diarrhoea or constipation may seem convertible into cholera by the use of saline or drastic purgative.

(*a*) *Visiting Endemic areas*:—Persons coming from a healthy district to live in an endemic area are peculiarly liable to an attack of the disease.

ETIOLOGY.

The causal agent is a micro-organism called comma bacillus of Koch. These are so-called from the shape of the bacilli. Though the comma bacillus is the essential cause of the disease, yet this alone may not produce cholera as it has been found that men in good health may be passing the micro-organism.

BACTERIOLOGY.

The comma bacillus is a motile organism possessing a terminal flagellum and forms no spore. It is about 1·5 M. in length and 5 M. in diameter. It dies when it gets dried but retains its vitality if it is kept moist. It is quickly killed by heat but can resist cold several degrees below O°c. It can live on the surface of fruits and vegetables for several days if kept in a cool and moist place. It is killed very easily by acid; even 0·05% Hydrochloric acid is enough to kill it.

The bacillus is found in the characteristic rice-watery stools and in the intestinal walls. It is not found 'in the vomit or sweat or in the urine or in any other secretion.' After several researches pathologists have discovered the bacillus in deeper tissues after a very acute attack and in the lungs after an acute Broncho-pneumonia following an attack of cholera.

The bacillus grows well on the ordinary culture media. An important characteristic of the cholera vibrio is the rapid formation of Indole in considerable quantity and the reduction of the nitrates to nitrites especially in peptone water. This forms the basis of cholera red reaction. A few drops of concentrated Sulphuric or Hydrochloric acid added to a peptone water culture, 8 to 12 hours old, give a pink colour and the colour is intense when the culture is two to three days old.

CHOLERA CARRIER.

Like typhoid carrier there is such a thing as cholera carrier. In the stools of patients cured of cholera the bacillus is found for a long time. It may be even two months.

MODE OF SPREAD OF INFECTION.

The disease may spread through drinking water contaminated with cholera germs, *e. g.* Hamburg Epidemic of 1892.

It may spread through food which had been previously contaminated with cholera germs in a moist state and not boiled before eating them.

Spread of cholera by soiled clothes if they are moist is not impossible, because until and unless the clothes get dry the cholera germs remain alive and can give rise to an attack if these germs are swallowed in either of the above way or if one takes food without washing the hands thoroughly before taking food as the germs may stick to the fingers.

Flies are in a large number of cases the agents to carry the infection. They sit on a cholera stool and the germs stick to their legs and body. They then fly and if they get access to food, sit upon it and infect with the germs.

PATHOLOGICAL CHANGES.

The cholera bacillus grows in the lumen, the gland, the epithelial cells and the mucosa of the small intestines probably producing an endocellular toxin which is set free and causes the characteristic symptoms.

If death has occurred in the collapse stage :—Eyes are sunken, rigor mortis marked, body keeps warm sometimes after death. Serous cavities are free from the clear fluid and sticky to the touch. There are punctiform hæmorrhages in the visceral pericardium. The auricles contain a small amount of thick dark blood, the ventricles contracted and empty. The lungs lighter in weight than normal and may appear dry. The spleen is shrunken and the liver is congested with dark blood. The gallbladder is distended with thick dark green bile. The stomach is congested. The mucous membrane of the small intestines is congested and denuded of epithelium in some places. The large intestine may be in rare cases very slightly congested, specially in the upper part (cœcum). The intestinal contents consist of a whitish or greyish grumous material consisting of food particles, epithelial cells, white and red blood cells and micro-organisms. In the kidney nothing beyond congestion of the organs is noted.

IN CASES DYING OF SUPPRESSION OF URINE.

Extensive hæmorrhage in the tissue of the kidney is noted. In some cases the epithelium of the convoluted tubules shows cloudy swelling and granular degeneration.

Blood Changes :—The great loss of fluid from the body causes a great change in the composition of the blood.

Red Blood Cells :—Per cubic millimetre is greatly increased. The count may run up as high as 80,00,000. A very high count is a bad sign showing excessive loss of fluid.

White Blood Cells :—Per cubic millimetre is largely increased. There is a marked increase in the large mononeuclear variety.

The alkalinity of the blood is diminished.

Specific gravity of blood :—The specific gravity of blood is increased. The normal specific gravity of blood is 1054. But in cholera owing to the loss of fluid it rises higher and higher according to the amount of fluid lost is greater and greater. It may rise as high as 1072 or more but the specific gravity generally noted varies from 1063 to 1068.

Technique of taking the specific gravity of blood:—A finger of the patient whose sp. gr. of blood is to be taken is pricked, after sterilisation, and a little quantity of blood is taken in a glass pipette with a capillary point taking care that there is no air bubble in the column of blood. Put a drop of blood from the capillary pipette in the middle of one of the small bottles containing glycerine solution in water of known sp. gr. If the drop becomes stationary in it then the specific gravity of the sample of blood is the same as that of the solution. If the drop falls down the specific gravity of the sample is higher than that of the solution. Another drop of blood should then be placed in the middle of another bottle with a solution of higher specific gravity than the previous one and the process repeated until the one in which the drop of blood remains stationary or just floats. It may so happen that the blood drops down in one solution and rises up in the other solution of the next higher specific gravity. then the true specific gravity is the intermmediate between the two.

By experience one can guess approximately the specific gravity of blood from its colour so that while verifying with glycerine solution it does not take a long time as the solution of about the same sp. gr. can be taken out at once.

Stock solutions of glycerine in water are prepared of known sp. gr., the solution of next higher sp. gr. differing by 2 only. The solution is made at about the mean temperature of the place where the solution will be used. The sp. gr. of the solutions varies generally from 1044 to 1074 (water being 1000). These are put up in glass stoppered phials duly labelled and arranged and kept in a box. May be had from the principal Chemists, Messrs. Burroughs Wellcome and Parke Davis are two principal manufacturers of the solutions.

Loss of salts from the blood:—With the evacuations there is a loss of salts too along with the fluids in the form of chlorides. In order to replace

the salts sodium chloride is added to the fluid used to replace the lost fluid. It has been found that solutions containing 60 grains of sodium chloride to the pint does not give a satisfactory result—nay it does harm because the percentage of chlorides is not raised to an appreciable amount so there is again osmosis and consequently evacuations. This is evident from the fact that as soon as this solution is given intravenously there is a big stool. The solution may with advantage be used combined with 160 grains of soda bicarb to flush the intestices and to replace the lost alkalinity of blood. It has been found that solution containing 120 grains of sodium chloride with 4 grains of calcium chloride to the point when given intravenously remains long in the blood vessels and is the best fluid to be used to replace the lost fluid.

Clinical description:—The incubation period of cholera varies from a few hours to a few days (3 to 6).

Although cholera presents a great variation in the degree of severity and type of the disease, there is a great constancy in its principal manifestations.

"The sudden onset of profuse but painless diarrhoea—the stools rapidly becoming quite free from bile and foecal matter accompanied by copious watery vomiting followed by extreme prostation with little or no pulse at the wrist, cold clammy skin, pinched face with sunken eyes, extreme restlessness with great muscular cramps and suppression of urine within a few hours" is very characteristic of cholera. This picture once seen can never be forgotten. For purpose of description the whole course of the disease may be conveniently divided into 4 stages.

(1) Premonitary diarrhoea.
(2) Stage of copious evacuations.
(3) Stage of collapse.
(4) Stage of Reaction.

Premonitary Diarrhoea.

The characteristic feature of this stage is nausea or actual vomiting and painless passage of bile-coloured stool (very thin in consistency) accompanied by great prostration and scanty urine. The skin may be clammy and the pulse becomes soft.

If microscopical examination of the stool is made cholera germs are found in it.

This stage lasts from a few hours to a few days. If properly treated in this stage the attack in the mild cases may be cut short. If not, it passes to the next stage, *i.e.*, stage of copious evacuations.

Stage of copious Evacuations.

The characteristic feature of this stage is the copious vomiting and purging of a watery nature producing marked shrinking of the body, pinched face, sunken eyes, husky voice and a greatly lowered blood pressure. In severe cases this stage connot be distinguished and it passes into the dangerous third stage of collapse.

Character of Cholera Stool:—The special character of cholera stools is the entire absence of bile, once the bowels have been cleared of their original contents. The stool consists of an opalascent colourless fluid with a characteristic fishy odour. This appearance is due to the presence of fine granular matter in suspension as a result of the intestines being denuded of epithelium in places. It is alkaline in reaction. Sometimes in a severe attack the watery portion of the stool may be red, due to the oozing of blood from the much-congested mucus membrane of the intestines. If the case progresses favourably the stools change in colour to greenish, green-yellow, or brown due to the flow of bile, then there is a decrease in the frequency of the stools and they begin to acquire some consisteney (thick) and smaller in quantity each time.

Character of Vomiting in Cholera:—This symptom always occurs at the same time the copious evacuation of the bowels commences. It is very surprising to find that vomiting in cholera does not produce much distress. Once the contents of the stomach is vomited out, the next vomits are clear and watery in nature. Owing to copious vomiting the patient feels very thirsty and if he is given plenty of water to drink at a time he will vomit out a lot. Vomiting much watery fluid when little has been taken is one of the characteristics of cholera.

Hiccough and Abdominal pain:—Sometimes there may be troublesome hiccough and abdominal pain of a severe nature. When there is much abdominal pain it has been observed that the patient either passes worms (either by mouth in the vomit or by the rectum in the stools or a haemorrhagic stool.) The abdominal pain may be due to the cramps either of the abdominal muscles or a refined pain due to the cramps of the back muscles.

Muscular cramps:—In this stage of copious evacuations muscular cramps is a prominent feature. The cramp begins in the fingers and toes and extends up to forearms and legs; then the body and even the face and back. The muscular cramp is very distressing to the patient but after an intravenous saline when the lost fluid is restored and the circulation restarted as it were, the cramps subside and the patient feels comfortable and sometimes falls to a good refreshing sleep. The muscular cramps can be nicely seen in patients with well-developed muscles.

Blood Pressure :—The blood pressure falls even below 70 m m of mercury. Suppression of urine takes place when the copious evacuations effect a marked fall in the blood pressure. As a consequence the body temperature falls to 96º F or even 95º F.

STAGE OF COLLAPSE.

In the mild case there is low blood pressure and a fair pulse but collapse does not take place. In the rest of the severe cases the pulse is just perceptible or lost at the wrist. The surface temperature falls, voice becomes husky. Cyanosis due to defecient circulation appears and cramp of the muscles begins.

The collapse stage follows the stage of copious evacuations or there may be sudden collapse after a big stool or a big vomit. This stage may last from a few hours to 2 days. The longer this stage lasts the greater is the chance of developing uraemia.

STAGE OF REACTION.

If the collapse stage is survived the pulse begins to gain strength with a corresponding rise in the blood pressure. The surface temperature rises and warmth to the extremities returns, the cyanosis begins to disappear. The stools change colour and become less frequent and a bit thicker in consistency and smaller in quality. Vomiting ceases, restlessness passes away and if the collapse stage is not prolonged there is free secretion of urine within 12 to 24 hours of the re-establishment of the circulation as it were.

DIAGNOSIS.

Clinical :—Copious vomits free from undigested food, painless passage of rice watery stool free from even the minutest trace of bile, early suppression of urine, muscular cramps, extreme thirst and restlessness, extremely husky voice, cold clammy sweat, sudden onset of low blood pressure and high Sp. gr. of blood are the most characteristic features.

Microscopical :—Presence of comma bacillus in the rice watery stool and an increase in the percentage of large mononuclears are the peculiar features.

DIFFERENTIAL DIAGNOSIS.

(1) *Ptomaine Poisoning.*

(*a*) History of several persons of the same house attacked, partaking the same food, some having slight diarrhoea and some showing grave symptoms.

(*b*) Presence of bile in the stool so that the stools never become rice watery. From the colour of the stool it is impossible to distinguish it from a mild case of cholera where the stools not necessarily become rice watery.

(*c*) The sp. gr. of blood is not so high in comparison to the symptoms that it gives rise to.

(*d*) Stool examination shows absence of comma bacillus.

(2) *Arsenic Poisoning.*

(*a*) In these cases the symptoms may be the same as that of cholera, but the acuteness of gastric symptoms and the abdominal pain are its marked features. In some severe attacks of cholera all these symptoms are present, so it is not an easy task to distinguish it from cholera by this point only. Pain in the throat precedes the vomiting of arsenic poisoning but not of cholera.

(*b*) Stool examination shows absence of comma bacillus.

(3) *Acute Bacillary Dysentery.*

(*a*) No increase in the large mononuclears.

(*b*) Pain and tenesmus are the marked features and fever is always present.

(*c*) Stool examination shows absence of comma bacillus but plenty of shiga and Flexner's bacilli.

(4) *Malignant Malaria.*

(*a*) History of fever.

(*b*) Spleen may be palpable or the patient may come from a malarious district or there may be a history of fever before.

(*c*) Leucopenia instead of leucocytosis.

(*d*) Malarial parasites are found in the blood.

(*e*) Stool examination shows absence of comma bacillus.

PROGNOSIS.

The prognosis in cholera cases depends upon various factors :

(a) Age :—It is fatal in extremes of life.

(b) Sp. gr. of blood :—The degree of concentration of blood when the patient comes under treatment is a great factor in the prognosis—patients with very high sp. gr. generally end fatally.

(c) Kidney activity :—The rapidity with which the action of the kidney is established is a very important factor—the sooner it is established the better and favourable the prognosis.

(*d*) *Rectal temperature* :—Rectal temperature over 103º F during the collapse stage is of a grave import. 3 cases with 106·4º F (Rectally) were noted, all of which ended fatally.

(c) *Pregnancy*:—Cholera in a pregnant woman is very dangerous. The kidneys are more or less damaged in pregnancy and in cholera there will be a further damage to the already damaged kidneys so that there will be a greater chance of developing Uraemia.

TREATMENT.

The essential points in the treatment of cholera may be divided under 4 heads.

(1) Whenever collapse occurs, raise the blood pressure and replace the lost fluid and salt by injecting sufficient amount of saline so that the kidneys may act freely and excrete the toxins.

(2) Administer by mouth such substances to destroy the toxins that are developed in the intestines.

(3) Watch carefully and control the temperature of the Reaction stage.

(4) Continue to observe the blood pressure after reaction and use all possible means to maintain it near about the normal so that the kidneys may act freely.

Though the above are the 4 cardinal points in the treatment of a cholera case the treatment is different in the different stages of the disease so that every case must be treated according to its own merit.

TREATMENT OF THE STAGE OF PREMONITARY DIARRHŒA.

In this stage the stool contains bile and until and unless a bacteriological examination of the stool is made it is very difficult to distinguish cholera from other forms of diarrhœa.

Medicinal: *Astringents and dilute mineral acids* may be given, but the best thing to use is *Hydrarg Subchlor* in fractional doses say ¼ or ⅛ grains repeated every 15 minutes or ½ hourly according to the severity of the case. *Opium* or any of its preparations should not be given.

Diet:—Nothing by mouth except iced water or green cocoanut water or plain barley water.

Accessory Treatment:—The patient should be put to bed and absolute rest enjoined. Chill is to be avoided.

TREATMENT OF THE STAGE OF COPIOUS EVACUATIONS AND COLLAPSE.

The essential point in the treatment of this stage is to restore the circulation. No drug in this stage will do any good as the drug whatever it is given will not be absorbed as the circulation is very poor. Restore the circulation and take steps to keep it steady by stimulants and then give drugs.

Medicinal:—Some authorities advise the use of opiates in the collapse stage. It does more harm than good as uræmia the most dreadful compli-

cation is very likely to follow its use. Atropine may be given with advantage to overcome the vasomotor parasis.

Dilute Mineral Acids do not in these stages give any satisfatory result.

Intestinal Antiseptics, e.g. Bismuth Salicylates, etc., are not good enough to destroy the toxins produced by the germs in the intestines.

Hydrarg Subchlor combined with camphor in ¼ gr. dose each have been used with excellent results repeated every 15 minutes.

Permanganate of Potash has been used and it has given excellent results by oxidising the toxins in the intestines. It does not kill the germ but makes the toxin innocuous. It should be conveniently used when the patient starts rice watery stools and may be given in 2 forms, as a pill or as a solution.

As a solution it can be given in the strength of 5 grains to the pint. The solution is to be taken frequently and that about one ounce each time.

As a pill 2 grains each with a keratin coating so that it may pass the stomach unchanged and dissolved in the alkaline intestinal juice where it will exhibit its action. It is to be repeated every 15 minutes till 16 such—then hourly for 8 such and then 2 hourly—till the rice watery stools change colour.

One drawback of these pills is that if the pills are not properly coated they give rise to a severe form of gastritis.

Once the blood pressure is raised, give stimulants by injection.

Accessory Treatment:—Absolute rest in bed—No pillow to rest the head and if not very inconvenient the foot end of the bed should be a little raised to ensure circulation in the vital organs.

Diet:—No solid food—no milk—only iced water or iced green cocoanut water or better still crusts of ice to suck to allay the thirst if the temperature be not below subnormal.

Methods of replacing the lost fluid and salts:—This can be accomplished in either of the three ways, but each case must be dealt according to its own merit and no hard and fast rule can be laid down.

(1) Injection of Saline per rectum (Normal Saline.)

(2) Subcutaneous injection of Saline (Normal Saline.)

(3) Intravenous Saline injection.

I, Rectal Saline:—The large bowels retain the absorbing power if there is a fair pulse at the wrist which corresponds to about a pressure of 85 millimetres of mercury. Below this pressure of blood the large bowel cannot be relied on as a big stool or a vomit may dangerously lower the blood pressure when the large bowels will no more absorb anything.

Rectal saline at this stage will be of no value. In mild cases rectal saline alone is sufficient to restore the circulation and maintain the chloride contents of the blood. In severe cases other means should be taken in addition to the use of rectal saline.

Amount of Saline to be given at a time :—The amount of saline that can be given at a time is eight ounces. It can be conveniently given as follows combined with 5% glucose solution and rum or brandy as a stimulant.

Rx

Normal Saline	3 vi.
5% Glucose sol.	3 ii.
Rum or Brandy	3 ii.

For one injection :—

Interval for repeating Rectal saline :—Rectal saline is to the repeated every 2 hours in acute cases, but sometimes the large bowels become so irritated that it rejects the saline if given so fequently so that even in acute cases it has to be repeated every 4 hours. As the kidneys begin to act freely the interval between the rectal injection of saline may be increased. Thus if in 24 hours the total amount of urine passed be 25 ounces the interval may be 4 hours and if a larger quantity of urine say 2 pints is passed with 4 hourly rectal saline—make it 3 times a day and if still larger amount of urine is passed it can be stopped altogether.

Simple Apparatus and Technique of Rectal Saline Injection :—The apparatus in its simplest form consists of a glass funnel of good size to which an India-rubber tubing is attached—to the other end of which a medium sized rubber catheter say No. 8 red rubber catheter is attached by means of a glass connection.

The saline is poured into the funnel and the air from the tube is driven out. The catheter is greased with vaseline and held by the fingers and inserted high up in the rectum, the patient lying on his right side. Allow the fluid to run as slowly as possible, better in drops. This can be done by placing the funnel at the level of the buttocks of the patient. This part of the technique should be strictly observed inasmuch as if the saline is given very slowly the rectum will absorb every drop of it but if given rapidly it will reject the whole amount and not a drop will be absorbed. The temperature of the saline may be at room temperature if the rectal temperature is not very high, otherwise iced rectal saline is to be given or if the rectal temperature be below subnormal slightly warm saline is to be injected.

The rectal saline may be continuously given with advantage—the rate of flow being regulated by means of a stop cock. The apparatus used in this case being a thermos flask instead of the glass funnel and a stop cock in addition to the catheter and rubber tublngs. For cheapness's sake a douche may be used covered with cotton wool on all sides instead of the thermos flask so that the saline may not turn cold.

II. Subcutaneous Saline Injection.

Where can it be given :—It is generally given in the loose areolar tissues of the axilla, groin and flanks and in women it is generally and conveniently given under the breast.

Strength of the saline :—The saline consists of 90 grains of sodium chloride to a pint of distilled water.

Utility :—It is of great value when slow absorption of the saline is aimed at. It is only to be given when there is a fair pulse but absolutely useless when the patient is in a collapse stage as not a drop will be absorbed from the tissues. It gives a better result when it can be combined with an electric bath.

Apparatus :—The apparatus in its simplest form consists of a lumbar puncture needle attached at one end of a piece of rubber tubing, the other end of which is attached to a glass bulb (graduated) placed at about 3 feet above the level of the bed of the patient. A clamp is used to stop the flow of saline.

Technique :—The part where saline is to be given is painted thoroughly with Tinct Iodine. A part of the skin is pinched up with the thumb and forefinger of the left hand and the lumber puncture needle, after the air is driven out from the rubber tubing, is pushed in between the fingers taking care not to direct the point of the needle downwards but parallel with the skin so that one knows how far and where he is putting the needle. The needle should lie between the superficial and deep fascia. When the saline is run into the tissue there will be a swelling which should be rubbed down by fingers only so that the saline may be distributed to a larger area and be quickly absorbed.

OBJECTIONS TO THE USE OF SUBCUTANEOUS SALINE.

(1) It cannot be given in large quantities at a time.

(2) It causes considerable pain and adds to the shock.

(3) It is very slowly absorbed and so of no use whatsoever when rapid absorption is wanted.

(4) Owing to the lowered vitality of the tissues and the difficulties of securing perfect asepsis in the operation there is great liability to abscess formation.

III. *Intravenous Saline injection* :—It is required when the patient is in a collapsed state where the blood pressure is very low, owing to excessive loss of fluid, and sp. gr. of blood is high.

Saline used :—There are 2 kinds of saline in use and known as (1) *Roger's Hypotonic Saline* containing 60 grains of sodium chloride and 160 grains of soda bicarb to one pint of distilled water, and (2) *Roger's Hypertonic Saline* containing 120 grains of sodium chloride and 4 grains of calcium chloride to one pint of distilled water. These salines are sterilised by boiling before use.

Methods of Injection :—There are 2 methods according as the vein is dissected out or not.

(1) Indirect method.—Where the vein is dissected out.

(2) Direct method.—Where the vein is not dissected out.

Indirect Method :—

Instruments :—These consist of—

(1) Roger's Saline apparatus consisting of

(*a*) A graduated glass bulb, rubber tubing and glass connections and Roger's silver canula with stop cock.

(*b*) Stand to keep the bulb at a height of about 3 feet from the level of the bed of the patient.

(2) Dissecting, ligaturing and suturing instruments comprising of scalpel, dissecting forceps, a pair of scissors, aneurysm needle, horse hair, silk thread.

(3) Dressing, bandage. Tr. Iodine.

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* THE TREATMENT OF KALA-AZAR

By

Dr. A. K. Sircar, Faridpur.

(*Continued from page 430 of the August issue of Antiseptic of 1924.*)

1. *Strength of the Antimony solution to be used* :—The strength of Antimony solution is of some importance. Both 1% and 2% solutions are advocated by Dr. Muir, Napier and Major Knowles. But very recently Rai G. C. Chatterjee Bahadur, M.B., the eminent Bacteriologist of Calcutta, advocates 4% solution as in that case the number of injections which would be required to bring a cure would be comparatively a very few only and the period of treatment would be consequently shortened. Regarding the rural cases of Kala-Azar, the author is of opinion not to begin with any stronger solution than 1% in dealing with particularly the advanced cases, as it is often observed that the injection with 2% solution at a moderate dose as advocated by Sir Leonard Rogers is often followed by œdema of the feet, ankles, legs, lungs and puffyness of the face. In a few cases fatal dysentery occurred only after 2 or 3 such injections. It is safer to use 1% solution to begin with and when 5 c.c. has been injected. 2% solution may then be continued up to 5 c.c. and if the case improves vary rapidly a few injections may be tried with 4% solution provided the heart be very good.

* Specially contributed to "The Antiseptic."

2. *Preparation of the solution* :—It should be remembered well that freshly prepared solutions are only to be used, as on keeping it moulds are liable to grow in the solution, and the splitting up the tartrate molecule and precapiting the antimony in the form of oxide. The oxide itself is not toxic but the solution that is left is occasionally very toxic. It may give rise to rigors and even death has been reported after the administration of such solution. New practitioner often forgets this point and gets discouragement in treating his cases. If it be desirable to keep the solution for some time it is better to add 0·25% of Carbolic Acid to prevent the formation of mould. Some of the workers on the line use autoclave solution which they say will keep for an indefinite period of time if properly done. But Drs. Muir and Napier think it not advisable to autoclave the solution as a high temperature decomposition is said to occur.

The solution is to be made in distilled water, if possible, but ordinary filtered tap water can be used without ill effects either with or without the addition of 0·85% Sodium Chloride as Dr. Muir says, but the author advises the use of distilled water in all circumstances. First of all take off a measured quantity of distilled water and this should be thoroughly sterilized by boiling—then take into another test tube containing the required amount of the Sodium or Pot. Antimony Tartrate and gradually add the required measured quantity of the sterile distilled water. This is to be followed by boiling again very slowly for a minute or two. This is to be repeated 2 or 3 times and see whether there be any deposit into the bottom of the test tube as usually found when bazar-purchased distilled water is being used. This is to be cooled and filtered off before use.

3. *Dosage* :—It varies according to the strength of the solution to be used and the following table will give an approximate idea of the doses to be given intravenously when injected on alternate days or twice a week. The adult dose is considered and the other doses may be worked out by the physician in the usual way. In case of 1% solution, these doses are adequately measured.

Age.	Initial dose.	Maximum dose.	Total quantity required.
1 year child	¼ c. c. (0025 grm.)	1 c. c. (01 grm)	25 c. c.
5 „ „	½ c. c. (005 grm)	2 c. c. (02 grm)	50 c. c.
10 „ „	1 c. c. (01 grm)	4 c. c. (04 grm)	100 c. c.
15 „ adult	2 c. c. (02 grm)	8 c. c. (08 grm)	200 c. c.

The initial dose is to be increased by 0·5 c. c. and this is continued without any complaint up to 8 c. c.

The author thinks it advantageous to commence with 2% solution when 5 c. c. of 1% have been well borne and definite improvement observed. In some 500 cases injected with only 2% solution while attending out-patient department it is noticed that 25 to 30 injections are quite sufficient to bring a complete cure without any recurrences. But it is doubtful whether this will hold good for most cases when the patients will be accustomed to such drug treatment as in the case of Quinine.

Dosage as prescribed by Rai G. C. Chaterjee Bahadur for the Kala Azar centre:—The maximum dose at one injection is as follows:—

(*a*) Children between 2 years:—1 c.c. of 2 p.c. or ½ c.c. of 4 %.
(*b*) „ from 2 years to 12 years 2 c.c. of 2 p.c. or 1 c.c. of 4%.
(*c*) Patients above 12 years 4 c.c. of 2% or 2 c.c. of 4%.

Dosage as advocated by Drs. Muir and Napier:—Assuming that a 2% solution is used for the average adult patient the first dose should be 0·5 c.c. (*i.e.*, 0·01 grm.); the dosage should be increased on each occasion by 0·5 c.c. up to the maximum of 5 c.c. (*i.e.*, 0·1 grm). Subsequently 5 c.c. should be given on each occasion. For a particularly fit patient 1 c.c. can be given as an initial dose, the doses can be increased by 1 c.c. up to the maximum of 6 c. c. For infants of 3 years it is advisable to commence with 0 25 c. c. and to make 2 c. c. as maximum. For children of 12 years the maximum should be 3·5 c. c. The doses for the intermediate ages are in proportion. For a very debilitated patient, it is often advisable to make the maximum about 3·5 c.c. as in the case of children. Best results are obtained by injections on alternate days and on no account the injection should be given less often than twice a week.

In case of 2% solution it has been observed by the author that after repeated injections with 5c.c. severe reaction occurs and in such cases the doses are to be reduced gradually by 0·5 c.c. when the patient is about to be cured perfectly.

Technique of the intravenous injections:—

1. The technique of the injection is difficult when the vein is soft and not always hit off. If a drop of solution gets into the tissue it often causes intense pain and sloughing. A 2% solution causes more pain than 1% solution. The secret of success is to have a very sharp needle for the syringe. The following things are required for this purpose:—

(1) A guage slip.
(2) Arkausan stone.
(3) A piece of slate.

The needles are to be kept very neat and clean when the work is finished with sterile vaseline. Each day before beginning the work the operator should have examined the needle; if any one is felt blunt, it should be immediately rubbed on the soft slate with its beraled edges downwards at suitable angle with a drop of water on the slate. It will then be quite safe for the work.

2. Operator should then ask the patient or some body should help the patient to lie down on a table or a bench.

3. A most superficial vein conveniently median basilic or cephalic or any other just on or above the elbow joint may be preferred. In some cases, it is convenient to get good veins on the back of the palm or the outerside of the wrist joint may be chosen for vein puncture. The latter one is specially suitable as it is almost fixed between the tendons of Extensor carpilongior and of the Extensor policis Brevis. This is extremely useful in the case of children in whom it is comparatively bigger than others. If a rubber tubing can be tied on the forearm about 4 fingers above the selected side of injection, congestion is caused which makes it stand out very prominently but the skin over it is rather tough.

4. The skin over the vein to be punctured is to be thoroughly sterilised either by rubbing Tr. Iodine or absolute alcohol 3 or 4 times.

5. The assistant, if any helping this operation, should then be careful to keep the part well stretched supporting on a pillow till the operator's needle reached the lumen of a vein.

6. The operator should then take up either a 2 c.c., 5 c.c. or 10 c.c. thoroughly sterilised syringe first by boiling and then by drawing in out absolute alcohol for a few minutes. This should be again washed out with sterile saline water, otherwise if any alcohol remains inside the syringe it may cause coagulation of blood in the needle thus preventing the blood coming inside the syringe. Then he should fill the syringe with solution of the antimony salt as desired but the quantity must be at least ½ c.c. more than the actual dose required.

7. The syringe should be held in the right hand and at an angle of about 15 degrees with the skin surface keeping the index finger just at the junction of the needle with the nozzle of the syringe. The needle is then to be pushed in upwards along the axis of the vein. The point of the needle may enter the vein immediately and the blood comes up into the barrel of the syringe at its own pressure due to the ligature placed above. The operator can also feel that the needle is in the vein. At this stage a very gentle pressure on the top of the piston may lead the solution into the vein but just before doing this the rubber band or ligature is to

not belong to the last menstruation but to the next ovulation which occurs without loss of blood. Impregnation may occur a few days before or a few days after a menstrual period. But the view that pregnancy may occur just before a menstrual period is not fully corroborated: In Ahlfelds statistics of pregnancy from a single coitus we find:

In 37% of cases, the fertilising coitus occurred in 1st week after menstruation.

In 35%.....2nd.....
In 15%.....3rd.....
In 9·7%.....4th.....
In 2·7%.....29 to 30th.....

This table shows that though pregnancy may occur rarely from insemination just before a menstrual period, the common rule is that "the aptitude for conception is greatest during the few days following menstruation."

3. The date of fruitful coitus cannot be fixed with certainty. Insemination and conception do not occur simultaneously. The duration of migration of the ovum is unknown; and it is known that the spermatozoa retains its motility for a prolonged time which may be several days after emission. It is common to assume 6 or 7 days for latitancy, *i. e.*, the lying in wait of the ovum and spermatozoa for each other. Taking this period into account, the gestation period will be 286 or 287 days. The interval between insemination and conception is also a variable period.

4. Menstruation may be suspended from other causes a month or two before conception or may continue after pregnancy has commenced.

5. Fatty and atonic condition of the uterine wall may be responsible for wide variations in the duration of pregnancy.

6. Protracted gestation may be a peculiarity in some families, in the mother and her daughters. Heredity is a factor in the causation of protracted delivery.

7. The duration of gestation is regulated by the ages of the parents. The older the parents, the longer the gestation period. (Charles Clay).

8. Labour may be protracted several days; and thus a week may be added to the gestation period.

9. The child born may or may not be mature, and we must consider this fact in fixing the duration. All children do not mature in equal times.

10. The ripening of the ovum in the ovary may not occur at the same time in all women, and the ripe ovum does not quit the ovary at a fixed time.

11. *The racial characterestics*:—In some races the period of pregnancy is unusually prolonged. 6% of women in Germany carry their pregnancy over 300 days.

The duration of gestation may be fixed to be ten lunar months, or nine calendar months and 7 days, or 280 days,—the period being counted from the first day of the last menstruation, or 275 days, counting from the last day of the last menstruation. From a list of pregnancies ensuing upon a single coitus, Loewenhardt, Hasler, and Hecker came to the conclusion that 272·2 to 273·5 days constitute the period of gestation.

Besides women, the gestation period in other mammalia show a similar variable period. For cows, it is roughly 285 days. It is longer in cases of bull-calves, and also when an aged bull covered the cow. In cows and mares the variation was 12·5% of the period. Calculations based on the last menstrual period, it has been found that

15% of the cows were delivered in the 39th week,
24%.....40th.....
22%.....41st.....

Based on the date of coitus: 45 %.....in the 40th week.
„ 77 %.....39....41st...

Commonly it may be said that cows take 280 days from the cessation of the menstrual period, or 274 days from the date of the last coitus. For the uncertain incidence of ovulation, variations occur for a period of 3 weeks.

1. M. Tessier's observations, (102 mares and 160 cows):

Shortest period;.....Mare.....311 days;	Cow.....241 days.	
Longest „ ..... „ .....394 „	„ .....308 „	
Range..... „ ..... 83 „	„ ..... 67 „	
Excess above stated time..... 57 or 60	„ ..... 32 or 35	
Average period..... 11 m. 10	„ ..... 9m. 10.	

2. Lord Spencer's observations (764 cows):

Shortest period (calf *living*) .....220 days.
„ „ (calf reared) .....242 „
Longest period .....313 „
Range (calf living).....93 „
Range (calf reared) .....71 „
Excess beyond 260 days when a calf is deemed immature ... 53 „
Excess above 9 calendar months.....37 or 40 „
Excess above 10 lunar months .....33 „
Average duration .....284 or 285 „

Thus we find that the gestation period of cows and other mammalia vary within wide limits, the longest period being in excess by more than a calendar month of the average. From analogy we may also expect a similar variation of gestation period in women.

3. Krahmer's observations (1105 cows):

In 4 cases delivery took place in the 48th week or over 329 days.
In 1 case .....51st „ „ 350 „

Krahmer's observations (177 sheep);
Duration = 145 to 171 days.
Average = 150 „

The following table, collected from different sources, shows that the authorities, not only differ from one another as regards the variability and certainty of any fixed time of the gestation period in women, but there is no unanimity of opinion as to the longest and the shortest periods of gestation.

Authorities	Duration of pregnancy.
Talmud (Jews)	271–273 days.
Code Napoleon	300 „
France	270 „
Dulignac	may be protracted to 11 to 13 months,
Prussian Law	302 days.
United States	317 „
Paye and Vogt (Norway)	270 „
Raciborski (from single coitus)	268–275 „
Montgomery (7 cases)	280–291 „
Reid (Lancet, 1850)	265–280 (general), 287–293 (rare).
Veit	278·5 days.
Hohl	280 „
Ahlfele	271 „
Duncan	275–278 (from last day of last mens.).
Lowenhardt	(from last day of last mens) 272, and 282 (from 1st day of last mens).
Stadfeldt	„ „ „ 272,
Barnes	270–275 „
Simpson	may be protracted to 319, 324, 332, 336, days.
Murphy	„ „ 314,324 „
Atlee (2 cases)	365 „
Velpeau	310 „
Meriman	280 to 309 „
Hamilton	10 calendar months,
Gaskill case	(from last coitus) 331
Another case	(from 1st day of last mens) 336 days.
Tausing	(observed in the same woman) 277, 285, 325 „
Germany 6% of cases delivered after 300 days.	
Gardiner Peerage case	9½, 10, 11 months, or (288 – 290), (304–306), (334–337) days.

Guy	(Single coitus 14 cases)	270–293 average–284 days.
	(„ „ death or absence of husband) 27 „	260–308 „ „ „
Wharton and Stille	56 similar cases	260–296 „ 276 „

Parturition generally occurs on the day on which the menses would have appeared for the tenth time, if pregnancy had not supervened, *i. e.*, ten times the menstrual interval which preceded it (Cederschiolo; or parturition occurs when the ovary is preparing itself for the tenth recurring menstruation (Berthold).

"Hippocrates, Aristotle, Galen, Pliny, Avicenna, Mauriceau, Rjolan, La Motte, Hoffman, Schenk, Haller, Bertin, Lietaud, Petit, Leveret, Louis, Astruc, &c., maintained that pregnancy usually terminates at the end of the ninth calendar month, or fortieth week, but might be protracted to the tenth, eleventh, twelfth, and some of them said to the fifteenth." (Ryan). The criticism of Duncan on the medical evidence of the celebrated Gardiner case remains true to this day: "Their evidence was not sufficiently accurate, in not being deducted from physiological science; which, however, in the present state of medical knowledge on the question, could not perhaps be more accurate. On the whole, the weight of the testimony was in favour of the advocates of protracted pregnancy; but the mother having cohabited with another, proved her incontinence; which fact influenced the House of Lords against the legitimacy. After all, the subject remains as obscure as before, and will require much more scientific medical evidence to decide it one way or the other."

The rule given by Simpson may be adopted by us for the present. "We have, therefore, to find out the number of days between the commencements of the two menstruations that preceded conception and multiply the figure by ten, and with a range of five days earlier or later the birth of the impregnated ovum will probably take place." (Emenologia, December, 1875). All medical jurists should bear in mind the conclusion of Smellie: "The common term of pregnancy is limited to nine solar months, reckoning from the last discharge of the catamenia; yet in some, though very few, uterine gestation exceeds that period; and as this is a possible case, we ought always to judge on the charitable side, in the persuasion that it is better several guilty persons should escape, than one innocent person suffer in point of reputation." The presumption as to legitimacy of the law of India is embodied in section 112 of the Indian Evidence Act, and is as follows:—"The fact that any person was born during the continuance of a valid marriage between his mother and any man, or within 280 days after its dissolution, the mother remaining unmarried, shall be conclusive proof that he is the legitimate son of the man

unless it can be shown that the parties to the marriage had no access to each other at any time when he could have been begotten." Here we find that the period "280 days" has been taken to be the maximum time for the period of human gestation, which is neither founded on science nor on practice. We have, however, dealt with the question sufficiently to show that the Vedic period of pregnancy namely ten months, 280 days if lunar, and 300 days or 304 or 305 if solar, is the period that has the support of facts and science, and also conforms to the practice of the Hindus to the present time; it should, however, be always borne in mind that the Vedic period used to be counted from the cessation of the last menstruation.

The period of utero-gestation is said to be 9 calendar months, 10 lunar months, 40 weeks, or 280 days. But 9 calendar months may consist either of 273, 274, 275 or 276 days, falling short of 280 days by from 4 to 7 days. So the period 9 months really ends in the tenth month or dasamasya of the Hindus.

Reference:—1. Rigveda, V. 78, 7, 8; X, 184; 3. Atharvaveda, i, ii, 6; iii, 23, 2. Compare Zimmer Altindisches Laben, 366; Weber Naxatra, 2, 313, N, 1,

2. Satapatha Brahman, iv. 5, 2, 4 and 5; xi, 1, 6, 2; 5, 4, 6-11;
3. Charaka Samhita, Sarirasthana.
4. Susruta Samhita.
5. Bhava Misra, Bhava Prakasa.
6. Smellie's Midwifery, Syd. Soc. Ed., Vol. I, Pp. 122-25.
7. Spielgelberg's Text Book of Midwifery, Syd. Soc Ed., Vol. I, Pp. 64, 65.
8. Guy's Forensic Medicine, 3rd Ed. Pp. 120-125.
9. Lyon's Medical Jurisprudence for India, Pp. 341-43.
10. Wharton and Stille: Medical Jurisprudence, 1884, iii, Pp. 41-44.
11. Ryan's Medical Jurisprudence and State Medicine, 1836, Pp. 259-264.
12. William Harvey, Generation.
13. Barnes. Obstetric Medicine and Surgery, 1884, Vol. I, Pp. 306-315.

THE USE OF "E. C." AS AN EFFICIENT WATER STERILISER AND DISINFECTANT

By

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The Necessity of Disinfectants and Antiseptics.—Modern Pathology has conclusively proved that almost all fatal diseases are caused by bacterial infections. These bacteria though invisible to the naked eyes are always present in the air we breathe, the water we drink and in a word everything we touch. Some bacteria present in the air and the substance we take in enters our system through the mouth, throat and nose and diseases like Cholera, Pox, Typhoid, Diphtheria and Tuberculosis of throat and lungs originate. Infections are also caused through cuts, scratches and wounds etc., the results are often blood poisoning. The constant raids of these bacteria can be effectually kept back by properly using good and efficient Disinfectants and Antiseptics.

Efficient Disinfectant.—In general an efficient disinfectant must possess a high bactericidal power yet not poisonous to human being, and when a very small quantity of it can destroy the whole region of micro-organism upon which it is allowed to act within a very short time possible. But large number of disinfectants that are now commonly used are more or less inactive and often cannot destroy the germs totally. Besides most of them are poisonous and if handled with little carelessness may cause death.

Chlorine as Disinfectant:—Of all the Disinfectants that are commonly known, *Chlorine* heads the list. Because it is chemically very active in killing pathogenic germs and its bactericidal power is so great that it is quite active even in the dilution of 1 in 10,00,000, vide "Modern Method of Water Purification" Pp. 198, Don & Chisholm, also "Studies in Water Supply" By Houston.

Sterilisation of Drinking Water:—"There is no safe method of preventing water-borne diseases except by chemical sterilisation"—"Water Supplies" By—Rideal pp. 63.

"The use of an extremely minute quantity of chlorine has offered a very practical solution of the sanitary troubles of nearly every water supply." "Studies in Water Supply" Houston pp. 64. Thus a practical solution of Water Purification by the use of a very small amount of Chlorine came into practice from the time of Mr. Johnson's success at Chicago.

1 in 10,00,000 has been found sufficient. Calcium Hypochloride in the form of Bleaching Powder and sodium hypochloride are the two chlorine yielding substances that are commonly used for the sterilisation of drinking water on account of their cheapness and efficiency.

I. A comparison between Bleaching Powder and Sodium Hypochloride :—

"Bleaching Powder increases the most objectionable hardness of water by leaving a residue of Calcium Chloride while Sodium Hypochloride causes softening". Vide—"Water Supply" By—Rideal pp. 186.

II. "Chlorine in the form of Calcium Hypochlorite imparts a peculiar flavour to the water and causes a rough sensation to the palate which renders it unpalatable. A water of great organic purity yet containing or

liable to contain the Bacillus Coli, or the Bacillus Typhosus or the Spirilum Cholera may be treated with as little as one part of Chlorine to 50,00,000 parts of water and in 15 to 30 minutes the whole region of objectionable micro-organism will be destroyed". Vide—"Simple Method of Water Analysis" By—Dr. Tresh. Water sterilised with Hypochloride of Sodium is perfectly odourless and the natural taste of water is not destroyed thereby.

III. "Comparative test with Hypochloride of Sodium and Bleaching Powder for sterilising drinking water has proved that the former is more efficient and cheaper. One part of available Chlorine per million parts of water is usually sufficient or sometimes less for sterilisation of water." Vide—"Water Supply" by Rideal.

IV. Water sterilised with Bleaching Powder is sometimes turbid but Electrolytic Hypochloride of Sodium imparts no turbidity to drinking water.

V. Bleaching Powder is an imported article which being very unstable, loses its Chlorine contents in transit and storage and is therefore always of uncertain strength and is quite unfit for use when a perfect sterilisation and disinfection are aimed at, but the Electrolytic Hypochloride of Sodium ("E.C.") as manufactured locally here in Calcutta contains a definite guaranteed strength and can be used safely, and with its use a perfect sterilisation is guaranteed.

What is "E. C."?—"E. C." is nothing but the Electrolytic Hypochloride of sodium having its chlorine contents stabilised by some mechanical means. Some people have a wrong idea that "E. C." loses its Chlorine contents soon after the bottle is opened—and I say this is not the case. The Chlorine contents of "E.C." remains the same for about 6 months without material deterioration if the bottle is properly corked and kept in a cool dark place. Recent development has been made in the manufacture of "E. C." and the chlorine contents of it has been successfully stabilised.

Application of "E.C." for disinfecting purposes in infectious diseases.—Phenyle or any other kind of Coal Tar disinfectants that are commonly used in India can kill the germs of infectious diseases such as Phthisis (Bacillus tuberculosis) only when it is allowed to act for a long time, while "E. C." is so active that it can destroy the whole region of micro-organism of any infectious diseases in 15 to 30 minutes.

Disinfection of infected houses and areas.—Germicidal properties compared.

Chlorine is active in the dilution of	1	in	10,00,000
Iodine " " " "	1	in	1,50,000
Carbolic Acid (Phenol) " "	1	in	70,000

Cresol " " " "	1	in	35,000
Creosote " " " "	1	in	20,000
Potassium Permanganate " "	1	in	2,000

Coal Tar Disinfectants such as phenyle, generally contain 6 to 7% of pure Carbolic Acid, 2 to 3% Creosol; and 4 to 8% of Creosote in the highest. On an average active disinfectant in them varies from 12 to 16%, or approximately 13% of absolute Phenol or products allied to Carbolic Acid. One part of Chlorine is equal to 15 parts of Carbolic Acid, or 35 parts of Cresol, or 50 parts of Creosote. Therefore one part of Chlorine is equivalent to 25 parts of active Coal Tar products, or in other words, 200 parts of ordinary Phenyle. Since "E. C." contains 2·6% of available chlorine 100 parts of "E. C." are therefore equal to more than 500 parts of Phenyle. That is "E.C." is more than 5 times as strong as Phenyle.

"Chlorine is an excellent disinfectant for a large quantity of materials".—"Water Sewage and Food" By—Purvis and Hodgson pp. 177. "It is a common practice to maintain the standard of the common Coal Tar disinfectant at 10 % or more of absolute Phenol or products allied to Carbolic Acid". Do. do. pp. 175.

Antiseptic Properties of "E. C".—It is a well-known fact that Chlorine is chemically more active than his chemical brothers Iodine or Bromine. On account of this quality as well as advantages of application and cheapness, "E. C". has been gradually superseding Tinct. Iodine, Formalin, Ether, Bichloride of Mercury, Carbolic Acid, etc. During the Great War a demand for a better germicide arose when a vast number of wounded and sick began to come into the Hospitals. The old antiseptics and disinfectants which are corrosive, caustic and poisonous in character retarded healing and thousands of soldiers died from blood poisoning and from Cholera.

The use of hypochlorite solution followed by that of salt solution gave wonderful results; and the use of "E. C". has gained ground for treating septic wounds successfully from that time. Now it is largely used in England as well as in the continent. On account of its rapid healing property without the least injury to the tissue its popularity is daily increasing all over the world. Vide Reports on "E.C". By Capt. Hodgkinson, R. E., and Mr. Hutchinson, C.I.E., Indian Journal of Medical Research Vol. IX. No. 3, January 1922.

The Indian Medical Gazette October 1922–By Lt. Col. A. Macworth.—

It is absolutely non-poisonous and can be safely used on the most tender part of the body without the least irritation and injury. I have used it in cases of cancers of the Uterus and I used 2 teaspoonfuls of "E.C."

in a quart of tepid water and when it is slightly warm the douche was administered. In four days, the offensive discharge was stopped.

Most of the disinfectants have got a very strong odour of their own which hide the disagreeable odour and does not destroy it but "E.C." destroys the most objectionable odour within a very short time. A very dilute solution of "E.C." 1 in 300 may be used for personal hygiene of men and women to destroy the objectionable body odour.

At present it is used in the Medical College Hospital, Calcutta, School of Tropical Medicine, Campbell Hospital, Thomson Hospital, Agra, and in most of the Hospitals all over India and Burma for treating septic wounds, Carbuncles, Hydrocele and abdominal operation.

The Inspector-General of Civil Hospitals, Bihar and Orissa, has made arrangements for supplying "E.C". to Hospitals of those provinces. The Government of Assam is trying to make use of "E.C.". in Hospitals and the Lungla Valley Medical Association, Sylhet, Assam, has made it a point to use "E.C." exclusively in Tea Gardens.

The Water Works at Chicago, New York, Boston in America, and a large number of them in the United Kingdom, *i.e.*, London, Lincoln, etc., and in the continent use Electrolytic Hypochlorite as water sterilisers.

Wells at Pussa, Muktiswar, are regularly disinfected with "E. C.". The use of Chlorogen in drinking water by the Bombay Corporation has abated the number of cases of bowel complaints which were so prevalent there prior to its use. The Calcutta Corporation has long been contemplating for using Chlorine at Palta Pumping Station for sterilising water supplied to Calcutta people and recently it has been decided by the Health Committee to use "E. C." for that purpose.

From these achievements it is easy to understand what merit "E. C." really possesses.

The information and references in this article are gathered through the help of Mr. J.N. Sircar, B.A., B.Sc., M.I. Chem. E. (Lond.), formerly Chief Chemist, The E. C. Manufacturing Co., Ltd. of Calcutta.

CASES AND COMMENTS.

INTESTINAL POLYPARASITISM

By

P. K. KURUP, L.M.P.

It is not my intention to deal with the various species of the parasites found in the intestines in any elaborate manner, but I wish to draw attention to certain peculiar points in relation to the invasion of the intestines by various parasites. My observations are based on the cases I have treated during my 1½ year's stay in the Government Head Quarter Hospital, Coimbatore, and especially from the microscopical findings of the fæces of the patients.

There was a circular from the authorities that every patient admitted into the Hospital must also be treated for Ankylostomiasis and accordingly it was carried out with due microscopical examinations, and what made me write this article is the peculiar presence of more than one variety of parasite in one and the same patient. About 50% of cases I examined, showed polyparasitism. There might be some fallacies which are quite unavoidable; but barring that, 45% of cases showed polyparasitic infection. The cases included real parasitic complaints as well as others. The prevalence of the parasites was as shown in the tabular form. (Indicated by the presence of their ova in the fæces.)

The Ascaris was the commonest. Often with this I found the ova of Trichocephalus dispar. A. Duodenale or Necator is a speciality. Double infection is the rule. But I found triple infection not rare.

Quadruple infection was present, the Strongyloides being the fourth member of the Council. Balantidium coli was the 5th accused in my statistics. Oxyuris was found in children more. Taenia only one, below twelve.

Majority of patients complained of fever, anaemia, diarrhoea or dysentery and anasarca. Headache and lassitude were not uncommon with these patients. Dyspepsia and disturbed sleep were the manifestations in some. Almost all showed great improvement under chinnapodi treatment supplemented by iron and arsenic and bitters. Iron arsenite injections were given to some intramuscularly.

No.	Name of Parasite.	Below 12 years.		Between 12 & 50 years.	
		Male.	Female.	Male.	Female.
1.	Ascaris, Lumbricoides ...	71%	63%	47%	49·5%
2.	Trichocephalus dispar ...	50%	52%	29%	33·5%
3.	A. Duodenale	39	21	59	63
4.	N. Arierícanus				
5.	Amoebae ...	51	59	35	27

6.	Ciliates	...	2	1	4	Nil
7.	Flagellates	...	3	2	8	7
8.	Strongyloides Stercoralis	...	Nil	1	Nil	Nil
9.	Oxyuris Vermicularis	...	39	45	Nil	5
10.	Taenia	...	Nil	one in 326 cases	Nil	Nil

The medicines employed as anthelmintics in all these patients including my private cases were as follows:—

1. Oleum Chinnapodium. 2. Thymol. 3. Betanaphthol. 4. Bismuth Carbonas. 5. Santonin. 9. Butea powder. 7. Extractum Filicis Liquidum and 8. Manson's mixture. I could not try carbon-tetrachlor or Tetraform in any of these patients. I have to state that Bismuth Carbonas acts marvellously in cases of oxyuriasis. Manson's mixture is efficacious in some cases only. The cost of Santonin prohibits its use on a large scale. The Pulvis Santonin Co., is the same with or without Santonin in it, as anthelmintic. Thymol treatment was not practised in very many. The patients did not like the precautionary restrictions for administering Thymol. Betanaphthol was given in very few cases only. Extractum Filicis Liquidum was given with mucilage only.

I think Thymol as a remedy for ankylostomiasis may be discarded and if any one is still in favour of practising such treatment, I should say he is practising medicine of a decade ago. I believe CCL4 (carbon tetrachlor) is very efficacious for anky and oxyuris. Thanks to Dr. Hall in finding out such a drug as an anthelmintic.

"Polypharmacy for polyparasitism."

AN INTERESTING CASE

By

AMARNATH YAJNIKA, M.C.P. & S.

A patient M. S. aged 45, by nationality Parsi, had complaints of eccentric pain in the right iliac region. There were occasional exacerbations of colic, with a little rise of temparature, nausea and accumalization of gas in the affected part.

This state of health went on for some three or four years. During this interval, he went to many surgeons of great repute. A well-known surgeon diagnosed this case as tuberculosis of the caecum and instituted anti-tuberculine treatment by injecting Tuberculine B. B. and a big bottle of creosoted Cod liver oil. This sad pronouncement on the part of the august surgeon brought an untoward psychological phenomenon in keeping physical break-down. Von-pirquet was positive.

He next went to consult a famous X-rays Specialist who starved and heavily purged him for a couple of days and then took a skiagram which

was very hazy and obscure in details. But, he corroborated with the opinion of the former surgeon with a little difference that he asserted this case to be a tuberculosis of the appendix.

Later on, he was advised for a change of climate which no doubt brought on some amount of amelioration in his troubles. On return, he had the same experience of pain etc., so he went, on recommendations, to see the exponents in the art of surgery of the presidency town. He presented himself before a prominent surgeon, who on hearing the history and after a little cursory examination of the patient passed the verdict of the imperativeness of the immediate operation for the ch. appendicitis. Now he was in a great fix of a tantalizing position; and an abdominal section for a layman means a warrant of signal of death.

Lastly he approached a surgeon and showed his X-rays prints and other valuable reports of the distinguished surgeons; but he placed them all aside and began to observe the case with interest and with clinical eyes. In the course of his minute examination, he inserted his index finger under the scrotum to the exter-abdominal ring. He then found an impulse on coughing. On being questioned, the patient pointed out that the pain is shifting downward. There was an appreciable small protrusion of gut. (bubonocele). An adjustable truss was ordered for him which gave him everlasting comfort.

In conclusion, I beg to draw your kind attention with emphasis much more towards the personal observations than to the so-called modern scientific investigations and methods. It is erroneous to depend upon them solely and wholly. They can, in no instance, replace the higher faculty of observations. The consecutive errors in diagnosis in the present case is due to the over-riding confidence in the modern techniques and want of appreciation of the wisdom of keen observation. It will be a sheer ignorance to underrate their value, but they are good as a subsidiary help. But fortunately or unfortunately they are stealing a march over higher power of senses.

A CASE OF LEUKAEMIA

By

DR. D. F. MICHAEL, L.M.D., MEDICAL OFFICER, PUSA.

A Brahmin lad, aged 16 years, was admitted to the Pusa Hospital on the 21st May 1924 with extreme breathlessness, pallor and tachycardia, and a very enlarged and painful abdomen. He gave a history of gastro-intestinal troubles extending over a year, the abdominal enlargement being noticed only during a few months prior to admission but becoming markedly so during the latter few weeks.

From the time he came under observation till his death which took place 26 days later the patient's condition was grave, the illness being characterised by extreme breathlessness, hæmorrhages from the bowel and epistaxis, great mental depression with a very anxious expression, marked enlargement of the spleen and liver and progressive emaciation, great pallor with palpitation, severe headache and dizziness.

The dyspnoea was so severe that the patient would sit bolt upright in bed supporting himself on his hands while is marked contrast with the gravity of this symptom. Except for concurrent palpitation, the heart showed no signs of disease, and the urine on repeated examination was normal. There was entire absence of fever.

Examination of Blood.

(a) Differential Leucocyte Count.

Poly Morpho Nuclears	10 %
Small Mono Nuclears	20 %
Large Mono Nuclears	70 %

(b) Total Leucocyte Count :—100,000 per c. m. m.

(c) Total Red Blood Count :—1,962,500 per c. m. m.

(d) Negative for Malaria, Kala-Azar etc.

A summary of the signs and symptoms would perhaps enable the reader to arrive at the same diagnosis as I did :—

1. Previous history of persistent gastro-intestinal disturbances over a long period.
2. The blood picture, especially the Leucocytosis.
3. Progressive enlargement of the abdomen due to marked hyper. trophy of both liver and spleen.
4. Abdominal pain and tenderness.
5. Great pallor and palpitation with headache and dizziness.
6. Extreme breathlessness, in this case Orthopnœa, due probably to the anæmia.
7. Rapid and soft pulse.
8. Absence of symptoms of Cardiac or Renal disease in spite of the presence of Nos. 5, 6 and 7.
9. Hæmorrhages, in this case severe Epistaxis and Melæna.
10. Absence of fever.
11. Diarrhœa etc.

In passing I would mention that little or no relief was afforded by resort to Soamin in gradually increasing doses hypodermically with appropriate symptomatic treatment which included Oxygen inhalations. Death supervened from sheer exhaustion.

AN INTERESTING CASE OF PELVIC PRESENTATION: LABOUR DELAYED DUE TO UTERINE INERTIA

By

M. V. NAIDU, L.M.P., SIDAPUR (COORG.)

I am writing this case as it is interesting to note that an impacted breech presentation (incomplete) could easily be delivered by the application of forceps instead of adopting other methods of manipulation.

On 22-12-24 I was called in to see a case of delayed labour, the patient being the wife of a maistry in a State near by. Information given to me was that she got labour pains on 20-12-24 in the evening and not delivered yet. I went there well-equipped with obstetric bag, midwifery case and other appliances, as it is very difficult to get a clean vessel of water in a poor man's house of this class.

On going there I found the patient was living in a hovel with filthy surroundings and environment. She was seated in a room being held by her husband on a dirty mat. Before my examination I got the room well-cleaned and windows wide opened to have better light and air and had the patient over a clean mat and blanket.

Previous history :—Patient had given birth to two children and delivery was safe and easy.

Present history :—Patient got the labour pains on 20-12-24 and membranes ruptured next evening and was then having slight pains on and off, which then ceased altogether.

General condition :—Patient of a thin build, constitution weak. Face drawn and anxious ; tongue and lips dry ; bad set of teeth. Pulse weak and quick and soft. Temperature 100°

Abdominal Examination.

Palpation :—Uterus toxically contracted, fœtal parts could not be felt.
Auscultation :—Fœtal heart could not be heard.

P. V. Examination :—Before examination I tried to pass in a catheter to draw off the urine. I could not succeed as the presenting part was pressing over the neck of the bladder. I thoroughly cleaned the genital parts with lysol lotion and made P. V. examination. It was a case of breech presentation—feet completely flexed over the abdomen and could not be felt.

Attendants seemed to have muddled with the case and somehow managed to get hold of the right hand, pulled it out and tried to extract the

child. In their tugging hand gave away near the shoulder. Foetus dead and slightly decomposed, vagina congested with laceration of the perenium.

Treatment :—I got everything ready to deliver the case. I had two assistants (her mother and sister), but did not anesthetise the patient for want of a competent assistant. After taking necessary precautions as far as practicable, I tried to trace out the feet, but could not succeed, as the legs were completely flexed—fingers could not be got round the groins of the child as the breech was impacted. As a last resource I applied the forceps after sterilising the instruments in boiling water and had them in a clean tray containing lysol lotion.

After little manœuvre I was able to fix the blades and went applying gentle traction, and succeeded in delivering the breech ; next two legs came out and then the trunk. To my surprise one hand was missing. On questioning the attendants they informed me that it was hanging out and so it was removed by adopting Smellie's method. Placenta came out after 20 minutes.

In the meanwhile I got lysol douche ready and gave her hot vaginal douche and touched the bruises with Tincture iodine and she had a dose of Ergot and attendants were given necessary instructions. On 24-12-24, I visited the patient and found her getting on well. She had no temperature and had passed her urine. I gave her another douche first with lysol lotion and then with iodine lotion as the discharge was foul. Vulva slightly oedematous. After douching I touched the bruises with Tr. iodine.

Patient made a speedy recovery without developing sepsis.

FOREIGN BODY-GLASS PIECE IN THROAT

By

MANAYATH ANANDAN, L. M. P., PERUNDURAI.

A female child five months old was brought to me by her parents at noon on the 22nd February '25 saying that she had swallowed something while crawling, blood came out of the mouth and that there was difficulty in breathing. The face was slightly bluish, and froth was present at the nostrils. I at once put the middle and index fingers of my left hand in the mouth of the child, and felt the edge of a hard and flat substance fixed at the entrance across the throat and its anterior and posterior walls were in contact with the foreign body and consequently it was not possible to say what the substance was. I removed my fingers, took a pair of dressing forceps and after introducing my two fingers as before, guided the forceps to hold the foreign body which on removal was found to the surprise of the bystanders to be a piece of ordinary glass triangular in shape, two inches long at the sides and 1½ inches broad at the base. The child is doing well.

MILK INJECTIONS IN EYE AND OTHER DISEASES

By

DR. K. N. PRADHAN, HON. SPECIALIST, MAYO HOSPITAL, NAGPUR.

After reading some glowing reports in the Medical monthly's I started giving milk injections. The first case was not related to eye diseases.

I. An adult suffered from gonorrhoeal orchitis right side for one and a half months. Then three weeks before he came to me he got intense pain and fever and the left testicle enlarged. He was given phylacogens and other injections without any relief. Immediately he was admitted he was given 5 c.c. milk, boiled for 1 minute in a Test Tube, into the right buttock intramuscularly. Local reaction, *i.e.* pain in the leg, commenced half an hour after and the patient got a severe chill followed by fever up to 103°. Next day, *i.e.* 24 hours after the injection, the temperature came to normal, but the place where injection was given was painful and the patient could not walk comfortably. On the 3rd day 10 c.c. were given in the other gluteal region with the same result. On the 5th day of admission his left testicle (that which was affected recently) became normal in size and was absolutely painless. Temperature was normal. But the pain in right testicle still continued. There was no fever. On the 8th day 20 c.c. were given again in the right side. This brought on 102° fever and not a very severe reaction which I expected. This time the right testicle was expected to get normal but only pain was less ; the thickening was still the same.

Comment.—It seems milk injections have action on recent inflammations and are harmless.

II. A young woman came with perforation in right eye and hypopion ulcer in the left eye. The local conditions were as follows :—Symptoms—Pain in the eye, around the eye and headache, intense photophobia and loss of vision. Cause—by the relatives was supposed to be Evil Eye. Signs—Lachrymation, no purulent discharge, oedema of lids, ciliary and conjunctival irritation, a large corneal ulcer very minutely stained by Fluroscine. Anterior chamber very shallow and filled with purulent exudate up to and above the pupil. Pupil could not be seen. I could not see any retinal reflex. There was good projection of light. Locally atrophine and argycol was put in and intragluteal milk injections were given every 4th day. I started with 3 c. c. and increased to 5 c. c. It took nearly two weeks for the symptoms to show any sign of relief. In this case I gave also one injection of Neosalvarsan and one subcutaneous of ½ c.c. of Turpentine. Ultimately the patient left the Hospital with 6-20 LE and RE only P. L.

Comment—This result is not strictly due to milk injections but I believe it stopped further progress when the disease was at its height.

III. A pamper aged 40 with both eyes [illegible] with all its classical symptoms was admitted for pain in the eye and complete blindness. Enucleation was advised by the doctor on duty. Mag. sulp. compresses were applied to both the eyes and milk injections 5 c.c. to 10 c.c. were given for 2 weeks. All the local symptoms had subsided and though the retinal reflex was not seen, patient told that he could see the shadows of his own hand and went away quite satisfied.

Comment.—In such cases operations are useless and except for the danger of meningitis which I think is extremely rare; no milk injections earn you a grateful patient for preserving his eye ball.

IV. Trachoma and Pannus.

A student 20 years old was given ten milk injections from 5 c. c. to 20 c. c. He got very slight reaction each time and the end result was extremely disappointing. Pannus was less while the patient was under treatment and he felt better, probably a faith cure. But clinically there was no change at all.

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(*e*) how many cooks are employed to cook the foods of (i) the Brahmanas, (ii) the Anglo-Indians and (iii) other Hindus;

(*d*) whether it is a fact that Anglo-Indian patients are exempt from drill and if so why:

(*e*) whether it is a fact that Anglo-Indians are permitted to live with their leper wives in married quarters; and

(*f*) whether the same privilege is accorded to other communities; if so, how many are enjoying that privilege at present?

A.—Information has been called for.

Duties of chemists and druggists in the General Hospital, etc.

Q.—Rao Sahib U. Rama Rao: Will the hon. the Minister for Local Self-Government be pleased to state—

(*a*) whether it is a fact that Sub-Assistant Surgeons are now doing the duties of chemists and druggists in the General Hospital and in the other major hospitals in the Presidency; and

(*b*) if so, how many of them are now doing that kind of work?

A.—(*a*) The answer is in the negative.

(*b*) The question does not arise.

The discharge of patients in the Royapuram Hospital.

Q.—Rao Sahib U. Rama Rao: Will the hon. the Minister for Local Self-Government be pleased to state—

(*a*) whether it is a fact that, in the Royapuram Hospital, an order has been issued that patients, whatever the nature of their complaints, should be discharged earlier than necessary to effect economy in expenditure;

(*b*) whether it is a fact that prescriptions have often to be changed in the said hospital for want of certain costly ingredients in the stores;

(*c*) whether it is also a fact that the supply of linen to patients has been curtailed and that soap and washing soda are not given for washing them;

(*d*) what was the strength of the thoties and menials in the said hospital prior to retrenchment and what is their present strength;

(*e*) whether it is a fact that the nurses in the Royapuram hospital are now made to prepare coffee, etc., and watch the washings of linen in addition to their nursing duties; and

(*f*) whether it is a fact that the nursing staff and ward boys have been deprived of all kinds of leave except casual leave and that they are asked to work on Sundays too?

A.—(*a*) & (*b*) The answer is in the negative.

(*c*) Linen is issued to patients on the scale fixed by the Surgeon-General. The washing is done by the dhobies who use their own materials.

(*d*) The strength of thoties and menials is as under:—

(*b*) Yes.

(*c*) The answer is in the negative.

Differential treatment to patients in the Sanatorium, Madanapalle.

Q.—Rao Sahib U. RAMA RAO: Will the hon. the Minister for Local Self-Government be pleased to state—

(*a*) whether any complaints have been received with regard to the differential treatment accorded to the patients in the Sanatorium at Madanapalle, based on religious considerations;

(*b*) The number of patients Hindus, Christians and Muhammadans admitted into the said Sanatorium during the past three years;

(*c*) Whether any and, if so, what amount is paid as Government grant towards the maintenance of the Sanatorium; and

(*d*) Whether any check or audit is exercised over the funds of the Sanatorium and, if so, the nature of such check or audit?

A.—(*a*) The answer is in the negative.

(*b*) The Government have no information.

(*c*) The Sanatorium is now given an annual maintenance grant equal to one-half of the expenditure subject to a maximum of Rs. 25,000.

(*d*) The Examiner of Local Fund Accounts audits annually the accounts of the Sanatorium. The audit is generally on the lines followed in the case of the accounts of local bodies.

Increments to Sub Assistant Surgeons.

Q.—Rao Sahib U. RAMA RAO: Will the hon. the Minister for Local Self-Government be pleased to state—

(*a*) When the annual increments to Sub-Assistant Surgeons generally fall due;

(*b*) the final sanctioning authority; and the procedure adopted in this matter; and

(*c*) whether it is a fact that in most cases increments were not sanctioned last year until after six months had elapsed between the due date and the date of sanction?

A.—(*a*), (*b*) & (*c*) The information has been called for.

Dr. Muthu's Proposal for opening a Sanatorium in the suburbs of Madras.

Q.—Rao Sahib U. RAMA RAO: Will the hon. the Minister for Local Self-Government be pleased to state—

(*a*) whether it is a fact that Dr. Muthu, Tuberculosis expert, has suggested to Government the opening of a Sanatorium in the suburbs of Madras and if so, at what place;

(*b*) whether any communication has been received from him regarding acquisition of site, grant for building and generally for financial support; and

(*c*) if so, what orders were passed by the Government thereon?

A.—(*a*) Dr. Muthu suggested the opening of a Sanatorium at Avadi in an interview which he had with His Excellency the Governor and the Minister early in 1923.

(*b*) In a recent communication Dr. Muthu has proposed to open a Sanatorium at Thambaram near Pallavaram at his own expense. He has applied for a grant of 240 acres of land for the Sanatorium.

(*c*) Dr. Muthu's application has been sent to the Surgeon-General for remarks.

Privilege of the Medical Practitioners in the City to grant Medical Certificates.

Q.—Rao Sahib U. Rama Rao: Will the hon. the Minister for Local Self-Government be pleased to state—

(*a*) whether it is a fact that the privilege accorded to the registered medical practitioners in the city and in the mufassal to grant medical certificates to Government servants for purposes of leave, etc., without the countersignature of the District Surgeon, has been withdrawn by a recent Government Order;

(*b*) if so, whether there have been any specific instances of abuse of power on the part of the registered medical practitioners in the matter of granting certificates to Government servants, justifying the withdrawal of that power;

(*c*) whether the attention of the Medical Council was drawn to the breach of faith by any registered medical practitioner or practitioners in the matter and if so, when and with what result; and

(*d*) whether the Government will place on the table of the House the correspondence, if any, between the heads of departments and the Government on the one hand and the Government and the Medical Council on the other, that led to the issue of the Government Order in question?

A.—(*a*) The answer is in the negative. Even under the old order heads of offices had full discretion to require the countersignature of the District Surgeon in doubtful and special cases. The recent order only emphasized this by declaring that the head of an office will be at liberty to decline to accept without the countersignature of the District Surgeon any medical certificate unless it has been issued in compliance with a requisition from him. The order does not withdraw from medical practitioners their right to grant certificates.

Designation.	Strength previous to retrenchment.	Present strength.
Male thoties	18	14
Ward boys	24	25 (one additional ward attendant sanctioned on account of the transfer of the Dental department from the Government General Hospital in April 1924).
Female ward attendants ...	20	20
Lascars	15	12
Female thoties	12	10
Sweepers	8	4
Cooks	10	7

(e) As there were complaints about the quality of coffee prepared by the cooks for patients, the Surgeon-General, after inspection of the hospital, ordered that emergency kitchens attached to the ward should be brought into use so that coffee and other extras may be prepared and served hot, whenever urgently required, by the nurses themselves in the ward kitchens. No orders were passed that nurses should watch the washing of linen.

(f) The staff nurses get their usual privilege leave and casual leave. The question of granting leave to nurse pupils under training is under the consideration of the Government. The Matron arranges to give a day off to one or two nurses right through the month so that all the nurses have a turn during the month. As regards ward boys and other menials drawing Rs. 20 or less per mensem, sick leave on half pay is being granted to those who are sick in hospital. Leave for a day or two is granted when arrangements can be made for the work without substitutes. Work on Sundays is unavoidable in medical institutions.

Major Operations in the Royapuram Hospital.

Q.—Rao Sahib U. RAMA RAO: Will the hon. the Minister for Local Self-Government be pleased—

(a) to furnish a list of major operations performed in the Royapuram Hospital during the period (1) from January to June 1924, (2) from July to December 1924, respectively, and (3) the names of Surgeons who performed those operations;

(b) to state whether it is a fact that hitherto all surgical operations have been done by respective Surgeons in charge of the wards; and

(c) to state whether it is also a fact that from July to December 1924 it has been ordered that no operations should be done without the previous consent of the Superintendent of the Hospital?

A.—*(a)* A statement is laid on the table.

Statement.

1st January to 30th June 1924.

Number of operations.	25	64-29	63	29	9	219
Wards.		S-1	S-2	H.S.	R.M.O.	
List of operations.	Major W. C. Gray, Superintendent, six months.	Dr. S. M. Trasl, first four months	Major W. C. Gray, May and June.	Dr. S. P. Sarma, six months.	Dr. C. R. Krishnaswami, six months.	Dr. E. A. Stevenage, six months.	Total.
Operation on nose	... 1	... 1	... 2	... 3	1	...	7
Tumours	... 3	5	4	...	7	...	19
Tonsils	...	2	1	13	2	1	6
Amputations	... 3	11	4	11	1	4	36
Hernia	... 7	10	2	7	2	3	35
Abdominal operation	...	5	3	16	2	...	17
Rectal	... 9	8	4	5	4	1	41
Male generative organs.	...	4	2	1	4	...	16
On bones	...	1	...	2	...	...	2
On joints	...	...	1	1	...	...	3
Empyema thorax	...	6	2	...	2	...	12
Cancers	... 2	2	...	...	...	...	3
Abscess liver	...	2	2	2	1	...	9
Lymph glands	...	2	2	1	3	...	6
Mastoid	...	3	2	2	...	...	5
On skull	...	1	...	...	...	...	1
Plastic operation	...	...	...	...	...	...	
Total ...	25	64	29	63	29	9	219

1st July to 31st December 1924.

Number of Operations.	2	85	75	4	39	10	215
Wards.		S-1	S-2	S-3	H.S.	R.M.O.	
List of operations.	Dr. P. F. Mathias, Superintendent.	Dr. S. M. Trasl, six months.	Dr. S. P. Sarma, six months.	Dr. Md. Abdul Khaliq, six months	Dr. C. R. Krishnaswami, six months.	Dr. E. A. Stevenage, six months.	Total.
Operation on nose	...	... 1	... 3	...	... 2	...	6
Tumours	...	...	... 2	...	... 5	...	12
Tonsils	...	... 4	... 1	...	... 2	1	9
Amputations	...	2	15	...	5	4	39
Hernia	...	14	12	1	4	4	27
Abdominal operation	1	10	9	1	6	...	28
Rectal	1	12	20	...	6	...	49
Male generative organs.	...	22	2	1	4	...	12
On bones	...	8	1	...	1	...	4
On joints	...	2	7	...	1	...	10
Empyema thorax	...	2	1	...	2	...	3
Cancers	...	1	2	1	...	...	8
Abscess liver	...	3	...	...	...	1	1
Lymph glands	...	...	...	...	...	1	2
Mastoid	...	...	...	...	1	1	5
On skull	...	4	...	...	1	...	215
Plastic operation	...	...	...	...	...	...	
Total ...	2	85	75	4	38	11	215

(*b*) The Government had reason to believe that the privilege which Government servants enjoyed of obtaining leave on medical certificates granted by registered practitioners was being abused. As an instance in point the attention of the Hon. Member is invited to paragraph 17, clause 3, of the annual report of the Superintendent, Government Press, for 1923-24 which has been placed on the Editors' Table.

(*c*) In the nature of things it is almost impossible to prove that a false certificate has been given, for medical practitioners can always maintain that the fact stated in a certificate is a matter of opinion. One suspicious case was however recently brought to the notice of the Medical Council on 14th February 1926.

(*d*) Copies of letters from the President of the Madras Medical Council and the Surgeon General are laid on the table.

From the President, Madras Medical Council, Madras, dated the 5th November 1923.

I have the honour to state that this Council at its meeting held on the 29th October 1923 resolved that in the matter of granting certificates by registered medical practitioners to Government servants that G. O. No. 989 dated 22nd May 1916, be so amended that all medical certificates granted by registered medical practitioners as defined in section 3 of the Madras Medical Registration Act (IV of 1914) be accepted without countersignature. A patient must, however, produce a letter of requisition from the head of his office to his medical attendant before the same medical attendant can examine him with the idea of giving a medical certificate. In doubtful and special cases, the heads of offices should, without any delay, communicate with the Surgeon-General with the Government of Madras, who will arrange for any further examination of the patient, if he thinks it necessary.

From the Surgeon-General, Ref. No. 3731-4-Est., dated 1st/4th March 1924.

[*Reference.*—Correspondence ending with Government Memorandum No. 24875-2, P. H., dated 18th February 1924.]

With reference to the above memorandum, I have the honour to forward herewith a statement showing the number of cases in which subordinates, who have produced certificates from private medical practitioners, have been re-examined by the District Surgeons of the four presidency districts during the last three years and the percentage of cases in which the District Surgeons on such re-examination have found it necessary to refuse countersignature.

2. These statistics do not prove much. On the other hand, there is a great deal of abuse possible and prevalent in the existing system of Government servants being permitted to obtain medical certificates from private medical practitioners. I have considered the question but I am

5½

afraid that the only remedy which can be suggested at present is that indicated by the President, Madras Medical Council, in his letter No. N. Dis 67-1 of 23, dated 5th November 1923, now under the consideration of Government. If the procedure suggested therein is carried out, it will remedy to a certain extent the existing state of affairs,

District.	Year.	Number of certificates.		Percentage certificates not countersigned.
		Countersigned.	Not Countersigned	
II ...	1921	9	...	...
II ...	1922	15	...	...
II ...	1923	8	...	5·8
III ...	1921	16	1	...
III ...	1922	31	...	...
III ...	1923	8	...	...
Iv ...	1921	13	...	...
Iv ...	1922	97	2	2·0
Iv ...	1923	90	6	6·6

DR. KOMAN MEMORIAL.

The following resolutions were passed at the meeting of the Madras Medical Association held on the 7th March last :—

I. "This Association places on record its deep sense of regret and sorrow at the untimely demise of its respected President Rao Bahadur Dr. M. C. Koman and conveys its respectful sympathy to the members of the bereaved family."

II. *(a)* "That steps be taken to commemorate his memory and that subscriptions be invited from the members of the Association as well as from friends and admirers towards this object."

(b) "That Dr. N. Venkataswami be requested to act as Treasurer."

All subscriptions may be sent to Dr. N. Venkataswami, M. B. & C. M., Ripon Pharmacy, Sydenham's Road, Periamet, Madras.

BOOK REVIEWS

THE INSULIN TREATMENT OF DIABETES MELLITUS

By Dr. P. J. Cammidge, M.D., (Lond.) D.P.H., (Cant.) Second Edition 216 pages. 6 net. E. and S. Livingstone, 16 and 17, Teviot Place, Edinburgh. 1924.

As insulin is now being employed extensively in India, a timely publication of this kind is very useful. The learned author deals in a concise manner the properties, mode of action and sphere of usefulness of Insulin in the treatment of Diabetes so far as they are known at present. Insulin is the greatest discovery yet made in the treatment of diabetes and its effects are often striking and dramatic. But it has its own limitations. The author in the book gives in detail the indications and contra-indications to its employment giving illustrative cases. The chapters on What is Diabetes; Treatment by Insulin and Fasting compared; Author's methods of treatment with Insulin; are very instructive and we invite every practitioner in this country to go through the book in detail. As diabetes is a very common disease the timely publication of this book is sure to be very useful to our readers. We strongly recommend the book.

AN INTRODUCTION TO PRACTICAL BACTERIOLOGY AS APPLIED TO MEDICINE AND PUBLIC HEALTH

By T. J. Mackiee, M.D., D.P.H., and J. E. McCartney, M.D., D. Sc., 1925 297 pages [E. & S. Livingstone, 16 and 17, Teriot Place, Edinburgh] Price 8sh. 6d.

Bacteriology has of recent years advanced to such an extent that the beginner and sometimes even the post-graduate worker finds it difficult to follow the latest advances in practical technique. In this book the authors have endeavoured to briefly describe the essential steps relating to practical bacteriological diagnosis with special reference to tropical diseases. Though the authors do not claim that their work is a text book, we are of opinion that it is an epitome containing all that is worth knowing in bacteriology and that it is bound to be of great help to students and post-graduates.

ORGANOTHERAPY IN GENERAL PRACTICE

Issued By G. W. Carnick & Co., New York. Price S. 2.00.

G. W. Carnick & Co., are offering this book to the medical profession in the hope that it will prove of real service to them in supplying a condensed text book covering the entire field of organotherapy and be of value to the general practitioner in enabling him to relieve and cure human suffering by means other than the older agents of the physicians' armamentarium.

MENTAL DISORDERS.

By Francis, M. Barnes, J.R., M A., M.D. Second Edition. 295 Pages. 3·5 Dollars. C. V. Mosby Company. St. Louis, U.S.A.

This work is a brief outline of psychiatric fundamentals which are not readily available for students in any one text book. These lectures were given as a preliminary introductory course to medical students, which have been gotten together in the present form. In this edition additional space has been devoted to the subject of Mental Hygiene, Social Psychiatry, Mental Factor in Industry and Vocational Guidance. The subject is very lucidly and thoroughly dealt with. Very useful book for those undergoing course of training in the Mental Diseases Hospital.

INSTRUMENTS AND APPLIANCES FOR OPERATIONS.

By R. H. Castor, Lt. Col., I.M.S. 34 Pages Price Re. 1. Thacker Spink & Co., Calcutta and Simla.

The booklet gives a brief list of the different instruments required for different operations and a very useful guide to medical students and ward and operation theatre attendants. In addition to the list of required instruments for a particular operation, the author also gives particular position for each operation. This is a great help to beginners.

ESSAYS AND ADDRESSES OF DIGESTIVE AND NERVOUS DISEASES AND ON ADDISON'S ANÆMIA AND ASTHMA.

By A. F. Hurst, M.A., M.D., F.R.C.P., 306 pages. Price 21 net. Wm. Heinemann (Medical Books) Ltd., 20, Bedford Street, London, W. C.2.

The author records in the book his own views on the following subjects in which he has been specially interested during the last ten years, viz. Nervous disorders of the stomach and intestines, Gastric Diatheses, Addison's Anæmia, Achalasia, Ulcerative Colitis, Chr. appendicitis and appendicular Dyspnœa, Asthma, Contractures, Localised Tetanus, Hysteria, &c. These essays are very instructive and are an invaluable contribution to medical science. We commend the book to our readers.

DISEASES OF THE NOSE, THROAT AND EAR, FOR PRACTITIONERS AND STUDENTS.

Edited By A. Logan Turner, M.D, F.R.C.S. (Ed.,) Surgeon Consultant, Royal Infirmary and Senior Lecturer on Diseases of the Ear, Nose and Throat, University of Edinburgh, 222 illustrations and 12 plates. Published by John Wright and Sons, Ltd., Bristol. 20/N.

The present edition of A. Logan Turner's book has been considerably enlarged and many additional illustrations have been introduced. Some of the chapters have been entirely re-written and important new matter has been added. The addition of a detailed account of many of the minor and major operations, some of which have been graphically illustrated is really a great improvement of much use. A section on Endoscopy also has been added. The clinical anatomy of the various regions has been well dealt with with illustrations. The illustrations are really educative. The appendix deals with several excellent prescriptions which will be of great service to the student as well as the practitioner.

BOOKS RECEIVED.

The following books have been received and the courtesy of the Publishers in sending them is acknowledged. Reviews will be published from time to time. [ED. ANTISEPTIC.]

The Manager of the Antiseptic will be pleased to supply the readers any books acknowledged hereunder, or others at the Publishers' price. When sending their orders, the readers are requested to send a remittance for the full value of the book. That a remittance in advance should be requested is no reflection on the credit of any reader of the Antiseptic, but is simply a condition necessitated by circumstances.

Diseases of Nose, Throat and Ear.—By A. Logan Turner, M.D., F.R.C.S., Edin. Published by Messrs. John Wright & Sons Ltd, Bristol. Price 20s net. Pages 413.

A Compend of Genito-Urinary Diseases and Syphilis.—By Charles S. Hrisch M.D., Urologist to the Jewish Hospital Published by Messrs. P. Blackiston's Son & Co. 1012, Walnut Street, Philadelphia, with 44 Illustrations Price S. 2.00 P. 337.

Marriage and Syphilis :—By George M. Katsainos, B.A., M.D. Member, Massachusetts Medical Society, Fellow of the American Medical Association. Published by Messrs. Wright and Potter, New York, P. 162.

Lessons on the Care of Infants :—By Mrs. Watson with introduction by Benjamin Broadbent, C.B.E., L.L.D, M.A., J. P. Published by Messrs. Longmans Green and Co.—39, Paternoster Row, London E. C. 4, Price 6d. P. 19.

Sexual Health and Birth Control :—By Ettie A Rout with a Foreward by Sir Bryan Daukin, M.D.—Published by the Pioneer Press, 81, Farringdon St., London, E. C. 4. Price 1 sh. P. 71.

Pneumonia: Its Pathology, Diagnosis, Prognosis, and Treatment—By the late R. R. Murray Leslie, M.D., M.C.M.D. Edited and Revised by J. Browning Alexander, M.D., M.R.C.A. (Lon). Published by Messrs. William Heinemann (Med. Books) Ltd. Price 12s. 6d. net P. 351.

Manual of practical and X-ray work.—By John Muir, B. Sc. M. B. C. H. B. B. Sc., (Pub. Health) and Sir Archibald Reid, K.B E.C. M. G.M. R.C.S., L.R.C.P., D.M. R.E. and F.J. Harlow, B, Sc., F. Inst. P.A. R. C. Sc., Published by Messrs. William Heinemann (Med. books) Ltd. Price 31sh, 6d. net. Pages 524.

Monographs on Bio-Chemistry—The Carbo-Hydrates and the glucosides.—By E. Frankland Armstrong D.Sc., P.H.D., F.R.S. Published by Messrs. Longman's Green & Co., 39, Paternoster Row, London Price 16 S net Pages 293.

Fundamentals of Bio-Chemistry in Relation to Human Physiology.—By T. R. Parsons B.Sc, Lond. M.A., Cantab Published by Messrs. Heffer & Sons Ltd, Cambridge Price 10s. 6d. net P. 280.

Principles of General Physiology.—By Sir W. M. Bayliss M. A. D.Sc., Ltd. F. R. S. Published by Messrs. Longman's, Green & Co., 39, Paternoster Row, London E.C. 4 Price 28 S. net Pages 882.

INDEX TO ADVERTISEMENTS

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VOL. III. APRIL, 1925. No. 4

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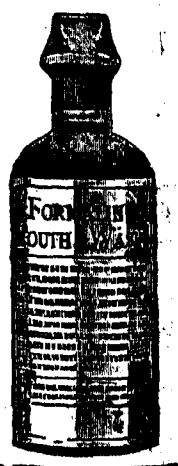

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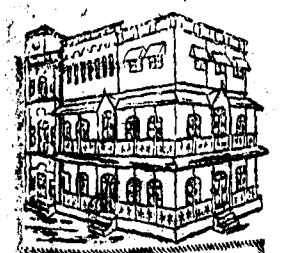

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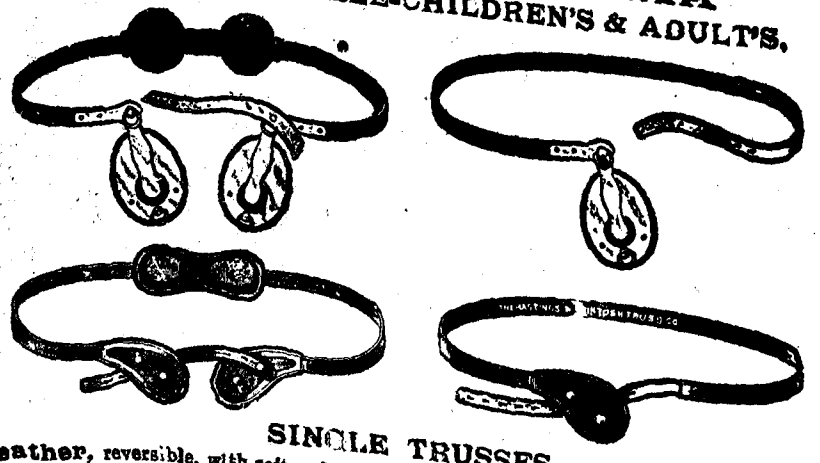

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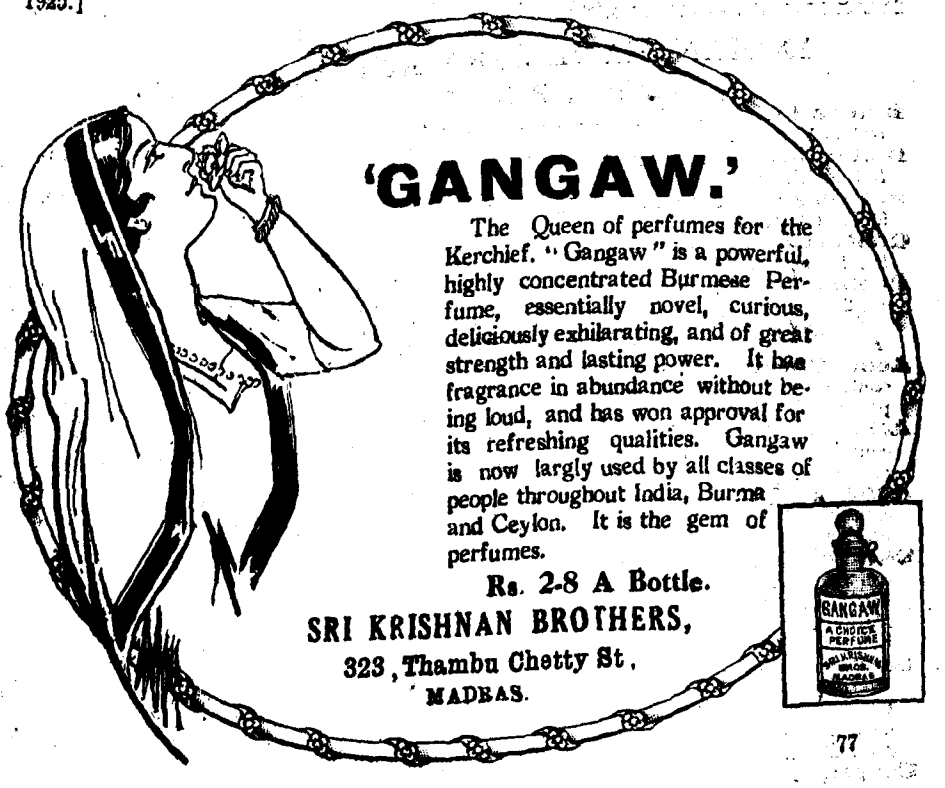

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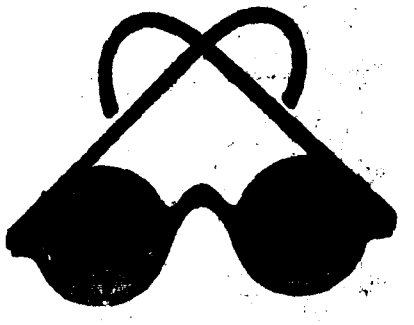

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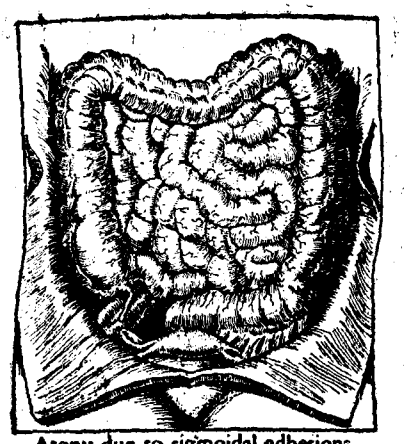
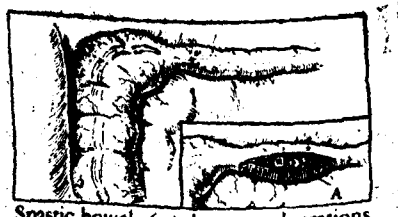


Atony due to sigmoidal adhesions



Spastic bowel; *(a)* showing ulcerations

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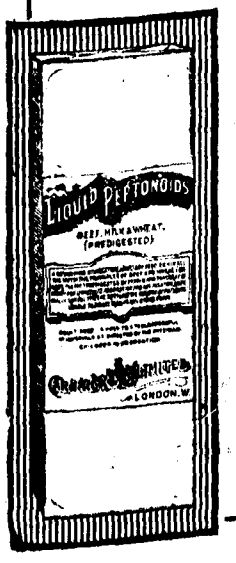

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ORIGINAL ARTICLES.

* THE PITUITARY HEADACHE

By

JOHN A. GLASSBURG, M.D.,

ASSISTANT ATTENDING RHINOLARYNGOLOGIST TO ST. JOSEPH'S HOSPITAL AND THE NEW YORK CITY CHILDREN'S HOSPITAL; SURGEON, EAR, NOSE AND THROAT, STUYVESANT POLYCLINIC; ASSISTANT, EAR, NOSE AND THROAT, BROAD STREET HOSPITAL.

Headache is one of the most common symptoms for the relief of which patients present themselves to the specialist. With the tremendous strides made in rhinolaryngology, sinusitis and intranasal obstructions have come to the fore as etiological factors of headache. Surgical intervention has been of definite and undisputed value but it is well-known that many patients who undergo nasal operations are not relieved of their symptoms, irrespective of how good the mechanical result or how good the workmanlike. Often this is due to the injudicious choice of the type of operation and still more often due to the injudicious choice of any operation at all. This unnecessary operating is not due to wilfulness or surgical unscrupulousness, but due to a lack of knowledge of the underlying cause and a consequent wrong diagnosis.

The majority of rhinologists examine the nose, the sinuses, the ears, the pharynx and the larynx; take a few notes relative to the symptoms; draw a few sketches, graphically recording the deflected septum, the spur or enlarged turbinates, the affected sinuses, the gross pathology of the tonsils, the vocal cords, the arytenoids, the character of the ear drums; run through the functional tests of the ear and there the clinical and physical examinations usually cease. If the complaint is due purely to a

*Specially contributed to "The Antiseptic".

mechanical obstruction or an infected sinus such a brief examination may suffice, but often this is not the case, and we may have a nasal obstruction or an infected sinus coincident with an entirely different constitutional ailment, and this ailment may be the cause of the symptoms.

In such cases, removal of the nasal obstruction or cleaning out the sinus will, of course, have no effect because the cause of the symptoms has not been reached. There is about as much reason for operating in these cases and expecting good results as there would be for a syphilologist in exciting the chancre and expecting a cure of the syphilitic infection. Therefore, in order to render the patient the best possible service, to reduce the number of operative failures and to gain the personal satisfaction of a job well done, it is necessary to obtain a complete anamnesis, do a thorough physical examination and employ all the modern laboratory aids at our disposal.

The majority of the chronic cases seen in the clinic or office of the rhinologist present one of four cardinal symptoms, either separate or associated; first, headache; second, tinnitus; third, inability to breathe well, with either an increase or a decrease of nasal secretion, causing either an excessive moistness or an excessive dryness; fourth, a dripping of mucus into the pharynx.

This article is limited to the discussion of the cases of headache and an attempt will be made to distinguish a certain type of headache, which is not all nasal in origin, but often seen in rhinological practice. This is the pituitary headache due to a disturbance of the secretion of the pituitary gland. This type of headache is recognized by endocrinologists as a diagnostic entity, and should be carefully studied.

The study of the pituitary gland is comparatively recent. Only about thirty-five years ago the pituitary was still considered a rudimentary vestige, a non-functionating cerebral appendix, a vestige. In 1889 Marie (1) associated an enlarged hypophysis with acromegaly. About the same time Minkowski (2) in Berlin discovered the same relationship. Then Howell (3) in 1898 extracted an active secretion from the posterior part of the gland. The anatomy of the gland was worked up by Swale Vincent (4) who found in it structures similar to the adrenal cortex, the islets of Langerhans, the thyroid, the thymus and the interstitial tissues of the ovaries and testes. Schafer (5) added to the anatomical knowledge and especially showed the great vascularity of this organ. To this was added the work of Tilney (6) in 1911, which gave a clearer insight into the minute and detailed structure. But it was Harvey Cushing (7) who in 1910 produced his epochal study on the pituitary, who gave us the modern conception of the physiology and clinical manifestations.

To illustrate the headache due to this particular disturbance of the internal secretions I am reporting two cases, both of which were referred for treatment of the nose and throat; one in a child and one in an adult. These cases demonstrate the necessity of a thorough general examination and a differential diagnosis before operating on nasal conditions associated with headache.

Case 1.—Rosalind M. thirteen years old, complained of headaches for the past two years. A year ago she had a tonsil and adenoid operation, the surgeon telling her that he believed the headaches were due to the adenoids. The patient came to me on March 20, 1921, complaining of headache located over both temporal regions and a dull ache over the site of both frontal sinuses. There was no tenderness on pressure. In addition, she complained of shooting pains in her ears.

Upon close questioning it was discovered that she felt very sleepy most of the time, being overcome every afternoon with a feeling of lassitude, that she became markedly fatigued on slight provocation, and her school work was not up to the mark. In addition, she had gained thirty pounds in the last eighteen months. She was very shy, blushed easily, and was very sensitive about her weight.

The family history showed that her father was six feet one inch in height and weighed 210 pounds and her mother was five feet ten inches and weighed 190 pounds, two maternal aunts were about five feet ten inches in height and weighed 180 and 185 pounds respectively. There were no siblings.

The personal history was apparently negative. She was a normal delivery, a full term pregnancy, no instruments had been used, and she weighed six and a half pounds at birth. The only disease she had ever had was measles at three years of age, from which she had an uneventful recovery. As yet she had not menstruated. She began school at six and reached the 6 A grade at twelve years with no difficulty, but with the onset of her headaches her school work became poor and she was depromoted twice, being at the present time only in the 6 B grade, which is one year behind the regular grade for her age.

The examination of the nose showed a straight septum with moderately enlarged inferior and middle turbinates, but plenty of breathing room. The mucous membrane appeared normal. The sinuses transilluminated well. The ears showed a slightly dull color, but were otherwise negative. The interdental spacing was pronounced. The palate was high, narrow and arched. The gums showed no pyorrhoea. There was some slight amount of tonsil tissue present at the bases of both tonsillar cavities. The examination of the posterior pharynx showed that there was some adenoid tissue left over. There was no tenderness anywhere on the head.

smooth, delicate, but somewhat dry and flabby. The hair on the head was very fine, silky and abundant. The eyelashes were bushy and the eyebrows were thick. There was a slight amount of hirsuities on the upper lip. The chest and abdomen were covered with a fuzz of hair. The pubes showed the masculine vertical distribution, the hair extending to the umbilicus, forming a pyramid on the lower abdomen instead of the usual female distribution limited to the mons veneris. The hands and feet were small, the fingers short and stubby, the nails thin and small. The sexual apparatus was normally developed, but the patient revealed a lack of erotic emotionalism, taking no interest in intercourse, participating in the act as a marital duty. The fundi were negative. There was no visual field contraction. The cranial nerves were intact. Neurological examination was negative with the exception of a pronounced dermographia. Examination of the heart, lungs and abdominal viscera revealed no abnormalities. The pulse was 65, the temperature 98·4 and the blood pressure, systolic 108 and diastolic 90.

The urine was negative and the ingestion of two hundred grams of glucose showed no sugar reaction, the urine being examined every hour for six times. This test was repeated with three hundred grams of glucose and the same result was obtained, showing an increased sugar tolerance. The blood examination showed: hemoglobin 80, red blood corpuscles 4,200,000; white corpuscles 6,000; differential: polymorphonuclears 63, small mononuclears 32, and large mononuclears 5. The Wassermann was negative. Stereoscopic radiographs of the skull showed a small sella turcica, and the clinoid processes were bridging over and almost meeting. There was no evidence of intracranial pressure. The frontal sinuses, the sphenoidal sinuses, the ethmoid sinuses, and the right maxillary sinus appeared normal, the left antrum was clouded.

In summary, this patient also presented the typical dyspituitary symptomatology, in this case consisting of deep frontal and bi-temporal headache, muscular weakness, drowsiness, fainting spells, small stature, general hypertrichosis, disturbed menstruation, decreased sexual desire, increased sugar tolerance, lowered metabolism shown by the low pulse, low temperature, undeveloped teeth, bones and nails, and bridging clinoid processes with the small sella turcica.

The treatment of the headache in both of these cases was a simple matter for the treatment of dyspituitarism is specific and the specific is the pituitary gland. Cobb (10) uses in addition the extracts of other organs, for often when one endocrine organ is affected the other endocrine organs are involved. Beck (11) reported four cases of hypophyseal disturbance, and in addition a large number of hypothyroid cases, twenty per cent. of which showed hypopituitarism and nearly all of which showed hypovarianism. He

employed with successful results, Hormotone, a combination which contains all three substances, pituitary, thyroid and ovarian extracts. Pardee (12) reported seven cases of pituitary headaches which responded to treatment using pituitary extract alone.

The dose of pituitary extract is an individual problem. There is no average dose. Some patients will thrive on a grain daily, while others may need three hundred as in one of Cushing's cases. Cushing (13) proposed that the rational dose "be determined by giving the individual daily an amount of glucose sufficient to produce a temporary mellituria in a normal individual of equal body weight; meanwhile an increasing amount of the extract is daily administered, until under the condition of the increased carbohydrates toleration which the patient develops, hyperglycemia occurs with a trace of sugar in the urine." This method is rather too complicated for ordinary clinical use. The best way is to begin with a small dose, increasing gradually, meanwhile using as a guide the increase in blood pressure.

There are three routes by which pituitary extract may be given. Maranon and Rosique (14) reported the case of a bullet wound in the midfrontal region which developed Froelich's infantalism and was greatly benefited by the injection of pituitary extract. In the cases that I have treated I have rarely had recourse to hypodermic medication.

In the first case described, treatment was begun with one and a half grains of pituitary extract, three times a day, by mouth. This was increased by half a grain three times a day, until finally fifteen grains daily was given. This last dose was sufficiently large, for with this dose the headaches were controlled. On cessation of the extract, the headaches reappeared. On continuing the extract, the headache stopped again. At the present time the girl has no headaches and has lost ten pounds in weight.

In the second case presented, in order to eliminate the left maxillary antrum which was cloudy and, therefore, a possible etiological factor, the trocar and cannule were introduced, the antrum was irrigated but it was found to be clear. This is not an unusual condition. Quite often when the X-ray of the maxillary antrum shows a shadow, no pus is obtained upon irrigation. The patient was given the pituitary by mouth, beginning with four grains of the extract daily. This was increased to six grains, then to eight grains and finally to nine grains. This last dose was sufficiently large to control the symptoms, for in four weeks the headaches stopped. As in the first case, when the extract was stopped, the headaches reappeared, and on continuing the extract the headaches stopped again. This patient in the last six months, in addition to having been relieved of the headaches, has lost six pounds. Her blood has risen to systolic 118 an

Physical examination revealed a girl five feet in height, weighing 145 pounds, the adiposity being relatively well distributed. The skin was somewhat dry, delicate, smooth, and puffed with a slight loss of elasticity. The complexion was of the peaches and cream variety. The hair on the head was very fine and abundant. The hands and feet were rather small, the fingers pudgy and the nails thin and small. The fundi were negative. There was no visual field contraction. There was an exaggerated dermographia. Nuerological examination was negative. Examination of the heart, lungs and abdominal viscera was negative. The pulse was 62, the temperature 98 and the blood pressure, systolic 104 and diastolic 86.

The urine was negative and the ingestion of one hundred grams of glucose showed no sugar reaction, the urine being examined every hour for six hours. This test was repeated with two hundred grams of glucose with the same result, thus showing an increased sugar tolerance. The Wasserman was negative. Stereoscopic radiographs of the skull showed the sella turcica to be larger than normal and erosion of the posterior clinoid processes. There was no evidence of intracranial pressure and the sinuses appeared to be normal.

In summary, the case presented the typical symptomatology of a perverted pituitary secretion, to which Cushing gave the name of dyspituitarism. Dyspitutarism is a combination of hyperpituitarism and hypopituitarism. Usually, in addition, other endocrine glands are involved, producing Timme's (8) polyglandular syndrome. This is best understood by reference to the pathology. Dyspituitarism is dynamic. The usual course is an initial enlargement of the anterior lobe, accompanied by the consequent signs of hyperpituitarism. The signs of the hyper stage remain, though the hypersecretion itself may cease due to ensuing destructive changes in the enlarged gland. This degenerative process will now give rise to hypopituitarism or, according to Schafer (9), even to a pituitarism, and the signs of decreased or absent function will supersede. These dynamic conditions are included under dyspituitarism.

In the case described above, the symptoms were frontal and bitemporal headache, general lassitude, muscular weakness, small stature, adiposity, delayed menstruation, lymphoid overgrowth, mental retardation, increased sugar tolerance, lowered metabolism shown by the low pulse, low temperature, low blood pressure, poorly developed teeth, bones and nails, and the enlarged sella turcica with eroded clinoid processes.

Case II.—Maria F., thirty-five years old, complained of headache for the last six years. Three years ago she had undergone a right middle turbinectomy. This was followed six months later by a submucous resection of the septum. Three months later the left middle turbinate was

removed. A few weeks later both maxillary sinuses were opened and irrigated daily. This irrigation lasted for two months. At a later period the frontal sinuses were probed, opened and washed. The last operation, fourteen weeks ago, was a complete exenteration of the ethmoid cells and the remaining portion of the middle turbinate on the right side. These operations had been performed by various men, each attempting relief of the headaches and all met with uniform disappointment.

The patient came to me on January 19, 1921, complaining of headache referred to both temporal regions and keenly felt as a constant, boring, dull pain in the mid-region of her forehead, about three quarters of an inch above the bridge of the nose. To use her own expression, this pain was "way down deep in the nose." Upon further questioning it was brought out that she suffered from drowsiness, numbness of the hands and feet, backache, muscular weakness, loss of strength, marked fatigue on slight provocation, fainting spells, and a rapid gain in weight, gaining thirty-five pounds in the last year. She had begun to menstruate at thirteen years of age, flowed four to five days at a time, was markedly irregular in her periods, sometimes flowing four days after her time. At times the flow was scanty, just spotting, and at other times it was copious. It is interesting to note that it was copious when the intermenstrual period was shorter and was scanty when the period was prolonged.

The family history showed that none suffered from the same or any special disease. Both of her parents were living and well, one sister died of influenza. As far as could be ascertained, the patient was a normal delivery, a full term pregnancy, no instruments had been used and she had always been healthy, except for an attack of scarlet fever at the age of eight, from which she made an uneventful recovery.

Examination of the nose showed a straight septum, the absence of both middle turbinates and the presence of an atrophic rhinitis. The sinuses transilluminated well with the exception of the right maxillary sinus. The ears showed a slight retraction and a dull color. The landmarks were prominent. The teeth were small and showed a marked horizontal grooving, particularly of the incisors. The interdentals were wide, and several molars were missing but those present were in good condition. The palate was of moderate height and width. The gums showed no pyorrhea. The tonsils were small and cryptic, but showed no evidence of infection. There was therefore nothing in the ears, nose and throat to account for headaches. Practically everything had been done but the headaches still persisted.

A general physical examination showed a woman, thirty five years of age, who was five feet three inches and a half in height and weighed 190 pounds. The adiposity was uniformly distributed the skin was

diastolic 96. Her pulse is full and bounding and about 70. She is more active, the fainting spells have ceased, and she feels rejuvenated.

Now, even he who runs can read that these headaches were anything but nasal in origin, that they were part of the general picture of dyspituitarism and that all the nasal operations were useless.

In concluding I wish to emphasize the fact that there is a definite, distinct type of headache—the pituitary—which is met quite often in rhinological practice; that this headache is due to disturbance of the secretion of the pituitary glands; that it may exist coincident with nasal pathology; that it is entirely independent of this pathology; that it is not relieved by nasal operations, but responds to specific endocrine medication and finally that in order to diagnose this type of headache and render proper treatment, thus eliminating unnecessary operations, it is absolutely necessary for the rhinologist to obtain a complete anamnesis, to do a thorough physical examination, and to employ the laboratory aids requisite.

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* OIL—ETHER ANÆSTHESIA

BY

PRABHAS CHANDRA BANERJEE, M.B.

Anæsthesia now forms a special subject which is generally dealt by the specialists. Though I do not claim to be a specialist in the line I may be allowed to say something about the same on account of my association with the Medical College of Bengal as a Senior House Surgeon to the institution for a few years. I desire to deal with the subject which is much neglected in this country, regularly in the "Antiseptic". I shall deal with "Oil Ether Anæsthesia which is talked of so loudly now a days.

It is a very efficient form of general anæsthesia for keeping the patients 'under' in a particular set of operations, *e.g.*, the operation of the face and neck, and the cavity of the mouth as for example tongue, palate, growths in the oral cavity. It is said that the disadvantage of this form of anæsthesia is the time-limit which is given as only half an hour, but I have seen several cases where the patients were operated upon for more than an hour or so. I think it can be employed with impunity in bigger operations as the removal of jaws etc., which I have seen being done. The best advantage of the Oil Ether method in the operations of the face, neck etc., is that the presence of the anæsthetist with his apparatus,—mask etc., can be easily avoided and it gives the surgeon and his assistant far more free scope to deal with the case. The present day theory of asepsis is more maintained by avoiding the additional hands of the anæsthetist. Furthermore another great advantage both to the surgeon and the anæsthetist is that the head and neck of the patient can be moved in cases of operations of the face and neck without interfering with the respiration of the patient.

This special form of anæsthesia cannot be administered without "preparing" the patient. So it is not of any use in the emergency cases. There is nothing special about the selection of the cases. Only thing of importance is to remember that ether causes more free secretion from the lungs than chloroform. So all cases with lungs trouble must always be avoided. The cases who are easily prone to catarrhal conditions of the lungs are also bad subjects. Careful history will elicitate the matter easily. It can be employed on the young and the old without age

*Specially contributed to "The Antiseptic".

restriction. It is always safe to inject gr. 1/60th of atropine sulph, about half an hour before the time of operation. Same dose of atropine may be injected after the operation as well with an advantage of lessening the secretions of the lungs.

PREPARATION OF THE PATIENT.

Patient should always be weighed in lbs. For two days before the operation patient should be given only liquid diet. On no account whatsoever the patient should be starved as it will do the same harm which the anæsthetist always wants to avoid *e.g.*, acidosis.

About 24 hours before the appointed time of operation give the patient a dose of oil; the same evening give a high soap water enema which adds much to the comfort of the patient. As usual the patient must not be given any food on the morning of the operation. If very anxious, the patient may be given a cup of weak tea or a few sips of warm milk, and that also at least two hours before the appointed time of operation. Otherwise it would cause a good deal of nausea or retching sometimes. Early morning, say two hours before the sun rises, give the patient another soap water enema. Next procedure is the bowel-wash which is rather a tedious process for the patient as well as the nurse, but it must be done with exactitude; otherwise it will give trouble at the time of operation by blocking the eye of the catheter. Ordinary warm Boric Lotion or tepid (as can be borne) water should be used. It is to be continued till the fluid comes clear. It must be completed half an hour before the operation. Some patients complain very badly about the soreness of the rectum, and in such cases sterilised vaseline or Boro-vaseline should be used as an emolient. It is the best of all the lubricants as glycerine causes burning sensation in a majority of cases. Ordinary bland oil may be used *e.g.*, coconut oil.

Some surgeons give Scopolamine or morphia or both in their proper doses according to the age etc., about half an hour before the operation. Some surgeons do not give either Scopolamine or morphia; but I have seen best results with their administration than without. It does not give any untoward effect but on the other hand lulls the patient slowly and gradually who sleeps as if in a natural sleep when taken to the anaesthesia room; and there is no Excitement Stage so to say which is common in cases without the injection, which is of best advantage to the patient and the surgeon and his assistants. In a Teaching Institution students should be allowed in batches of a few to watch the procedure adopted so that the patient goes to sleep without being embarassed by being surrounded by a regular crowd around him.

When the patient is brought to the Operation Table, the Oil Ether mixture is to be slowly introduced per rectum through a rubber Catheter

attached to a rubber tube by a glass connection with which is attached a glass funnel through which is poured the Oil Ether mixture.

MIXTURE OF OIL-ETHER.

The mixture should be prepared before hand. Any bland oil should be selected *e.g.* olive oil, almond oil or oil arrachis (which is much cheaper). I have never seen Coconut oil being used as a base. I shall be glad if any of the readers has any exeperience with it, or has experimented upon it. Pure ether must be used. The mixture is made in the following proportions:—For children below the age of ten the proportion would be three of oil and one of ether. For ages between 10 and 18 equal parts of oil and ether, and for adults including old age three parts of ether and one part of oil. The oil and the ether being properly measured should be put in a stoppered bottle and well shaken so that they are properly mixed together. This mixture is known as Oil Ether Mixture which should always be freshly prepared and should not be kept in stock as "stock mixtures". About six to eight ounces of this mixture is required generally.

The dose is calculated in the following manner: —One ounce for every twenty pounds of body weight plus two or three ounces of the oil ether mixture for personal idiocyncrasy of the individual. This mixture should be very slowly introduced per rectum through the catheter rubber tubing and a funnel arrangement, only half the dose being introduced at first. The funnel arrangement must always be kept in action so that in a minute's notice more of the mixture may be added or some may be syphoned off as the necessity would arise. This arrangement acts as the "control" during the progress of the anæsthesia and operation. It generally takes more than half an hour to bring the patient 'Surgically under' and as already stated it can be safely continued more than an hour with impunity. The patient breathes in and out quietly. If the patient is not quite under, it may be supplemented by a few whiffs of chlorofrom in the beginning which may be necessary in those cases where scopolamine or morphia is held out. In this method of anaesthesia there must be an assistant to the anaesthetist who helps him by keeping the apparatus high or low as the case demands. The anaesthetist must be careful that he is not overdoing the thing by allowing the absorption of Ether more than what is necessary which can be judged by occasional examination of the pupil and the conjunctival reflex which is not often necesssary.

When the operation is finished the mixture is syphoned off and another additional catheter is inserted in the rectum which acts as the outlet during the process of washing of the lower bowel which should be continued till the returned fluid is absolutely free from the smell of ether. This washing of the lower bowel may be done in the bed with advantage. The patient

sleeps a natural sleep for several hours and so the shock of operation is much the less. Furthermore there is very little nausea or vomiting as after choloroform patient comes out very slowly. Atropine gr. 1/60 may be given with advantage. The smell of ether hangs around the patient for a few hours which is not so much complained of as in the case of choloroform or A.C.E. mixture. Patient should be propped up after a few hours to avoid respiratory troubles.

I shall be glad to receive suggestions in this matter which should be addressed to me to my private address.

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* PNEUMONIA TREATED BY AUTO-VACCINE

By

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The achievements of Wynn and others in the field of vaccine therapy applied to Pneumonia cases promise to revolutionise the treatment of this disease by the prompt diagnosis and a timely call on the defences of the body to bestir themselves before it is overpowered. With justifiable enthusiasm, Wynn advocates the inducing of active immunity by vaccines in the early stage, basing his conclusions on his observations of over two hundred (200) cases so treated. In the cases so treated on the first day of the disease, he was able to record that the temperture dropped to the normal in 48 hours or less. This is really an achievement, and would stimulate other workers in this field of therapeutics. My own observations on cases of Pneumococcal infection lend support to this claim. In my work, which is chiefly on the lines of Clinical Bacteriology and Immune Therapy, I have been able to gather some information, though often incomplete, on over 500 cases where Auto-vaccines were prepared in this laboratory for various bacterial diseases. Pneumococcal infections were revealed, in throat and pulmonary affections, in peritonitis, in uterine sepsis, in cystitis, urethritis, conjunctivitis and others. Pneumococcal Pneumonia is unquestionably the most important of these conditions; and one's experience, howsoever limited, has to be laid before the profession who handle a large number of cases of this disease every day.

In addition to the mechanical impediments imposed on the pulmonary circuit, a pneumococcal infection of the alveoli of the lungs attacks the functions of the vital organs, by the toxins or poisons formed as a result of the bacterial invasion. The toxins are either the toxins generated by tissue destruction through the agency of the pneumococci, or, they are the "endotoxins" resulting from the destruction of the pneumococci that are worsted in the fight. Very likely both

* Specially contributed to "The Antiseptic."

these sets of poisons are the cause of what constitutes the syndrome of a "pneumonia". But, while we exclude from the symptoms of a pneumonia those characters (such as fever) that are common to most other bacterial infections, there remains for our special attention the all-important symptom of cardiac embarassment or failure, purely caused by the pneumococcus and its toxines. The Pneumococcus and the toxins elaborated by it, have, in other words, a selective affinity for the heart, be it on the myocardium or on the nervous mechanism of the heart.

The treatment of a pneumococcal pneumonia, therefore, virtually amounts to a fighting of these toxines, by restricting their production and output into the circulation, or by attempts at their neutralization, while cardiac paralysis is warded off by other measures. The symptomatic treatment of complicating pleurisy, pyrexia, delirium, heart weakness &c. appear to be really a pursuit of the thief with hue and cry *after* he has had a start with all the valuables of our cup-boards! Rather than merely attempt to repair ineffectually the damage that is being done by the enemy beyond our reach, our aim should be to intimidate him or catch him red-handed as it were, and prevent further harm to the tissues before it is too late, by stimulating tissue resistance by every means at our command. Despite the useful adjuncts in treatment such as the poultice, the cold sponge, or the sedative, or the cardiac stimulants, the case mortality of pneumonia has been long left practically where it had been decades ago. Symptomatic medical treatment has gradually to be supplemented by or to give place to, the more rational mode of treatment that reckons with the organisms causing the disease and their special toxins that invoke the characteristic symptoms. Pneumonia should be looked upon essentially as a general toxaemia rather than as of local pulmonary consequence. The unrestrained Pneumococci cause the symptoms in the acute case, as they do in the partially recovered case.

The pneumococcus is an acknowledged enemy of the heart and nerve cells, so much so that some physicians, in panic, commence digitalis medication early against the much dreaded cardiac failure. Is it impossible to keep this enemy out of harm's way? Are there no means of dealing with him once he effects entry into our tissues? And once established into our tissues, can we not check him from further damage to the vital organs?

Bacteriology:—Here I may mention a few facts personally observed in my experience in throat and sputum cultural work, in cases of acute and chronic affections. The *Pneumococcus* is found in almost every throat that passes for a "normal" healthy one, with a number of other organisms. For this reason, medical men give little importance to a bacteriological finding of this organism in the throat or sputum. But it is necessary to

make a distinction between a pneumococcal finding with acute or subacute symptoms usually caused by this germ, and the same finding without any such symptoms of respiratory catarrh, oral sepsis &c., In our family and society, especially in the towns, a "cold" in the head and a sore-throat is inevitably passed on from mouth to mouth, and there will be very few of us who are free from this coccus or the streptococcus in our throats. In the normal throats that harbour the pneumococcus, these organisms are playing a saprophytic role, or, are restrained in their activity by the general and local resistance of the person. Evidences suggest that they can suddenly assume a parasitic attitude under favourable conditions designated "lowered resistance of the individual". We know that our epithelial cells turn against us and become our malignant cancerous enemies when conditions favour them. It is not difficult to imagine then, that a stranger organism that is with us proves our treacherous foe. The cultures, the pathogenicity and the virulence of the pneumococcus are not difficult to make out. Once the suspicion has fallen on the throat or the organs of respiration from the symptoms the sputum or a throat-swab should be examined. A fair number of cocci phagocytized within leucocytes and epithelial cells indicate that the organisms are in the offensive and are not merely saprophytes at the time. A film of the sputum or a throat-swab stained by Gram's method will show this easily. Inoculation of an animal for testing virulence is not usually necessary. I have observed, that, when Pneumococci are causing symptoms, and especially acute symptoms like those of a Pneumonia, the colonies on the blood agar surface are extremely profuse (often hundreds of them on the cultural surface), with each colony fairly well developed in 24 hours. Contrasted with these are the fewer colonies of poor growth obtained from saprophytic Pneumococci. Another, and yet more important, indication of virulence is the length of the chains of Pneumococci noticed on staining. In acute Pneumonia cases the chains are very long and abundant; in the chronic cases, or where the cocci are saprophytic or harmless, the chains are very short. In one case where cultures were carefully studied, the chains were enormously long in the acute stage, and very short a month after recovery under auto-vaccines. Indeed, in some instances, I have been directed to an acute Pneumococcal infection by the character of the chains alone. I remember the case of a woman with puerperal fever gave the colonies and chains of Pneumococci (from a uterine swab) as above described; and the auto-vaccine saved her life. Recoveries from the infections of the respiratory tract were numerous and will be referred to. Elaborate bacteriological examinations are not necessary to arrive at the diagnosis. The above simple examinations are all that are required for the treatment of the cases, by auto-vaccines,

Diagnosis:—Almost cent per cent of cures are claimed if a primary pneumonia is diagnosed quite early, and the vaccine treatment at once resorted to. It is of vital importance therefore to be able to arrive at the diagnosis on the 1st, 2nd, or at the latest, the 3rd day, if we are to expect to abort the disease. To wait for the percussion dulness of hard consolidation is to miss the favourable period for vaccine treatment. The immune bodies induced in the plasma by the stimulus of the vaccine, cannot penetrate the consolidated lung to any depth to counteract the bacterial mischief. It stands to reason, therefore, that the contents of the alveoli must be in a fluid and flowing condition if the best results are to be got. And this is what is observed in practice. The congestive and pre-consolidation stages are the opportune moments for vaccine therapy. But consolidation may be effected in a few hours in severe attacks; it usually takes about 24 hours. This renders the early diagnosis all the more difficult. However, in a good many instances, the possibility of a pneumonic complication should be kept in view. Bronchitis, coryza, whooping-cough, Tuberculosis and other debilitating affections suggest a careful watch for the pneumonic complication; and the earliest signs particularly taken note of. In a typical pneumonia of the lobar variety, there is a frank and sudden febrile onset with a continuous high temperature. There is marked and intense toxæmia which is not seen in a bronchitis. The dyspnoea, the pleuritic pain with its lateral decubitus, the unproductive cough, the anxious expression with the bright eye and an active attitude, are all points that help in the diagnosis. Physical examination would show immobility of the affected side, the hyperresonance of engorgement on percussion, the suppressed breath sounds with the fine crepitant rale at the end of the inspiratory act. The voice sounds are normal or feeble in the early stages; they become resonant bronchophony once consolidation has taken place. The lobar incidence of these signs is itself suggestive. Once the suspicion of pneumonia is well grounded, an examination of a blood film should be undertaken. Polymorpho leucocytosis will be marked. It may be possible to get cocci on a throat swab in the early stage; if it is successful, the cocci display phagocytosis and signs of virulence such as very long chain formation.

The differentiation from acute tuberculosis, bronchitis, pleurisy, broncho-pneumonia, hypostatic pneumonia and similar conditions, is generally not difficult.

Prognosis by vaccine treatment:—Cent per cent. of the cases diagnosed on the first day and treated with vaccine are reported to have become normal in 48 hours; 83 per cent. of these cases had normal temperture even before the 2nd day, that is in 24 hours. Of cases diagnosed and treated on the second day, 93 per cent. became normal in three days. Of

those treated on the third day, 73 per cent. were normal within three days. With each day's delay, therefore, the rapid defervescence becomes less likely, and the dose may have to be repeated every 24 hours. When the injection is delayed until the fourth day or later, little can be expected of vaccine therapy, for the reason that the coccal toxins have already damaged the heart and nerve-cells. Wynn makes the observations just stated above. There is no doubt, that, when the cardiac muscle has become exhausted and fails to respond any longer to stimulation, vaccine is contra-indicated. Indeed, the attempt at inducing an immunizing response at such an inopportune juncture may prove to be very taxing and even fatal. You cannot expect anything in the nature of an effort at "pulling through" the crisis, on the part of an organism exhausted and wavering. At the same time, I have found that the case need not be considered unsuitable for or beyond the scope of vaccine treatment, provided the area of consolidation is not extensive, the toxaemia not intense (as indicated by the respirations, the mental condition &c.), the cardiac tone is revivable by tonics and maintainable until such time that a negative phase can be tided over after a dose of vaccine. Judgment should be exercised after a full consideration of all these factors. A falling leucocytosis is of bad import; a high and sustained leucocytosis should be encouraging. Of course, complications alter cases. Experience should be our guide. If the heart is making a plucky bid for life, and the case is likely to become desperate, a guarded dose of vaccine must be tried, with reservations as to the prognosis.

Treatment:—Active immunization with vaccines appears to be quite safe if applied early unless there are contra-indications. Remembering that our aim is to fight the toxins and the cocci that produce the toxins, we endeavour to neutralize or dilute the toxins, and to check the coccal activities by the induction of immunity. In the early stage, the amount of toxin may not be much, and this may be expected to be eliminated in the usual manner. But the production of more toxins has to be restricted at the earliest moment, by arresting the coccal mischief. This is what is aimed at by vaccines. It is in effect aborting the Pneumonia when the heart and the nervous system are little affected and the pulmonary alveolar contents still in a more or less fluid condition favourable for absorption. Sodium citrate and Potassium Iodide have been used with vaccine treatment, to facilitate the absorption, after liquifaction, of the alveolar exudate. As for the vaccines, I have used stock vaccines with Pneumococci and streptococci in most cases, for the first dose, until the auto-vaccine is ready. Wynn advises 100 million Pneumococci for an adult (40–50 millions for children of twelve years) for lobar Pneumonia. I

have used ordinarily 50 million Pneumococci and 25 million streptococci in an average case, if it came before me before the third day. The auto-vaccine can probably be got ready in 24 to 48 hours. In sthenic patients the larger dose of 100 millions appears to be preferable, especially before the third day. Later on, the doses must be proportionately diminished, in my opinion, so as to minimise the intensity of a negative phase. Each case is to be judged on its own merits, as already mentioned. The system of fractional dosage has much to commend it. If the usual first dose recommeded is 50 million pneumococci, one half of this is injected first, and the patient watched from hour to hour. The absence of signs of the negative phase in twelve hours is the sign for the injection of the second half of the dose after the twelve hours. The improvement noticed is to be followed up in 24 hours with another dose, not exceeding 100 millions, in case the effect of the first dose is wearing off. Instances of hypersensibility to pneumococcal vaccine are encountered occasionally. Rheumatic joint affections due to the pneumococcus react with special severity, even with a dose of 5 or 10 million cocci. Concomitant tubercular infection also evinces some intolerance to this vaccine, although in a less degree. In these patients, therefore, the fractional dosage plan is preferable. The general medical treatment adopted should have as its object, the elimination of toxins by diluents and alkalies, the increasing of the blood flow to the part affected by the application of warmth, the maintenance of the proper reaction and fluidity of the blood by citrates etc. so as to favour the performance of the immunity reactions, the speedy absorption of the resolving exudate by means of iodides, the stimulation of an embarassed heart by cardiac stimulants, the sustaining of the strength of the patient by adequate remedies (alcohol, glucose, etc), and the attention to symptoms as they arise.

Indiscriminate cardiac stimulation is objected to by many physicians. The premature administration of powerful cardiac stimulants may induce overaction of the heart which is likely thereby to be exhausted before the critical period when its strength is most needed. The driver should reserve the goading of his horse for the steepest climb of the journey. To belabour the animal prematurely may exhaust the animal before it reaches the critical spot. It must be admitted that very few cases of Pneumonia come within the sphere of the Bacteriologist in the early congestive stage. What I wish to emphasize is the fact that most of the chronic pneumococcal catarrhs of the respiratory passages should be considered as potential cases of pneumonia, and that any acute exacerbation of the catarrhal symptoms should be promptly met by active immunization by the auto-vaccine. The potentialities of the common pneumococcus of the throat or of a phyorrhoea are not recognized as they deserve to be. "The Pneumococcus is to be

found in many throats in health; it is being made too much off!" says the cynic. The reply to this is that so many human beings who harbour these cocci still die of pneumonia. By analogy we may ask: "Why then notice the colon bacillus, which is normally a saprophyte in the bowels, but which compels our attention when it invades the bladder or the kindney upon occasion?". A number of cases of pneumococcal catarrah came under my care and my practice has been to treat them by auto-vaccines at first, until the acuteness of attack is passed and a certain amount of protective immunity is established. For months afterwards, I treated the patients with occasional doses of the auto-vaccine in the susceptible seasons and whenever they developed a catarrh.

And my impression is, that, I have, by this means, often warded off a Pneumonia. The vaccine has also rendered yeoman service in clearing up retarded resolution and remnants of active focci following pneumonia. The doses repeated for this purpose vary from 100—300 millions or more. Before concluding I shall here cite a few typical cases treated by me.

Case 1. Woman of 25. Two of her children were down with whooping cough; one of them gave pneumococci in the sputum on culturing. The mother suddenly developed pneumonic symptoms one day, with dyspnoea and physical signs in one lobe of the right side. A dose of stock vaccine composed of 25 million pneumococci and 10 million streptococci brought the temperature down to the normal in 24 hours.

Case 2. Man over 60 years. Had chronic bronchitis for years, with pyorrhoea alveolaris marked. Exacerbations of acute bronchitis in the cold weather. The flora in the throat and from the gums of the teeth gave pneumococci in profusion, with streptococci and other organisms, including the Bacillus pyocyaneus. Auto-vaccine rid him of the cough. Cold weather courses of vaccine-treatment kept him remarkably free from the dreaded attacks. For over two years he was sustained by this treatment and kept in good health. An intercurrent nephritis lowered his general vitality and he succumbed to a pneumonia.

No vaccine could be used for the terminal pneumonia, as the patient was very low and had a severe nephritis which contra-indicated vaccines.

Case 3. Woman 50. Had pneumonia four years ago. Troubled with cough in unfavourable weather since. Pneumococci of moderate virulence were isolated. Auto-vaccine has improved her. Had drug treatment of all kinds. The best relief is given by the auto-vaccine.

Case 4. Man of 30. Had pneumonia some time back. Complaint of cardiac weakness—shortness of breath on exertion since. Pneumococcal toxaemia of the myocardium was suspected. The cocci were detected in the sputum. After a course of the auto-vaccine, he reported remarkable improvement.

Summary:—Pneumonia is a type of bacterial disease in which the causative germ is accurately identified. The organism is a common inhabitant of the mouth and throat, masquerading in all the innocence of a saprophyte, but capable of springing up into parasitic activity when the vitality of the host is lowered. In sub-acute and acute infections by this organism, the greatest strain is imposed on the cardiac apparatus. To save the myocardium before it is poisoned is our chief objective, among others. The treatment of the infection should therefore commence as soon as the pneumococcal cause of it is detected. To await signs and symptoms of lung consolidation or of cardiac damage is to miss the golden opportunity for therapeutic intervention. If the rational remedy for the disease is the removal of the cause of it, no treatment can be called rational which ignores the bacterial cause in a bacterial disease. Once this causal relationship is established, the medical man is justified in summoning to the relief of his patient, the resources of immunology to enlist in his service all the cellular and humoural defence organizations available in the body.

CASES AND COMMENTS.

THERAPEUTIC VALUE OF CALCIUM CHLORIDE AS INTRAVENOUS INJECTION

By

J. C. Baggit, L. M. F.

1. In the month of October, 1924, a male patient was placed under me for treatment of Hoemaptysis accompanied with cough and slight fever. Before placing him self under me, bleeding had taken place twice profusely, which made him emaciated. On examination I found no signs of T. B. I continued my treatment in the following way:—

(I) Ammon carb—gr. iii,
Spt. Ammon arom—m x.
Tr. Scilla—m x.
Tr. Senega—m x.
Aqua chloroform—ad. ozi.
Mft—mist, Send 6 such doses.

(II) Calcium chloride—gr. xv.
Tr. Hamamelidis—m v.
Aqua—ad.—ozi.
Mft.—Mist. Send 6 such doses.

The patient was advised to take (i) and (ii) alternately thrice daily. I got no good result by these medicines. During my treatment profuse bleeding took place twice, when I advised him to buy Hoemostatic Serum for injection but he could not as he was very poor. Finding no other remedy, I injected calcium chloride 5 p. c. in 5 c. c. intravenously. He required only three injections and these injections checked his bleeding. Now the patient is alright.

2. My second patient was suffering from melaena for a long time. He had no other complaint. I enquired whether he was ill of piles or not. He had neither any signs of Fistula nor Haemorrhoids. I have been successful in curing him only by the above medicine intravenously.

3. A boy of 14 was ill with Epistaxis. This boy was cured by calcium chloride 5 p. c. in 3 c. c. intravenously. Only 2 injections were required to control his bleeding.

I think, if there be any necessity in checking bleeding of any origin, it is better to inject calcium chloride in the strength of 5 p. c. in 5 c. c. intravenously. (This is an adult dose.) I shall be much obliged if any one writes about this in the Antiseptic.

PYORRHEA ALVEOLARIS

By

DR. GOPALAKRISHNAN, NEGAPATAM.

A chronic destructive disease of the supporting structures of the human tooth.

Causes.

Local Predisposing causes :—(1) Want of proper care in the hygiene of the mouth; (2) Soft food, which is bolted down the throat, resulting in the absence of normal masticatory influences—teeth like other organs of the body require excercise; and (3) Irregularities in and interval between teeth. These lodge putrifying deposits.

Local Exciting Causes :—Presence of inorganic and organic deposits, lodgement of food in the intervals between teeth and in the cavity of a carious tooth. The disease is said to be caused by a specific Amœba Entamœba Buccalis or E. Gingivitis Syphilitic or Strumous diathesis also act as prediposing factors in the causation of the disease. Injury to the periosteum, an excessive 'bite', or a blow may start the mischief, the initial injury having been slight, escaping notice.

Symptoms :—Dull gnawing pain in the parts, tenderness in masticating food, blackish or dark-red discoloration of the gums, which are tender and spongy and bleed on the slightest irritation. In advanced cases, the teeth become loose and pus can be forced up round the necks of the teeth involved. The roots are covered with black tartar. The disease is extremely chronic and beginning as it does in early middle life, may continue for a long time, without influencing general health.

Treatment.

General :—Strumous and syphilitic cases improve under general tonic treatment.

Local :—The tartar should be removed and the discharge purified by means of an antiseptic. To remove the tartar, rubbing with lime juice, Sulphur or Tinct Iodine is effective. To purify the discharge, use Hydrogen Peroxide which seems to be the best. The chief advantage of this one is that while pus is present, it pores up and ceases, when all pus is washed away. This could be improved by adding Thymol to it. The gums should then be swabbed with a mixture, containing equal parts of Tinc. Iodine and Vin. Ipecac. Applications of antiseptic and astringent solutions, sulphuric acid aromatic, Copper Sulphate etc., are also used, but the above, as far as I could see, are the best. The teeth should be cleaned every morning with a tooth paste, preferably Euthymol tooth paste, and the gums massaged with the brush. The local treatment should be supplemented by Injections of Emetine Hydrochloride and Pyorrhoea Vaccines.

Half a grain of Emetine Hydrochloride should be given every day with increasing doses of Pyorrhoea alveolaris vaccine. "To accomplish the best results, it is necessary that the use of the vaccine be combined, with proper surgical measures. The pus should be evacuated and solution of Emetine injected into them or powdered Quinine Sulphate insufflated into each pocket. The initial dose of the vaccine should be about 500 million bacteria and repeated at intervals of two to 4 days; (in severe cases on alternate days). Subsequent injections should be increased by 200 millions bacteria at each injection, until a maximum dose of 2000 millions is given. This maximum dose might have to be repeated many times before definite results are ensured." Periodical overhauling and scaling at the hands of a dentist, renders the conditions impossible.

It must be understood that tartar is not necessarily sepsis, general systemic disturbances begin only when the pus from around the teeth is swallowed; or "pus that is forming is impeded in its escape that absorption of microbes and their toxins into the blood serum, takes place."

Other remedial measures :—

(1) Salvarsan local or intravenous injections.
(2) Mercury Succinimide.
(3) Electrolysis or the formation of nascent oxygen locally round the the teeth.

All the products mentioned above are those of Messrs. Parke Davis and Co.

ROUND WORMS, ASCARIS LUMBRICOIDES.

This is a very common and important worm in the alimentary canal, giving rise to so many diseases. The existence of this worm in the food tract is known not only to the physician, but to every man, even a child, so much so the familiar form and shape and the mischief it does are not easily forgotten by the sufferer.

I am not giving here the detailed description of the aetiology, symptomatology, pathology etc. but a few notes as I think, it will be of guidance to the profession in their daily routine.

The mischief played by this worm is neither definite nor specific, nor is it clearly written in any of the University text books. The general practitioner, in most cases, never thinks that he is dealing or has to deal with a case of round worms, until the worm is actually seen either by himself or being told by some one else that the patient passed a worm or more by the bowel or mouth.

The following cases that came to my notice may interest the reader :

1. *Convulsions* :—Infantile convulsions in children are due to the existence of worms in at least forty per cent of the cases. In many cases of convulsions in children and infants, on my questioning the parent, I am given a positive reply that the little patient passed worms "two months ago" or "a few months back" and so on. In such cases the symptoms are treated immediately and worm powder is given subsequently with advantage. In some cases convulsions do not subside, till worms are passed by the effect of the santonine and castor-oil with Calomel.

2. *Dysentery* :—Symptoms just like those in dysentery are frequently observed in some patients. When dysentery powders and treatment did not give a cure, worm powder was tried to the benefit of the patient—both young and old.

3. *Diarrhœa* :—Worms were the cause of diarrhœa in children in several cases though there were a few cases in adults too, where worms were the cause of diarrhœa.

4. *Colic* :—Two cases of intestinal colic were brought to my notice, where worms were the root cause. They were successfully treated by the worm powders after all other treatments failed.

5. *Typhoid fever* :—An Anglo-Indian lad of 9 years was brought to me for treatment after he was treated for "typhoid" for about 23 days. The patient had diarrhœa like that in "typhoid" with fever and other symptoms, but not characteristic of "typhoid". I at once commenced my treatment for worms. The first dose of Santonine grains 2½ with Calomel grains 2½ brought down a bundle of worms. This encouraged me to give him an other dose of Santonine without Calomel, when he passed another bundle. In 48 hours the patient was free from "typhoid", diarrhœa and fever too.

6. *Fever* :—Certain cases of fever with perspiration were successfully treated by worms powder. Patients suffering from such symptoms were free after two powders for worms.

7. *Intestinal Obstruction* :—A woman aged about 42 years had very bad colic, treated by mouth and anus. Was given purgatives and enema to no effect. Her relations objected to surgical operation. Patient died. Just before death a worm passed through the nostrils.

8. *Eruptions on the Skin including Erythema* :—Worms were found to be the cause in many cases of skin eruptions including Erythema, and worm powder proved useful invariably in several cases. There may be other symptoms and suffering where worms are the cause. The physician does not lose anything in the majority of cases if he tries for worms in several diseases where the cause is not known.

FIBRO-SARCOMA OF THE HEAD OF TIBIA.

BY.

DR. P. D. BANA, M. B., M.R.C.S., D.P.H., D.T.M. & H.

A wireman aged 22 complained of a lump growing from his left knee for the last 6 months after initial injury. It arose from the inner side of left Tibia, was firmly attached at the base and fluctuating at the top. A needle was put in when blood spurted out. An incision was made under Chloroform and with my assistant Dr. Mukund Rao's help, I shelled out the whole tumour, which was firmly adherent to the periosteum leaving a depression in the tibial head. Hæmorrhage was brisk but was stopped by pressure and packing. The wound was sutured and a tube put in for drainage. He subsequently reported a few days hence when the wound looked healthy and the tube removed.

Section showed Fibro-Sarcomatous growth.

A CASE OF PHLEGMASIA ALBA DOLENS.

BY

U. VENKATA RAO, MEDICAL PRACTITIONER, "SUDARSANA", MADRAS.

Mrs. Chinnamah,—multipara,—aged 28, years, had three months ago natural delivery. A month after she developed abscess on both the breasts. The child was weaned and the abscess healed in a month. After delivery she was complaining of pain in the left leg and had some difficulty in walking. Six weeks after delivery the left leg began to swell from the foot upwards. In a couple of days the swelling attained double the size of the other leg and the patient was unable to move about. The leg became completely disabled, unable even to turn. She had no fall or injury. The swelling pitted deeply to an inch both at the ankles and feet

on pressure and extended to the whole of the leg up to the groins. There was very little pain except on movement and was very cold to touch. She had no fever—no dislocation—no constipation—otherwise healthy—no albumen in the urine. I elevated the foot on pillows, applied hot fomentations and a paint of Belladonna and Ichthyol in glycerine with cotton wool and loose bandage. The treatment continued for a week and the swelling began to subside gradually. Applied blue electric Thermo-light twice a day for another ten days with Belladonna and Icthyol paint. The patient was very anæmic and I was giving her iron, arsenic and strychnine injections twice a week. About nine injections were given. In about five weeks the swelling almost disappeared. She was able to sit and stand. In another two weeks she was completely cured.

A SEVERE CASE OF HÆMOPTYSIS ARRESTED BY INJECTIONS OF HÆMOPLASTIN. *

By

U. VENKATA RAO, MEDICAL PRACTITIONER, "SUDARSANA", MADRAS.

On 13-1-25 in the morning I was urgently called to Royapuram to see a case. The patient, Alamelu, aged 24, delivered four months ago, apparently healthy, was looking after the domestic work as usual, and had done some extra scrubbing and cleaning on account of Pongal till 10 p. m. the previous night and went to bed as usual. At 3 A. M. she had a fit of coughing with a large amount of blood. The people got afraid and sent for the nearest doctor who prescribed calcii chloride, Ergot and morphine mixture. She had again another fit of coughing at 5 A. M. with larger quantity of blood. I saw the case at 8 A. M. The patient was a little restless and I immediately gave her a morphine injection and asked them to continue the mixture and to give only iced milk. She slept well for three hours. At 4 P. M. she had another cough with spitting of blood. I saw the patient at 6 P.M. in the same condition and gave an injection of Ergotin citras and a mixture containing calcii chloride, Syrup of Hypophosphite of Lime, Tinct Opii and Sodii Bromide. The pulse and general condition were alright. At 10 P. M. she had another fit of cough with blood but the quantity was small. At 5 A. M. again she had cough with blood and she fainted for 10 minutes. At 8 A. M. I saw the patient and gave her an injection of 2 c. c. Haemoplastin. This acted very promptly. She coughed no more blood after. The bowels were constipated and an enema was given. The patient was in bed in absolute recumbent position and was given iced milk and cool barley conjee. As she was very weak a teaspoonful of Panopepton was given in iced water every four hours. In the evening after the Haemoplastin injection she had a slight rise of temperature (101 ° F). She was given 15 grains of calci

* *Haemoplastin, manufactured by Parke Davis & Co.*

lactas four times a day and Mist Alba every alternate morning till the bowels became regular. Exactly a week after she had another fit of coughing with a large quantity of blood. Six hours later she had a second fit of cough with blood. I gave her an injection of 2 c.c. of Haemoplastin and 12 hours later another. She has been continuing calcii lactas 15 grains every four hours, a teaspoonful of gelatin flakes in milk every three hours and Waterbury's metabolised codliver oil compound plain ½ ounce twice a day. Her right Apex is affected with Tuberculosis. The temperature varies from 98 to 100. She has occasional dry cough. It is now two weeks since she had cough with blood.

CONGENITAL STRICTURE OF URETHRA

By

DR. A. C. PAPA ROW, L.M.P., M.C.P. & S.

I was called in to attend a new born baby (48 hours) as emergently as possible at 12 noon on 6-10-24 with all the necessary paraphernalia for an operation, by a Muslim resident, an umbrella seller. By the bye, to put me in the way of selecting my instruments for the bag, he was anxious to inform me before enquiry the nature of his baby's case. I was made to understand that it was the retention of urine. But, on further enquiry, he told me that there was no opening at the meatus on the glans penis. This was enough to set my bag to meet this emergency.

2. I went in. I examined the baby. The bladder was full. The baby was crying sharply at intervals. I found the skin over the glans penis quite closed and not moving at all. So it was an adherent prepuce. I thought I could overcome this very easily with my left thumb and forefinger. I held the glans and scissored the top portion of the skin to get hold of the usual slit. But sorry, I could not find it. So I had to use my cataract knife very gently over the spot mapped out for the slit. Fortunately behind the incision there was an opening just enough to pass a slender probe (dull-pointed). I gently tried to push in and was glad to find it go as far as the scrotal root of the penis without much ado. I next removed the adhesions to make the prepuce easy of move.

3. Here came the tug of war. Probe could not go any further. There was no opening at all. Now I took a next slender probe to repeat my probing. While doing so, some slight blood came out. I tried again with G.E. catheter of the lowest degree. This time I could manage to push in the catheter. Being confident that there was no obstruction, I removed the catheter and put in the probe instead. Again I found obstruction as usual. Fearing false passage and hurt to the sorrounding structures, I

removed it. This time I tried No. 1 bouge (sound) without stillet. I failed in my attempt. I again tried the same with stillet. It passed the gordan knot with difficulty. I kept it likewise, while preparing for an operation.

4. I gave an incision over the obstruction putting the baby in the lithtomy position, from below the penis. I opened the urethral canal. I found some occlusion there with tough tissue. I removed it gently with my cataract knife and stitched, leaving the No. 1 catheter inside for the removal of urine. Before finishing up everything, I removed the urine and washed the bladder with light boric lotion. I removed the catheter on the 6th day. It healed very nicely. The baby is progressing very well without any further trouble with the urethra.

5. Since I have not come across a case of congenital stricture of urethra in all my practice (22 years), I thought it worth while to bring this to the notice of my fellow professionals. In 1914, I had an occasion to attend on a baby, for a similar case without stricture. The boy is now in the 1st. Form and is doing well.

CONGENITAL ABSENCE OF ANUS.

By

DR. A. C. PAPA ROW, L. M. P., M. C. P. & S.

On 22nd Nov. 1924, at 9 P. M. I was asked to go in to see a baby born without anus. It was only 45 hours since born. I took my bag of instruments and followed the party (Dravida Brahmins) to the place.

2. I took the baby from the mother and put it on a flat stool. I examined it. I found there at the anal place three raised folds of skin of dark red colour, one interlacing with the other. I thought it was the place where I could meet without difficulty the anal opening. It was late in the night. My eyesight could not stand the strain of looking into the deeper structures with my scalpel without hurting the structures. So I ordered for a gas light.

3. I arranged my things for an operation. I caught hold of another Brahmin and asked him to hold the baby in the lithotomy position. He took me by surprise in his manipulation of keeping it in the lithotomy position and I was glad to find such clever men even in the Village. Well, before I gave an incision, I gave a little sharp tap over the baby's thigh just to make it cry, by which I could form an idea of its sigmoid occlusion with its probable distance from the anal ring, over my palm.

4. I was rather annoyed to see such a negative response but I braced up my courage and began with the operation. I gave an incision an inch in length, over the anal ring, right in a line with the medium raphe. I dived into the lower structures with gentleness lest I would hurt the ampoule. I had gone from ¼ inch to ½ inch and from ½ inch to 1 inch without any traces of the ampoule. I inserted my little finger just to feel any ampoulic pressure from above downwards on sharp crying. Here too my attempts proved a failure.

5. I thought I could go in still further in my blind search. I call it blind, as I was doing it at night under the glare of a gas light and without a qualified assistant, even to cry "halt." I had to struggle hard like this till 11 P. M. to a distance of 3 inches. I could feel the pelvic floor, in my vain attempts for the search of the ampoule. I am glad to note that the baby did not lose much blood and stood the strain of operation without anaesthesia. I stopped at this stage for the night.

6. Next morning, I called in my friends Drs. J. Latchmiah and P. Visvanadhan for consultation and probable help in the next stages of my procedure. They both examind the wound I made and the baby. They both probed their little fingers to the extended depth and tried to elicit any ampoulic pressure, but could not. But Lizar in his "emergent surgery" suggested to open at the left iliac to search for the hidden ampoule. I showed it to them. The father of the baby was pressing for the completion of the operation. My friends, after going through the various steps of the operation in a similar case in Lizar's Emergent Surgery, have come to corroborate my statement that it was a case of vain trial and hopeless one. It is nothing short of cruelty, if I open the abdomen from the left illiac side, since the chances of catching the ampoule, breaking the adhesions of the hidden ampoule and finally drawing it down just to fix it at the anal ring, are as dangerous as the operation itself. The baby might die on the table either from shock or from loss of blood. Taking into consideration these and many more it was left as it was, though I was pressed to complete the operation either for good or bad. It lived for another two days and closed its chapter. Out of five such cases during my practice, only one is alive aged 4. It is a girl.

The Antiseptic

MARCH, 1925.

PARA-SMALL-POX.

Dr. R. P. Garrow, M.D., D.P.H., Medical Officer of Health, Chesterfield, in an article contributed to the columns of "The Lancet" brings to the notice of the profession the presence during the last few years in certain districts in England, chiefly in the midlands and the north, a disease notifiable as "Small-pox." This disease presents clinical and epidemiological features which distinguish it from ordinary virulent small-pox. The features of the disease are so numerous, so striking and so constant, and their practical significance to the physician, epidemiologist, public health administrator and the public, is so important that the author has adopted "para-small-pox" as its name in order to facilitate comparison and contrast between it and the graver disease small-pox.

The clinical signs and symptoms of para-small-pox are the following :—

The onset of an average case of para-small-pox is gradual, with headache, dizziness, aches, and pains in the body and limbs, and weakness of legs. These are the commonest symptoms complained of. In addition, there may be shivering, nausea, vomiting, abdominal pain, backache, and sore-throat. No case in this series gave the classical onset of small-pox with rigor, vomiting, lumbo-sacral pain, and rapid prostration. Although not prostrated, the para-small-pox patient usually lies down to recover from what he calls influenza. His temperature in this stage is 100° to 103°F., and subsides by rapid lysis. The recovery from this initial illness is rapid and complete, and in the average case the patient feels perfectly well for the

remainder of his attack, including the stage of eruption and convalescence. The influenzal illness leaves behind no feelings of physical weakness or mental depression such as frequently follow ordinary influenzal attacks.

Whereas in small-pox the eruption appears fairly constantly in the middle of the primary toxaemia—*i.e.*, about the third or fourth day of the illness—in para-small-pox its appearance is frequently delayed till the patient has completely recovered, and in about one-third of the cases an interval of one to four days of complete intermission of all symptoms occurs between illness and rash. In this quiescent period or pause patients have returned to school or to work for days. This change in the chronological relationship of the primary toxaemia and the eruption is one of the most striking differences between para-small-pox and small-pox.

The eruption of para-small-pox corresponds exactly with that of small-pox in one important respect—distribution. Every detail of observation made by Ricketts and Byles on small-pox in regard to the distribution of the rash may be confirmed in the case of para-small-pox. The skin lesions of para-small-pox are, however, on an average, smaller and more superficially situated, not so shotty, and more rapid in their evolution through the stages of macule, papule, pustule to crust than those of small-pox. The final stage usually referred to as scabs or crusts in small-pox may be more aptly called "amber beads" in para small-pox. Instead of the opaque brown crusts formed of inspissated pus and blood seen in small-pox the skin of the para-small-pox patient will be found studded with small round translucent bodies varying in size from pin's head to split pea, and in colour from pale straw to dark amber. These amber beads take their size and shape from the pustules which precede them. and may be perfectly dome-shaped or slightly flattened on the top. Their translucency indicates that the contents of the pustule were scarcely pus, but little more than clear or only slightly turbid serum. This amber bead phenomenon is best seen about the end of the first week from the appearance of the eruption, and lasts throughout the second week, when it is of great diagnostic help. A few amber beads of perfect shape and correct distribution have frequently been the only objective sign of an attack, and when supported by a history of "flu" a week or two before, are absolutely diagnostic. When the amber beads are shed from the skin there

remain small, round, glistening reddish-brown areas which lose their pigmentation slowly and may be still visible some months after recovery from the attack. But pitting is rare, and when it occurs it consists of a fine foveation on the nose, cheeks and forehead.

When the eruption is profuse and the pustules are large and deeply situated in the skin as in small-pox (as they sometimes are), there is mild suppurative fever (100-101°) in the second week, but this is rare, and the majority of patients never have an ache or a pain or a temperature above 99° after admission to hospital.

Other features associated with small-pox of great toxicity were not observed once in this series, namely, prodromal rashes, hæmorrhages. Further, new-born or very young infants, unprotected by vaccination, had hardly any constitutional disturbance, even when the rash was fairly copious. Infants on the breast never missed a feed, and the first thing noticed by the mother was the appearance on the infant of the characteristic spots.

The mortality of para-small-pox in otherwise healthy subjects is nil. It does not convey an adequate impression of the mildness of this disease to say that no patient in this series of 500 cases or in the 2,000 in the country of Derby died of para-small-pox. No case was sufficiently ill from para-small-pox to cause the slightest anxiety as to the issue.

It shows the influence of voccination in the prevention of para-small-pox. No person vaccinated in infancy was attacked under the age of 17 years. No person recently vaccinated was attacked. No person vaccinated in infancy and re-vaccinated at any age was attacked.

There are many who believe that the identity of this mild disease with small-pox is settled by this prophylactic influence of vaccination alone. In dissenting from this view we would remind them that even the discovery of the virus of small-pox and para-small-pox as identical organisms does not necessarily settle the question. A simple analogy will explain what we mean. The so-called Micrococcus melitensis (in reality a short bacillus), discovered by Bruce as the cause of Malta or Mediterranean or undulant fever in man, is quite indistinguishable to bacteriologists from the Bacillus abortus of Bang which causes contagious abortion in cattle,

Yet nobody would think of suggesting that undulant fever and contagious abortion are the same disease.

Similarly, no discovery which the sciences of bacteriology and immunology may make in regard to small-pox and para-small-pox can bridge the wide clinical gulf between the two diseases.

In conclusion (1) Para-smallpox is a disease *sui generis*. (2) It is distinguishable clinically from small-pox on the one hand and chicken-pox on the other. (3) It preserves its type as rigidly as does small-pox or chicken-pox or any other of the acute specific infectious diseases. (4) Its mortality amongst healthy subjects is nil, and there is no good evidence to show that the disease ever assumes virulence. (5) Vaccination with the calf lymph used to protect against small-pox is equally protective against para-small-pox. (6) Administrative measures for the control of the disease could with advantage be modified in the light of these conclusions.

CURRENT TOPICS.

MEDICINE.

Adrenalin as an Analgesic—In a comprehensive, ven discussive article Dr. D. Paulian, of Bucharest, discussed the action of anæsthetics in general and of adrenalin in particular. Such drugs as antipyrin, salicylates, and morphine, on the evolution of a common cold, he suggests, act like sleep, reducing the phenomena of inflammation, for the time being at any rate, by diminishing the conductivity of the sensory nerves. It has been argued that salycylates are effective in certain diseases, mainly because of the block impulses which, in their absence, would travel by the sensory nerves to the central nervous system. Indeed, it has been shown that aspirin and atophan are antifebrile simply because they reduce the excitability of the central nervous system. At Prof. Marinesco's Hospital in Bucharest Dr. Paulian has been investigating the action of adrenalin on the gastric crises of tabes. Of its ability to mitigate these crises and relieve the lightning pains of tabes there could be no doubt; of its mode of action it was difficult to be certain, but Dr. Paulian considers as plausible the hypothesis that the favourable effect of adrenalin depends in such cases on a rise of blood pressure. He has found that in all cases of tabes associated with disease of the aorta the arterial pressure is below normal, and this hypotension is exaggerated during gastric crises and attacks of lightning pain. He has noticed that the relief obtained by an injection of adrenalin during a gastric crisis is

accompanied by an appreciable rise of the blood pressure, and he is inclined to think that the best explanation of the asthenia of tabes is to be sought in its concomitant hypotension. Whatever the explanation, it seems clear that adrenalin is a rapid and effective remedy for gastric crises, and though it is most potent when given by subcutaneous injection, it is not absolutely inert when given by the mouth. One of Dr. Paulian's patients was an army officer who used to be aroused at 5 o' clock every morning by an irresistible desire to go to stool. He was able to abort these attacks as soon as he began by swallowing 10 drops of adrenalin. In neuralgia of the sciatic nerve and in rheumatic affections of the joints, adrenalin has been found remarkably efficacious, even when the rheumatism has been complicated by effusions into joints. It may be that adrenalin is beneficial in tabes because the action of the suprarenals is defective; such an hypothesis would explain the general weakness and many of the other symptoms of tabes. Whatever the mechanism of adrenalin artificially introduced into the body may be, there can be no doubt as to the analgesia and euphoria which it creates, and in this respect it assuredly deserves more attention than it has hitherto received from physiologists and physicians.

Treatment of Epidemic Encephalitis with Trypaflavine.—Buss and Pelteer (Deut Med. Woch., July 25th, 1924, p. 1014) confirm an earlier publication by Buss in which he showed that intravenous injections of trypaflavine were remarkably effective, in the early stage of epidemic encephalitis. The authors' present paper includes a detailed record of sixteen cases, many of them severe, in which trypaflavine was given with more or less good results even when, as happened in some cases, the disease had lasted for sometime before the treatment was instituted. The usual dose of trypaflavine was from 5 to 15 grams injected every day; in one case, which terminated in recovery, as many as forty-four injections were given over a period of three months, a total of 400 c. c. m. of the 0·5 per cent. solution of the drug being given in this period. This was the only case in which the injections seemed to provoke bladder symptoms. Though in none of the published cases was the daily dose of trypaflavine more than 20 grams, the authors recommend doses of 20 to 60 grams a day by intravenous injection. They suggest that timid dosage comparatively late in the disease may well be responsible for the lack of faith in the efficacy of trypaflavine in this disease.

Polarimetric Estimation of Sugar in Urine.—The advent of insulin has made accurate urine sugar estimation a necessity for everyone dealing with diabetes. Practically all the volumetric methods are difficult and require great practice if consistent results are to be obtained. Moreover, they are unsuitable for general practice owing to the time required, the expense of solutions, and the tedium of washing up of apparatus used. In view of these facts, it is surprising that the hand polarimeter is not more extensively used by practitioners. These instruments, made by Zeiss and Reichert, and costing only a few pounds, are constructed to work with daylight, and have the length of their tube so adjusted that the scale reads off in percentages of sugar. On focussing the eye-piece, a circular field, divided diametrically, can be seen. If the tube is empty, and the scale set at zero, the whole of the field is of a uniform mauve tint. If, however, an observation tube containing diabetic urine is put into the apparatus the colours change and the two sides of the field become uneven in tint. The scale is turned until the colours match, and the percentage of glucose can be read off directly on the scale. If the urine is very deeply coloured, 40 c. cm. should be shaken up with 10 c. cm. of 20 per cent. basic lead acetate solution (which is opalescent) and filtered. Observations are then taken on the clear fluid, but one quarter of the percentage read off must be added to allow for dilution. The only theoretical objection to this method is that laevo-rotaory substances such as B-oxybutyric acid may be present, thus tending to lower the glucose rotation. This hardly comes within the sphere of practical politics, owing to the small quantities of these bodies present and to their low specific rotation index. In any case this error is preferable to those made by any one not in constant practice who performs volumetric analysis. This method described is used as a routine in certain of our great hospitals and much valuable time is saved.

Intracardial Injection of Adrenaline.—E. A. Koch (Zentralbl. f. Gynak. October 11th, 1924, p. 2234) reports the case of a child apparently dead from asphyxia neonatorum who was revived by an intracardial injection of adrenalin. At birth the child made a slight movement, passed urine, and then lay still, deeply asphyxiated. The cord was pulseless, so it was immediately cut, and mucus was aspired from the trachea. No heart beats could be heard, and heart message and artificial respiration were resorted to without success. After five or six minutes 6 minims of suprarenin were injected into the heart through an intercostal space, half an inch to the left of the sternum. Almost immediately the heart started to beat, at first irregularly with numerous extra-systoles, an occurrence previously noted by Frenzel. All methods were tried to start respiration, but it was not until half an hour had elapsed that the child was made to breathe and the skin took on a more healthy colour. No further trouble was experienced, and the child was well enough to suck from the breast on the second day. Koch states that the injection must be made

within fifteen minutes at the latest after the heart has ceased beating, and that not more than 8 minims should be injected into an infant, as 12 minims has been known to cause convulsions in a six months' old child. He then examined recent statistics relating to the intra-cardial injection of adrenalin in other contingencies. He maintains that it is of very great value in surgical operations when the heart failure is due to the anaesthesia, or in cardiac failure caused by internal bleeding, or in shock and collapse following spinal anaesthesia. In such cases in adults a dose of 16 minims is injected; the number of reported successes is very striking, the statistics being taken from a number of writers. Adrenalin is apparently of little use when the heart failure is due to internal derangements such as heart disease, and very few successes in such cases have been recorded.

Metallic Mercury Suspensions in Treatment.—H. N. Cole, J. G. Hutton, J. Raushkolb, and T. Sollmann (Journ. Amer. Med. Assoc., August 23rd, 1924, p. 593) discuss in considerable detail the therapeutic results of the intravenous and intramuscular injections of metallic mercury suspensions, with especial reference to the use of "mercodel," which is a fine trituration of mercury with glucose in the ratio of about one to five. They found that intravenous injections of this suspension produced a rapid disappearance of spirochaetes from the lesions of primary syphilis, prompt clearing up of the secondary lesions, and improvement in the spinal fluid. These results were observable within a day or two of the first injection, but relapses occurred unless the treatment was continued, more than six injections being required for satisfactory results. The amount of mercury introduced during a course of treatment was much greater than in other methods. No adverse effects on the kidneys and intestines were provoked, but there seemed to be some tendency to stomatitis, which might pass into severe and even fatal forms. The authors found that the repeated injections tended to set up serious inflammatory reactions in the veins. Intramuscular injections presented similar dangers and uncertainties, and were markedly irritant. They therefore consider the risks too great to justify at present the therapeutic use of this suspension. They give details of the treatment of 23 cases to illustrate their contentions.

Ankylostomiasis in the Argentine. In a recent article in La Semana Medica Dr. Vaccarezza, Chef de Clinique for Prof. Destefano, deals very fully with the whole question of ankylostomiasis in the Argentine. The disease is widely spread in the north of the country, particularly the province of Corrientes, so much so that 40 per cent. of the recruits from that region show evidence of it on fæcal examination. In

some localities practically all the inhabitants are infected. The disease is frequently contracted in infancy, often with very grave results, but after that it is apt to pass unnoticed till adolescence, when the maximum incidence occurs. The blood shows more or less deficiency of red cells, according to the severity, with excess of eosinophiles and often some slight excess of leucocytes. NECATOR AMERICANUS is far the most frequent parasite, associated in a large proportion of cases with trichocephalus and others. Dr. Vaccarezza states definitely that the most successful treatment is by carbon tetrachloride in doses of 3 c. cm. for adults; one dose suffices in the majority of cases. If this drug is contra-indicated or fails, the essential oil of chenopodium is the next best; both, he adds, are safer than thymol. As preventive measures the construction of latrines and the use of adequate foot covering are regarded as the most important. The article contains a bibliography of recent Spanish literature on the subject.

Administration of Red Bone Marrow.—C. D. Leake and E. W. Leake (*Journal of Pharmacology and Experimental Therapeutics*, September, 1923) published the results of feeding rabbits and dogs on red bone marrow and splenic extracts. Variations in the red and white cell counts were found to follow the administration. A blood count was made and the hæmoglobin content noted; extracts of red bone marrow and of spleen pulp were injected into the ear veins of the animals and the animals were also given similar extracts by mouth. It was found that following the administration of splenic extract there was a fall followed by a rise in the number of erythrocytes. After three daily injections the count fell to normal in five days. The injections of red bone marrow caused a similar rise in the number of red cells. The hæmoglobin did not increase. Combined administration by injection and by the mouth gave similar results. The authors think that these results were due to stimulation of the erythrogenic centres and to extension of functionating red marrow.

Action of Sodium Bicarbonate on the Kidneys.—ELLIS KELLERT (*The American Journal of the Medical Sciences*, January, 1924) administered to apparently normal rabbits secreting normal urine intravenous injections of a 5% solution of sodium bicarbonate in quantities per kilogram in excess of those usually given to human subjects for therapeutic purposes. No injurious action resulted. In another series of rabbits suffering from nephritis induced by injections of potassium chromate, mercuric chloride and uranium nitrate, the similar use of sodium bicarbonate in equal or larger quantities resulted in no harmful action on the kidneys. The animals receiving the injections of the chemicals and sodium

bicarbonate showed no greater renal changes than those receiving the chemicals alone. The author claims that there is therefore no experimental evidence, in the case of rabbits, for the belief that intravenous injections of sodium bicarbonate as used for therapeutic purposes, are injurious to the kidneys.

Cardiac Dyspnoea.—C. WILSON (*The Lancet*, December 22, 1923) states his experiences of the use of opium in the treatment of dyspnœa due to heart disease. He divides cardiac dyspnœa into three types. (*i*) The ordinary dyspnœa which occurs in all cases of heart failure and is aggravated by exertion; (*ii*) cardiac asthma; and (iii) Cheyne. Stokes breathing. In the first mentioned variety opium may be of use to allay suffering and induce sleep, but it is in cardiac asthma and Cheyne-Stokes breathing that opium is most useful. In the two latter a hypodermic injection of morphine or "Omnopon" frequently causes a cessation of the paroxysm and induces sleep, the patient awaking without any dyspnœa and often remaining free from distress for some days. The doses employed varied from 0·01 gramme up to 0·06 gramme every four hours in a severe case. Morphine is often useful when Bright's disease complicates heart disease and the presence of mucus rales in the lungs is not a contra-indication to its use; rather has it been found that the rales often disappeared after the administration of morphine. The author quotes a number of instances in which he had used this drug with benefit, the patients' ages varying between fifty-six and ninety-four. Old age is not a contra-indication. He holds that the value of this method of treatment is not sufficiently appreciated by practitioners and he points out that references to the use of morphine for the treatment of cardiac dyspnœa are few in the literature.

Pilocarpine.—A. Cain and P. Oury (*La Presse Medicale*, October 27, 1923) discuss the role of pilocarpine in the treatment of retention of urine. They refer to four patients who suffered with retention due to reflex causes. One suffered from a tumour of the rectum, another with hemiplegia, a third with vesical crises of *tabes dorsalis* and the fourth presented a typical picture of a complete transverse lesion of the spinal cord. In all instances the retention either recurred or was of long duration, and in all relief followed the subcutaneous injection of pilocarpine hydrochlorate or nitrate in doses corresponding to one centigramme of pilocarpine. Within eight or ten minutes of the injection the bladder was either evacuated rapidly or urine commenced to flow from the *meatus urinarius* slowly and the organ was emptied in one to two hours. The authors consider that pilocarpine must act in such instances on the motor fibres to the urethral sphincter, but they state that they cannot explain how it acts.

SURGERY.

Empyema Mortality in Children.—W. E. Ladd and G. D. Cutler (Surg. Gynæcol. and Obstet., October, 1924, p. 429) discuss the question why empyema in children is quite different from that in adults, basing their conclusions on a series of 268 operation cases. The mortality in infants under one year suffering from pneumonia, even without the complication of empyema, is exceedingly high, being about 66 per cent. With increasing age the mortality falls and after the eighth year is very small. The next most potent factor in mortality is the type of the infecting organism. The streptococcus was found to be associated with the highest mortality, which in a series of 35 cases was 28 per cent., in 160 cases of pneumococcal infection the death rate was 15 per cent. The mortality is very high if an operation is performed during the pneumococcal stage. Aspiration should be practised during this stage, reserving more thorough drainage until the less acute stage is reached. Intercostal drainage and an attempt to keep the thorax closed round the tube is said to be the operation of choice for most cases with streptococcal infection. Rib resection and freeing of pleural adhesions, to allow the lung to expand, is recommended for convalescent cases. The authors consider gas-oxygen to be the anaesthetic of choice for rib resection operations: novacain with adrenalin is valuable in those for intercostal drainage, but either is contraindicated in all cases.

Protein Therapy in Gonorrhœa.—H. E. Ahlswede and W. Busch (Urol. and Cut. Review, November 1924, p. 659) have employed non-specific protein therapy in the form of injections of milk as an adjuvant treatment of gonorrhœa. The injections were given intra-muscularly at a point in the upper and other quadrant of the gluteus about 4 or 5 cm. below the upper edge of the pelvic basin. In acute gonorrhœa the first dose should be at least 4 c. cm., and each following dose is increased by 2 c. cm. The result is often astonishing. The secretion suddenly decreases, the pain ceases, and the urine becomes clear. Local treatment meanwhile should not be neglected. Usually the total duration of the treatment with simultaneous milk protein injections is much less than with the ordinary treatment alone. The effects upon inflammation of the epididymis are particularly favourable. After three or four injections the swelling and pain disappear and the cloudy urine becomes clear. Protein therapy is also of value in suppurative adenitis. In about half the cases suppuration may be prevented by energetic doses. In the remainder the severe pain decreases, the abscess forms much more quickly, and complications are

much fewer. Injections of milk are also very beneficial in soft sore associated with gonorrhœa.

Post-operative Tetanus.—F. Satta (La Chirurgia degli organt di movimento, August, 1924, p. 605) alludes to a recent paper by Wohlgemuth, who had collected 27 cases of post-operative tetanus which had occurred in the course of twenty-five years. In most of the cases the possibility of exogenous infection due to imperfect asepsis and contamination of catgut ligatures could be excluded. As all the cases had occurred after abdominal operations in which the intestine had been injured or the operation would have been contaminated with faeces, and none had occurred after operations on the thorax, extremities, or skull, and in view of the fact that the faeces have been found to contain B. tetani in 5 per cent. of all cases, the infection probably arose from the intestinal contents. Consequently Wohlgemuth was of opinion that a prophylactic injection of antitetanic serum should be given after operations in which the intestine was injured, just as after a recent wound. Satta now records three cases of post-operative tetanus, two of which were fatal, while, one ended in recovery, following orthopaedic operations on the feet. As the operations had been carried out under the most rigorous asepsis, Satta, like Wohlgemuth, considered that the infection was endogenous and was due to the presence of B. tetani in the skin and subcutaneous tissue. He therefore recommends that all subjects whose skin shows signs of previous ulcera toxin before operation.

Bismuth in Experimental Syphilis.—Ehrlich's successor Prof. W. Kolle, has published an account of the prophylactic use of arsenical preparations, mercury and bismuth, in experimental syphilis, and his observations in the case of the last-named drug are instructive. He anticipated that bismuth would not be more effective than mercury in rendering experimental animals resistant to infection, but to his surprise he found that mercury had only a transitory effect in this respect. When, however, he injected insoluble salts of bismuth which were retained in the body as depots at the site of injection, it proved impossible to inoculate with syphilis successfully. In the case of 26 rabbits given an intramuscular injection of bismuth, followed by intra-testicular inoculations of spirotetes from two to fifteen weeks later, there was not a single instance of a chancre developing. X-ray examinations showed that, these insoluble salts of bismuth, including the Carbonate, which is quite insoluble in water, could remain for months embedded in the muscles into which they had been injected. Control tests carried out with 68 animals which had not been given preliminary treatment with bismuth showed that

94 per cent of them developed a cancre at the site of inoculation. In another series of controls, where the animals had been treated with easily absorbed preparations of bismuth, refractoriness to infection was in most cases short-lived. The upshot of these observations would seem to be that a single bismuth "stopping" left in the body is capable of rendering it refractory to infection with syphilis for as long as four months. Prof. Kolle sounds warning with regard to drawing hasty conclusions as to the applicability of his observations to man. It must first be shown that the bismuth-treated rabbits did not contract experimental syphilis in some latent guise which ? dispensed with a chancre at the site of inoculation. For, as in the case of prophylactic treatment with arsenical preparations, it is concievable that resistence to infection may be acquired only up to a degree which does not exclude the development of an obsortive form of syphilis. It is also, as Prof. Kolle points out, desirable that his experiments on rabbits should be repeated on monkeys, and that they should react in the same way before general conclusions are drawn as to the prophylactic value of bismuth. If man reacts like the rabbit in this matter to bismuth, it is obvious that a very important advance has been made toward the prophylaxis of syphilis in man.

Tannin Solution for Disinfection of the Hands.—W. L. Pokotilo (Zentrakok f. Chir., September 6th, 1924, p. 1969) of Odessa states that as long ago as 1910 he had used a 5 per cent. tincture of tannin for disinfection of the hands, but when spirit became expensive and scanty he had to abandon the method. He then investigated the action of a 5 per cent watery solution of tannin, and found that the results were as good as with the tincture. The hands were first washed in tap water with a brush and soap and then rubbed over with a swab soaked in the tannin solution. Bacteriological examination showed that cultures from hands so treated were sterile, whereas numerous colonies were grown from hands that had been washed with soap and water only for ten to fifteen minutes. The tannin solution, which is rubbed on the hands, acts as a fine coating, and prevents the bacteria penetrating the skin. In other words, the tannin solution plays the part of a glove, but is superior to it in that the sensation of touch is not impaired and the hands do not slip so readily; whilst, what is most important, the process is much cheaper. The only drawbacks of the tannin solution is that if care be not taken it leaves grey stains on linen, but these can be removed by oxalic acid.

Pemphigus.—Robert H. and William D. Davis (*Archives of Dermatology and Syphilology*, November, 1923) give a brief summary of the treatment of pemphigus by various authorities and present a treatment

consisting of intravenous injections of iron cacodylate 0.06 gramme to five cubic centimetres of the vehicle. The injection is given three times a week with the addition of a subcutaneous injection of 1.5 cubic centimetres of "Coagulen" on alternate days. In all instances except one the latter was given on the same days as the iron and arsenic solution. The results of this treatment they claim to be extraordinarily good.

MEDICAL TOPICS.

In the Madras Legislative Council.

The following are extracts from the speech delivered by Dr. U. Rama Rau, M. L. C., during the general discussion on the Budget for 1925-26, on 5th March 1925:—

PUBLIC HEALTH AND SANITATION.

Coming now to the Public Health Administration of this Presidency, Sir, it is an acknowledged maxim that the prosperity of a nation depends primarily on the health and power of resistance of the people to diseases. These latter are generally determined by a careful study and analysis of what are called "Vital Statistics"—the "Book-keeping" of Public Health. It is said there are three kinds of lies—lies, damned lies and statistics—and the vital statistics of our Presidency come under the last category. I am not exaggerating when I say so, for the Government themselves have admitted it in a way. In their administration report for 1923–24 they say, "In spite of the efforts of the newly appointed District Health Staff, the registration of Vital Statistics continued to be defective". Even according to this unreliable record of registration of births and deaths, the infantile mortality is steadily going up. The average infantile mortality as per latest figures available is 210. 2 per mille in the Municipalities and 173.7 in rural areas, a figure large enough to stagger the hearts of every public man in this Presidency. In all civilized countries, the infantile mortality has not gone above 100 per thousand, and it is only 80 in London. Sir, the infant mortality rate has been called the most sensitive index, we have of the social well-being and to a considerable extent of the effectiveness of Public Health administration and the infantile mortality of our Presidency tells its own tale of wretchedness and misery and an woefully neglected Health administration. I hope the Honourable the Minister will strive his best to minimise infantile mortality and the high-death-rate, now prevalent among adults by preventing adulteration of food stuffs, improving milk supply and by other beneficial measures besides providing an adequate and wholesome water-supply and an efficient system of drainage.

MATERNITY AND CHILD-WELFARE.

Let me now pass on to the subject of maternity mortality. It is a well-known fact that a good number of women die during or after confinement and the difficulty lies mostly in the mishandling of delivery cases by "dais" and barbar women, ignorant of the knowledge of midwifery. A proper training given to these classes of women in the practice and theory of midwifery would go a great way towards mitigating the evil. It must be the duty of the Government to provide schools for midwives and nurses at convenient centres, and train these barber-women for the profession, and no attempt has as yet been made in this direction.

MEDICAL DEPARTMENT.

Passing on to the Medical Department, I have to congratulate the Honourable the Minister for two things. (1) The introduction of the Rural Medical Relief Scheme, and (2) the opening of the Indigenous School of Medicine. With regard to the rural medical relief scheme, I am afraid some new difficulties have arisen in its execution. I am informed that some of the Taluq Boards which were hitherto maintaining certain dispensaries in selected urban areas have pleaded inability to continue them on the score of finance and have resolved to close them already, taking advantage of the rural area scheme. This is indeed a very bad step, and where extension of medical relief was aimed at by the scheme, I find there is an attempt to curtail it. Certain important centres are selected where already a dispensary exists and handed over to private practitioners under the rural area scheme, closing the dispensary for their sake. It looks as if the scheme is intended for the benefit of the unemployed medical men and not for the benefit of the public. The Taluq Boards or District Boards cannot divest themselves of their responsibility in the matter of affording medical aid to the people and they must not cut short their expenditure in this direction. The proposed closure of the Pallavaram Dispensary in Saidapet Taluq and another in Uppinangudi Taluq in South Kanara are instances in point. This requires careful investigation and the House will be glad to have sufficient elucidation on the method of putting the rural area scheme into force. As regards the Indigenous School of Medicine, no good purpose will be served by it if no Ayurvedic Hospital is opened simultaneously for clinical study. No provision has been made in the Budget for such an hospital. Finally the scheme will be branded as a failure which, as we now see, is not due to any inherent defect or demerit but due solely to imperfect and haphazard mode of launching it. An Ayurvedic Hospital is therefore quite necessary if the scheme is at all to succeed and the Honourable the Minister, if he is really earnest about it, must see to this without further delay. As regards the appointment of Honorary Physicians and Surgeons, we remain where we were and no further steps appear to have been taken to develop

the scheme. The Council would like to know if they are working satisfactorily and, if so, whether more men cannot be employed. If however the scheme is a failure, what are the contributory causes and what are the disabilities under which honorary men are labouring? The Honourable the Minister, will, it is hoped, make a statement on this point before the House. I take this opportunity of bringing some of the abuses existing in the Medical Department to the notice of the Honourable the Minister, with a view to their timely rectification. The 5 year rule of keeping the medical subordinates at a particular station is honoured more in the breach than in the observance. Some are transferred much earlier and some are retained longer than usual, with the result that there is considerable heart-burning, jealousy and discontent among the subordinates. In the medical schools, students who failed in their examinations on three consecutive occasions are summarily dismissed and sent home. The students pay for their education and why should they be deprived of the benefit of a chance until they secure a pass is what I cannot comprehend. If the Honourable the Minister is really anxious for the formation of a strong body of Independent Medical Profession in this Presidency, he should not shut out students like this. The raising of fees in the Medical College is another undesirable step and is likely to retard the progress of Medical Education rather than promote it. This proposal should therefore be dropped. Next, I come to the question of placing the medical colleges and schools under the control and supervision of the Director of. Public Instruction. The Engineering and other Techinical Colleges and Schools are under the control of the Director of Public Instruction and I fail to see why the Medical Colleges and Schools alone should be exceptions. It is undesirable that the Surgeon-General who is the head of the Medical Department should have also to do with medical education. His official likes and dislikes, whims and fancies, he might bring to operate, with the result that Medical Education would be considerably hampered with, in its progress and the growth of independent medical profession impeded. This proposal is commended for the serious consideration of the Honourable the Minister. Lastly, I have to suggest that the Honourable the Minister should have an Advisory Board of official and non-official medical and Public Health men to advise him on all professional matters. As it is, he is led by the nose-strings of officialdom—the Surgeon-General on the one side and the Director of Public Health on the other, and not having the necessary technical knowledge and not being posted with the recent advances in Medicine and Public Health, there is every possibility of his being misled or misdirected and at times even overpowered in case of disagreement. An Advisory Board will be a safer and better medium of consultation as it will form the connecting link between the people on the one hand and the Government Medical Department on the other.

BOOK REVIEWS.

SURGICAL "DON'T'S" AND "DO'S."

By C. Hamilton Whiteford, M.R.C.S., L.R.C.P., price 3sh. pages 4[illegible].

This small book contains a series of ten articles published during the last 13 years. All the advices have stood the test of time. They range from medical fees, and medical ethics to handling severely injured cases and many regions of surgery. Many in this country will not admit of the statement "Do not allow the patient to be anæsthetised with chloroform, the most lethal of the general anæsthetics in common use," nevertheless it is perfectly true. The professional advice and advice on other subjects are of a very high level. The booklet will be of great use to young medical men, house surgeons and assistants

The book is available at Messrs. Harrison and Sons Ltd, 44-47, St. Martins Lane, W. C. 2.

INCOMPATIBILITY IN PRESCRIPTIONS AND HOW TO AVOID IT.

By Thos. Stephenson, D.Sc. Ph. C., F.R.S Edin. Editor of 'The Prescriber' 30 Pages, "The Prescriber" Office 6, South Charlottee Street, Edinburgh, 1s. 6d.

The time devoted to pharmacy and chemistry in the medical curriculum in India is very short and far from satisfactory. So we have very often seen with regret the prescriptions given by beginners showing scanty knowledge in the art of prescription-writing. The tables given in text-books are very difficult to remember. So the author in this little book deals with the subject of incompatibility in a systematic manner, illustrating with examples the various difficulties most likely to be met with by the physician in his ordinary practice. The subject is dealt with under chemical, physical and therapeutic incompatibilities. The last chapter gives a table of incompatibilities alphabetically arranged. We recommend the book to students and junior practitioners

CARRIERS IN INFECTIOUS DISEASES.

By Henry, J. Nicholas, M. D., M. A., Major, Medical Corps, U. S. Army, Instructor in Bacteriology, Parasitology and Preventive Medicine, Army Medical School, Washington, D. C. 184 pages, 11 illustrations S. 3·50 Williams and Wilkins Co. Baltimore, U. S. A.

This useful book is a manual on the importance, pathology, diagnosis and treatment of human carriers. The book is intended to be of practical value to medical students and physicians, especially those with public health res-

ponsibilities. Part I deals with the general considerations and part II deals with special infectious diseases such as typhoid fever, cholera, diphtheria &c., blood diseases such as malaria, &c., sexual diseases such as syphilis, gonorrhœa, &c. Part III deals with the relations of phorology to preventive medicine. Part IV deals entirely with the carriers in veterinary medicine. The subject is dealt with in a easy and flowing style, avoiding, technical words. This is a very good and useful book, fit to be prescribed as a text book for Sanitary Inspectors' class in this presidency.

STANDARD METHODS FOR THE EXAMINATION OF WATER AND SEWAGE.

By American Public Health Association, 370, Seventh Avenue, New York, 1923 V Edition, 111 Pages.

This edition has been compiled and revised by committees of the American Public Health Association and of the American Chemical Society. That itself is a guarantee of its usefulness to sanitarians. The book is arranged in three parts, with the separation of methods for water from those for sewage, effluents and grossly polluted waters, and for sewage sludge and muds. Hardness, alkalinity and acidity are presented in the book in terms consistent with the new and up-to-date view. An article on hydrogeution concentration and a method for its colorimetric determination is also given. The book is very useful for Bacteriologists, especially for those whose duty it is to examine purity of water and for those students who take up to sanitary science as a speciality.

PRACTICAL MORBID HISTOLOGY

By Robert Donaldson, M.A , M.D., C.H.S., F.R.C.S., with a foreward by Sir Humphrey Rolleston, K.C.B., M.D., 364 pages, 15 s. William Heinemann (Medical Works) Ltd., London.

This is a useful handbook for the use of both students and practitioners. This is a convenient book for laboratory workers and especially for beginners. The subject matter of the work gives not only the descriptions of the histology of various diseased tissues, but also gives a brief account of the naked eye appearances. Illustrations are omitted, as the majority of illustrations, generally relating to morbid histology, are of very little help to the novice and further each student ought to have his own illustration in his slide-box and no picture can ever take its place. To meet the requirements of students preparing for examination a series of tables has been arranged in appendix II setting out the characteristics of the various worm-parasites and their ova, together with brief notes regarding their life history. We recommend the book to students as well as to practitioners.

DENTAL SURGERY AND PATHOLOGY.

By J. F. Colyer, L.R.C.P., M.R.C.S., L.D.S., Consulting Dental Surgeon to Charing Cross Hospital. Fifth Edition, 6 plates and 951 illustrations. 931 pages. Rs. 28-0-0 Longmans, Green and Co., 39 Paternoster Row, London E.C. 4. New York, Toronto, Bombay, Calcutta and Madras 1923.

This is a standard work on Dental Surgery. The subject is dealt with under the following chapters :—Normal and pathological dentition ; variations and defective formations of the teeth ; abnormalities in the position of the teeth and its treatment ; caries of the teeth and its treatment : diseases of the pulp and its treatment ; diseases of periodontal membrane ; deposits on teeth ; dental cysts ; treatment of dental diseases in children ; Odontalgia and neuralgia ; Operation of extraction of the teeth ; tumour of the jaw ; Local anæsthesia in dental surgery etc., etc. The subject is dealt with thoroughly. All through the work the author has kept before the reader the influence of septic conditions of the teeth on other pathological processes. The chapters on 'Abnormalities in the position of the teeth and treatment' are very instructive. The book is an excellent one on Dental Surgery and Pathology.

HANDBOOK OF SURGERY.

By George L. Chiene, M.B., C.M., F.R.C.S., Surgeon Edinburgh Royal Infirmary. 592 pages, 109 illustrations, price, 12s, 6d. E. and S. Livingstone Edinburgh are the Publishers. Copies can be had at Messrs Butterworth & Co, 6, Hastings Street, Calcutta.

This useful handbook of surgery is intended to provide a book for those who have not time to study the larger text books. The whole subject of surgery has been dealt with within 592 pages in a condensed form. The author has emphasised in the work the more common and more important surgical conditions met with. Detailed descriptions of operative treatment is not given and the readers are referred to the bigger text books on the subject. The whole book is divided into two parts. Part I deals with general surgery and part II deals with Regional Surgery. The illustrations are very good and clear. The book is very valuable for examination-going students, to brush up their memory and also to general practitioners.

BACTERIOLOGY.

By H. W. Conn, Ph. D., Bacteriologist of the State Board of Health of Connecticut and Harold J. Conn, Ph. D. Soil Bacteriologist of the New York Agricultural Experiment Station, 441 Pages. S. 4·50. Williams and Wilkins, Baltimore U.S.A. 1923.

This book deals with general bacteriology and its application both to medicine and to agriculture. Part I deals with 'General Bacteriology ; Part II deals with 'Non-Pathogenic organisms ; Part III deals with Pathogenic organism ; Part V deals with 'media-making, characterization of bacteria and the reaction of media and hydrogen—ion concentration. The

BOOKS RECEIVED.

The following books have been received and the courtesy of the Publishers in sending them is acknowledged. Reviews will be published from time to time. [ED. ANTISEPTIC].

The Manager of the Antiseptic will be pleased to supply the readers any books acknowledged hereunder, or others at the Publisher's price. When sending their order the readers are requested to send a remittance for the full value of the book. That a remittance in advance should be requested is no reflection on the credit of any reader of the Antiseptic, but is simply a condition necessitated by circumstances.

Cancer. Its Causation and Cure.— By John Hayer, M.Sc., P.H.D. Published by Messrs. C. Tinling & Co. Ltd., 53, Victoria St., Liverpool, Price 5 S. Pages 139.

An Introduction to Practical Bacteriology.—By T. J. Mackie, M.D & D.P.H. and McCartney, M.D.,D.Sc. Published by Messrs. E. S. Livingstone, 16 & 17 Teviot Place, Edinburgh. Copies available from Indian Agents, Messrs. Butterworth & Co., Ltd, 6, Hastings Street, Calcutta. Price 8 s. 6d. Rs. 6 6-0. 1925, Pages 304.

Organotherapy in General Practice. Published by Messrs. S. W. Carnick & Co., 417,421, Canal Street, New York City. Price S. 2·00 Pages 253.

Elements of Endocrinology By S. K. Mukerji, M. B. (Cal. Law), Editor, Indian Medical Record. Published by A. C. Bishard Esq., Indian Medical Record Book Department, 2, Horokumar Tagore St., Calcutta, 219 Pages.

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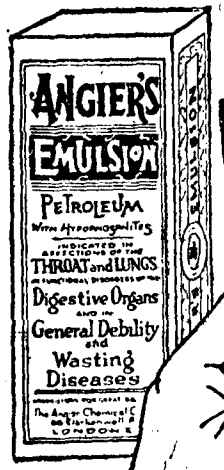

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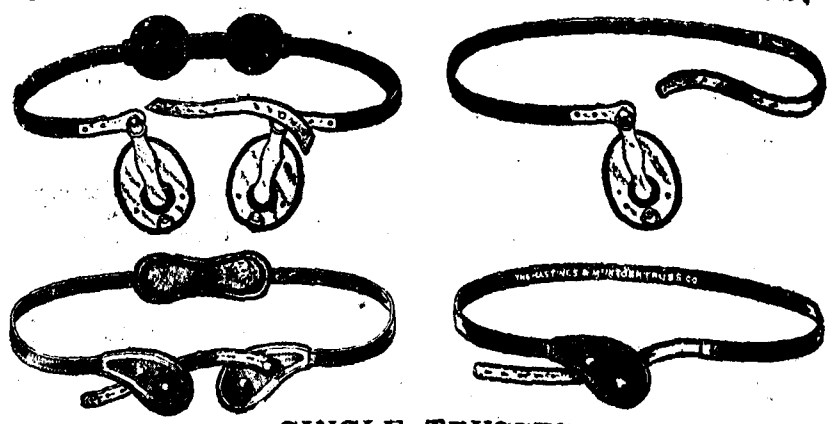

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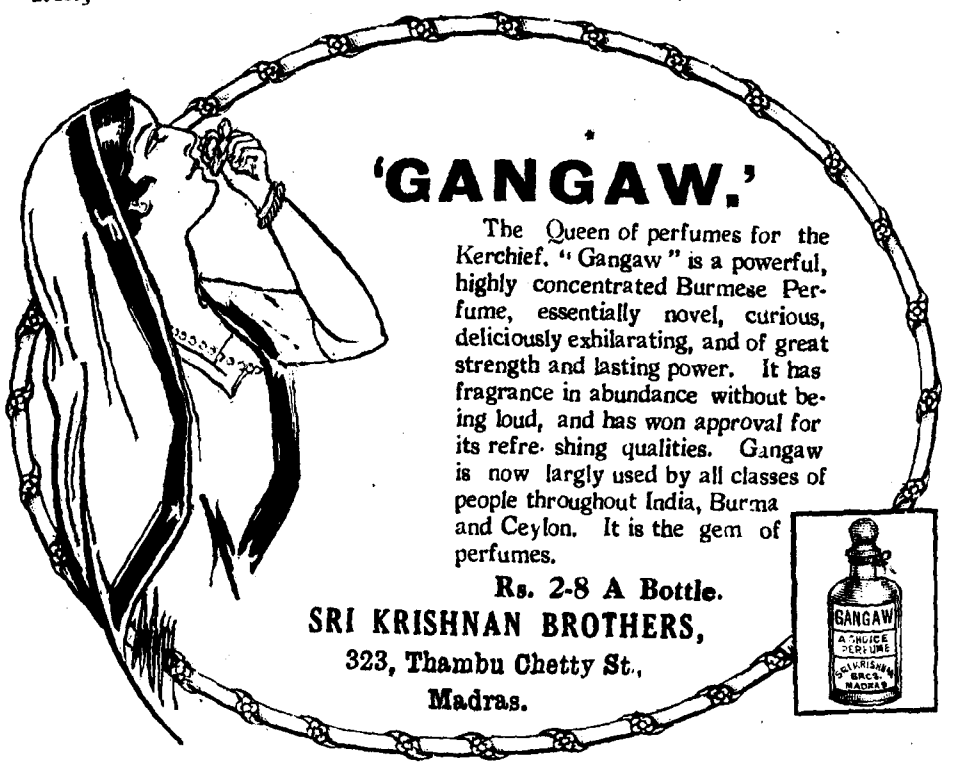

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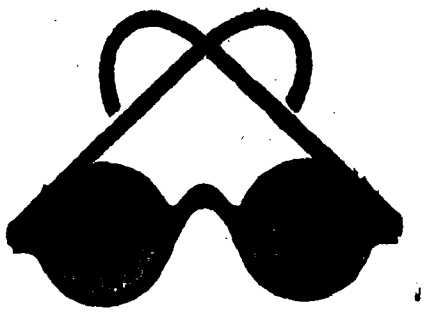

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