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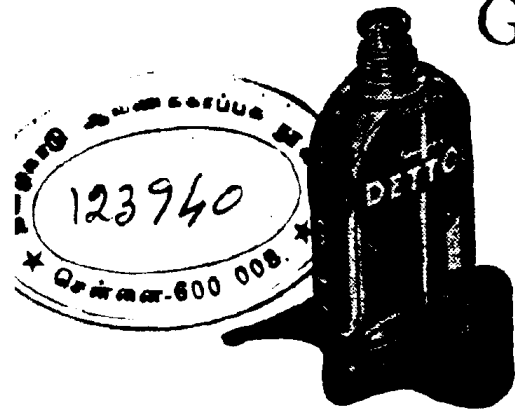


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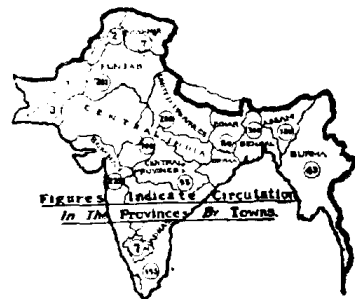
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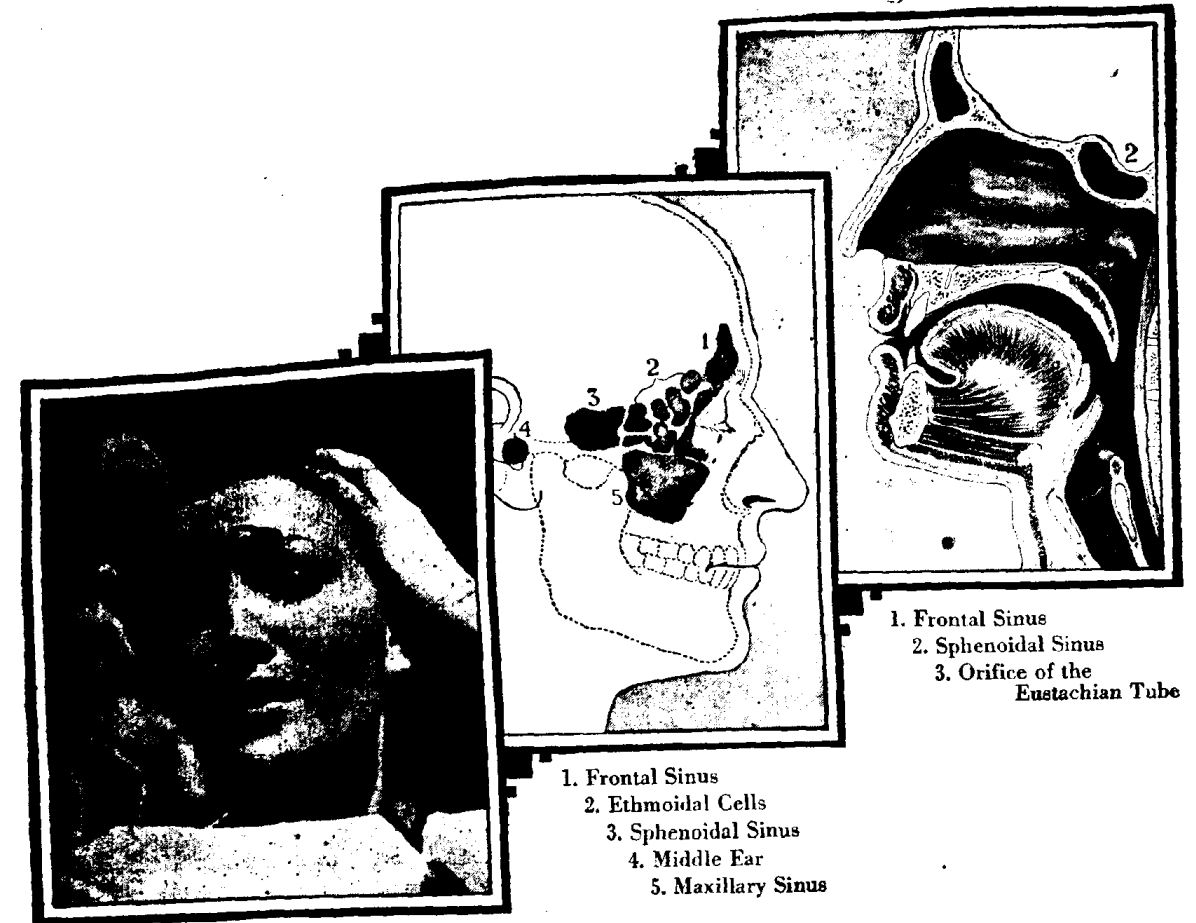
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ADDRESSES AND ARTICLES

Cultivation of Malarial Parasites with Plasmodium Knowlesi (Report of the preliminary work)

● Drs. A. K. Niyogi and A. N. Roy, Indian Institute for Medical Research, 41, Dharamtala Street, Calcutta

We selected Plasmodium Knowlesi for our cultivation work because of the possibility of a continuous supply of live parasites from a rhesus monkey chronically infected with it. The first step has been the repetition of the original Bass and John method for the cultivation of human malarial parasites and of its various modifications and their evaluation.

The first problem to attack was to find out the necessity of dextrose for *in vitro* culture. In all modifications of Bass and John method, the addition of dextrose has been mentioned as an essential point in culture. The amount has been varied from 0.005 g. per 100 c.c. of whole blood to 0.02 g. or even to 0.05 g. In our experiments we have found that in case of Plasmodium Knowlesi, dextrose has been found to be necessary in very small quantities as 0.005 percent. In fact, the amount of dextrose to be added has been found to depend on the amount of glycolytic enzyme present in blood. If the enzyme be very active, glucose present for utilisation by the parasites will be converted by it and the growth of the parasites will stop earlier.

The second point to investigate was to note the oxygen requirement of Plasmodium Knowlesi *in vitro*. The experiments, concluded so far, point out that oxygen is essential for its growth but the requirement is rather low. If oxygen tension be reduced inside the culture tube by alkaline pyrogallate, the parasites in the surface layer of R.B.C. are found to be equally developed as in the "aerobic" method advocated originally by Bass and John. It thus seems that the amount of oxygen present in the plasma and in the corpuscles, the amount that cannot be removed by the alkaline pyrogallate, is primarily important for their growth. But it has been found that the parasites lying deeper in the blood have died and degenerated. This may be due to the lesser amount of oxygen deeper below.

The removal of leucocytes from the blood, as advocated in some modifications of Bass and John method, has been found to be unnecessary in the case of Plasmodium Knowlesi as in our experiments we have met with very little phagocytic activity of the leucocytes on the parasites *in vitro*. Similarly some of the methods which advocate the removal of the immune sera and its replacement of normal sera have not given any better result in our experiments.

It is admitted that no problem on malaria is so much important as is the cultivation of the malarial parasites *in vitro* on the success of which the present-day problem of malarial prophylaxis and attack may undergo revolutionary change. Attempts are being made since the early part of this century all over the world, to develop a technique for cultivation *in vitro*. Bass' method published in 1912 was the first recorded attempt and gave the early workers very high hope of attaining it and although supported by some scientists, it has been proved unsuccessful in the more recent papers. Our work was conducted in all the important modifications of Bass' method with the monkey malarial parasites. We hope that success with any of the member of Genus Plasmodium will make it possible to attain the same with others if necessary with a little addition and alteration. This report is of a preliminary nature. Any attempt for cultivation must be undertaken very systematically, elucidating point by point the metabolism of the parasite. For that purpose it is proposed to undertake the work on the following lines:

1. Oxygen requirement of the parasite *in vitro*.
2. Optimum temperature for cultivation.
3. Possibility of making sub-culture.
4. Viability of the parasite *in vitro*.
5. Effect of continuous salt and oxygen supply on culture.
6. Possibility of cultivation after isolating the parasite from the red blood corpuscles.
7. Preparation of various artificial media.

We are grateful to the All-India Medical Licentiates' Association for the grant of Rs. 200 which has helped us to a large degree in carrying out a few preliminary investigations and out of which no personal remuneration has been taken. The proposed line of work will entail a much heavier expense in animals, material and the employment of a laboratory assistant particularly for this work. The problem is of utmost importance from the scientific and public health point of view and we do hope that the Association will grant a more liberal amount and help us in carrying it out.

A Programme for Eye-Sight Preservation in Schools

● Dr. M. K. Gupta, L. O. (Mad.), Zeug. (Vienna), Eye-Specialist, Mohan Eye-Hospital, Aligarh

Much of our education is gained through storing up knowledge by means of sight, and the major portion of knowledge acquired by school children is transmitted through the eyes. If the eyes are defective, the child will be seriously handicapped in its acquirement of knowledge, and in its development of memory, for memory is almost entirely a gallery of stored photographs made by the eyes. A large percentage of the defects of vision can be effectively detected and corrected with less expense and lesser difficulty than any other kind of physical defect; therefore, there is little excuse for neglect of the eyes. It is possible for the teacher to render most valuable and helpful assistance by personal interest and service, as outlined in this article.

There are thousands of school children in our country with defective eye-sight. A word of advice to their parents may help to relieve the teacher of much worry. If eye defects are not corrected, his great work as a teacher will not be as effective as it should be and much of his good efforts will be lost.

The object of an "EYE SIGHT PRESERVATION DAY" in schools is merely to discover the fact that a child has defect of vision or symptoms of a defect rather than to determine the degree of deficiency.

EYE SIGHT PRESERVATION DAY should be observed annually, shortly after the beginning of each school session, and should be an integral part of the general school programme. On this day the educational programme should be omitted until the tests and observations have been completed.

The following directions are intended to make clear how observations are to be conducted, defects recorded and recommendations sent to parents or guardians.

In advance of EYE SIGHT PRESERVATION DAY each teacher is supplied with a complete set of (1) "Vision Record Cards" properly filled out with the name and address of each pupil in the class.

2. "A distant vision chart".

3. Notification cards to be sent to parents or guardians of children with manifest defects.

4. The place for the "Vision Chart" should be selected and a tack placed where the chart may be hung.

5. The testing distance of 20 feet from the vision chart should be measured accurately.

6. Preliminary vision tests should be made on a few children prior to EYE-SIGHT PRESERVATION DAY to familiarize the teachers with the technique of the vision tests.

7. One student at a time should be tested and his one eye be covered with a piece of stiff paper, for the purpose of testing each eye separately.

INSTRUCTIONS FOR TESTING ACUTENESS OF VISION

The eye test recommended is of a mechanical nature calling only for simple observation on the teacher's part.

It is important that teachers realize that this preliminary examination of acuity of vision is, at the best, but an approximation and will admit only the detection of the cases most seriously handicapped by defective vision.

1. *Types of acuteness of vision.*—The conditions revealed by the test and observation may be grouped as follows:—

(a) Normal acuteness of vision (normal vision).

(b) Normal acuteness of vision accompanied by eye strain (usually far-sightedness).

(c) Diminished acuteness of vision for distance (usually near-sightedness).

(d) Diminished acuteness of vision both for distance and reading (High degrees of both far-sightedness and near-sightedness).

2. *Methods.*—(a) **EXPOSURE OF CHART:** Charts should never be exposed except during examination as pupils are apt to memorise the order of the letters.

(b) **LIGHT:** Tests should be made in good day light, and not on cloudy days. If good daylight is not available, artificial light properly shaded may be used. The chart should be hung with the surface flat on a level with the student's eyes where it has the light source.

3. *Testing distance.*—The pupil may sit in chair placed at the "Eye test line" 20 feet (6 meters) from the chart and directly in front of it.

4. *Actual test.*—i. Each eye should be tested separately, starting with the right eye, the other being completely covered with a card or slip of stiff paper so as not to press upon the eye-ball. This is important as pressure might induce incorrect answer.

ii. The pupil should start at the top of the chart, and should read down from left to right.

iii. The degree of acuteness of vision is determined by the smallest letters that can be read by each eye separately at 20 feet from the chart.

iv. To illustrate, if, with the right eye (the other covered) all the letters in line 7 can be read without mistake, the right eye has normal vision i.e., 6/6. If the left eye is tested, (the right eye covered) and found to see not better than the letter on line No. 5, the left eye has 6/12 vision, as indicated by the figures above that line of letters. The record would be as follows:—

R. E. V. = 6/6., L. E. V. = 6/12.

ILLUSTRATIONS OF TYPES OF ACUTENESS OF VISION

Type A: A record of 6/6 in both eyes (when tested separately) and not accompanied by any symptoms of eye strain such as cross eyes, habitual headache, unnatural weakness after study, styes, lid troubles and bloodshot eyes, etc., will mean normal vision of type A. It is to be recorded as follows:—

R. E. V. = 6/6. L. E. V. = 6/6.

Type B: A record of 6/6 does not indicate normal eyes if accompanied by symptoms of eye strain such as cross eyes, habitual headache, and unnatural weariness after study, bloodshot eyes etc. Such evidence of eye strain is designated by the symbol 'S' and would be recorded as follows:—

R. E. V. = 6/6 (S) L. E. V. = 6/6 (S)

This indicates normal acuteness of vision plus eye strain.

The detection of eye strain symptoms depends upon careful class room observation, and not upon the use of the vision chart alone.

Type C and D: A record of less than 6/6 in one or both eyes, i. e., 6/60, 6/36, 6/24, 6/18, 6/12, 6/9 indicates diminished acuteness of vision.

Note:—i. Always test each eye separately even though vision is equal in both the eyes. If the person making the examination suspects that child is memorising the letters, have the child read them from right to left or the examiner may easily prove by having the child call the letters as indicated by the examiner pointing them out of their sequence.

ii. Children wearing glasses should be tested first without them and the result recorded, then they should wear their glasses and again tested and result recorded. If the vision with glasses is less than standard then they should be referred to the specialist for re-examination.

RECORDING OF RESULT OF OBSERVATION

Record each child's acuity of vision in the pupil's card of Vision Record, by fractions in

the proper column, also indicate by the symbol 'S' the presence of any symptoms of eye strain such as cross eyes, headaches, and the observance of the teacher as to unnatural weariness after study, head tilting, squinting, sensitiveness to the light etc.

It is very necessary that records of all tests of acuteness of vision be preserved, so that as the child advances from class to class, the teacher will have record of the child's previous examination.

Note:—It should always be borne in mind that perfect vision does not mean perfect eyes, normal vision does not necessarily indicate a normal eye.

Many children with perfect vision may have defect of considerable degree causing red eyes, headaches, etc., and making the child backward in school. Such defects may not be indicated by vision below normal and cannot be detected except by one skilled in eye work.

The most desirable solution, which is aimed at, and which may eventually be realised, is an arrangement whereby every pupil may receive periodically a thorough eye examination by a competent eye specialist.

VERIFICATION, NOTIFICATION AND FOLLOW-UP

All children with suspected defective vision should be referred to an eye specialist for confirmation of the teacher's findings before the child is given a notification card to take home.

Notification card should be sent to the parents or guardians of children whose acuteness of vision is less than normal, or who have symptoms of strain notifying the evidence of the defect, and recommending that an eye specialist be consulted.

The teacher does not have much time to spend on the follow-up. If the results are to be obtained, it is necessary that there should be some follow-up on the part of the teachers from time to time, for, many parents through lack of appreciation of importance and urgency of relief may neglect to have the child's eyes properly examined and given proper attention.

I have been doing this work for the last few years, and I am glad to say that I have found complete success in this scheme. I would earnestly request the various provincial governments to take up this scheme and thus do a great service to the future generation.

[Specimen Vision Record card, Distant Vision Chart, Notification card, Preliminary Test charts, Result of Examination Chart which the author has submitted along with this article are not published owing to exigencies of space. Those readers who are interested in this subject may obtain these specimen Charts from the author. Ed., I. M. J.]

Notes on Puerperal Sepsis*

● Dr. Alice L. Randall, M. D., American Baptist Mission Women's Hospital, Gauhati

The death rate from puerperal sepsis in India is appalling. I venture to say that more women of India die from puerperal sepsis than from all of the other complications of pregnancy combined. Just how high that rate is, I do not know and it is my opinion that no one else knows.

What constitutes puerperal sepsis or "child-bed fever"? It is a fever beginning the third or fourth day after delivery arising from an infection of the uterus—the fever rising to 103-104 or more degrees Fahrenheit. It may be initiated with a chill. At the same time there may be a tenderness over the uterus which has a doughy consistency. The lochial discharge may be increased in quantity or may be lessened. It may be putrid in odour or may be devoid of odour.

History.—Puerperal sepsis as a specific infectious disease was unrecognised as such until the middle of the last century. In 1773 Charles White wrote a book on "A Treatise on the Management of Pregnant and Lying-In Women." He recognised that it was an "absorption fever" with "stagnation" of the discharges which thereby become "putrid." In 1843 Oliver Wendell Holmes wrote a paper on "The Contagiousness of Puerperal Fever." This paper placed the responsibility for outbreaks of the disease on the physician or midwife in attendance. The names of Semmelweis and Pasteur and many others are connected with the increase in the knowledge of the infectiousness of this disease and the world does honour to them for their contributions on this subject.

Bacteriology.—The infection may be caused by any of a number of organisms. The most virulent organisms are the Streptococcus

Hemolyticus, Streptococcus Viridans and the anaerobic Hemolytic Streptococcus. Other organisms may be other strains of Streptococci, Staphylococci, Gonococci, Bacillus Coli Communis, Bacillus Diphtheriae, Bacillus Aerogenes Capsulatus, Bacillus Typhosus or Pneumococcus. May I say again that the Streptococcus Hemolyticus both aerobic and anaerobic are the most virulent and so the most to be feared?

Pathology.—The bacteria invade the uterus from the vagina either having been present there before labour set in and then carried up to the uterus by the hands of attendants or by instruments or else are placed in and around the cervix by the hands of attendants. Should these organisms be of a less virulent type the body throws up a wall of leucocytes in behind the necrotic layer—the deciduum—and the infection is confined to the uterus. But should they be of a virulent type the infection spreads rapidly through the uterine wall by means of the enlarged open blood vessels and lymphatics and a peritonitis is set up before the body has had a chance to get her "policemen", the phagocytic cells, of the blood on duty. Then a blood stream infection ensues which is usually fatal.

Mode of Infection.—No doubt the most common mode of infection is from the hands of midwives, "dhais", doctors and nurses attending. Sometimes the infection may have been present in the vagina of the patient and have been carried up to the uterus by the hands of the attendants or by instruments.

One epidemic in a hospital—not in India—occurred from the noses and throats of the doctors and nurses attending in the labour room.

Indiscriminate vaginal examinations even with sterile gloves and vaginal preparation are to be deplored. Those without sterile gloves and a vaginal preparation of some kind should not even be tolerated by the medical profession. And yet there are in India many so-called obstetricians who have no sterile gloves in their midwifery bags.

Modes of Prevention.—Of course, the ideal for every delivery would be the rigid aseptic technique used in the best hospitals. But for most of the practising midwives, nurses and doctors of India that is impracticable. But there are several simple things which doctors and midwives could learn to do without great expense to themselves and with great profit to their patients.

The first is to do *only rectal examinations*. For this purpose old rubber gloves or finger cots that have been washed well with soap

*A paper read at the Gauhati Conference of the A. I. M. L. A., Dec. 35.

(Continued from previous page)

This method has been compared with well-known colorimetry and non-colorimetry methods and gives satisfactory results in my hands. It needs to be mentioned here that I have prepared my own colorimeter for this purpose.

Eliminating the inconvenience of Mandelic Acid Therapy IN THE TREATMENT OF URINARY INFECTIONS

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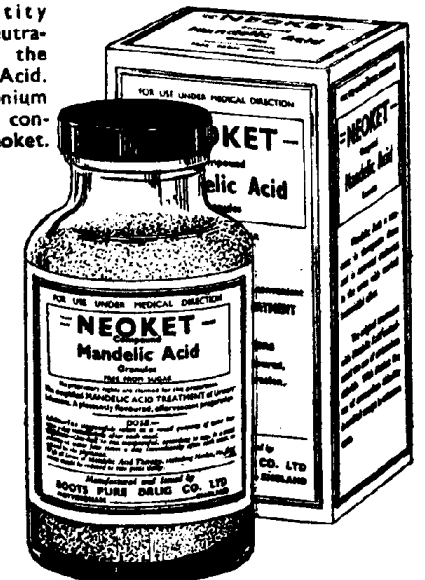
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Glucose in Health and Disease

● Dr. Paritosh K. Mukherjee, Demonstrator of Physiology, Ronaldshay Medical School, Burdwan

If we study the condition of glucose in blood—its normal level, how that blood level is maintained and how it may be altered under varying circumstances—we may possibly have an idea of the whole phase through which this important energy-supplying element has to pass.

The carbohydrate, taken with our food, undergoes a succession of changes under the influence of the various digestive enzymes of the alimentary canal, resulting in the formation of glucose, a monosaccharide. This glucose is then absorbed into circulation and conveyed to the liver, where it is deposited in the form of glycogen or animal starch under the activity of the hepatic cells. Glucose in the form of glycogen is also formed in the liver, to a certain extent, from fat and protein we ingest and in extreme cases, when the supply falls short, from the fat and protein in the tissues. The liver thus acts as a store-house for glycogen but not to an unlimited extent. When the limit is reached, it will no longer convert glucose into glycogen, but allow the former to pass into the general circulation, and, the glucose, which is thus set free, constitutes the glucose of the blood and supplies the immediate needs of the tissues. Normally, this glucose level of blood varies from 0.08 to 0.1 % and whenever it goes below or above this level the condition indicates an abnormality, hypo or hyper-glycæmia.

GLUCOSE IN NORMAL HEALTH

Food is indispensable for supplying energy to the body, repairing the body-tissues and maintaining their growth. Proteins are associated mainly with repair and growth, but the energy-supplying function is confined, chiefly, to glucose and fat. Glucose thus constitutes an important factor by not only undergoing oxidation itself in the tissues but also by favouring the complete combustion of fat. Some of the endocrine secretions, specially that by the Beta-cells of the Islets of Langerhans of pancreas, plays here an important part, influencing on one hand the better utilisation of glucose in tissues and on the other the mobilisation of glucose into glycogen in the liver. As the glucose is used up in the

process of tissue metabolism by being converted into CO_2 and H_2O , a call for glucose arises in the blood and when this call reaches the liver, the stored up glycogen undergoes changes by the activity of an enzyme, the liver diastase, so that a fresh supply of glucose passes into the circulation and maintain the the normal level, which, as has been already said, is essential to meet immediate requirement of the tissue.

GLUCOSE IN DISEASE

The glucose in blood is wholly utilised by the body-tissue and as it is an indispensable factor for supplying energy to the body, we may expect it not to be wasted in any way, either, by producing some intermediate and injurious substances due to incomplete combustion or by being eliminated out of the system as glucose through the only excretory channel, the kidneys. Incomplete combustion is possible if insulin is deficient, and, excretion through the kidneys is brought about not only by insulin but also by some other factors—the disease of the liver and kidney being the most important amongst them.

Normal urine is sugar free but conditions may arise when all possible sugar tests will be positive and such conditions are collectively known as glycosuria or leakage of sugar through the kidneys. If more sugar is ingested, or less complete oxidation of carbohydrate takes place, or if the liver and kidneys are damaged, more glucose will be in the circulating blood, so that, the level is far above the normal. The kidneys will allow the glucose to be retained in the blood so long as the level does not exceed 0.18 % which is the threshold point, but, if that limit is surpassed, the excess glucose will leak through the kidneys and appear in the urine giving rise to the condition of glycosuria, which according to the nature of pathological changes may be one or the other of the following varieties:

1. *Alimentary glycosuria*:—This is not pathological and happens in normal individuals depending on the amount of sugar ingested. It has been already said that the storing capacity of the liver is limited and any excess amount of glucose will be thrown into the general circulation. The normal glucose tolerance limit is 100 grammes with 300 to 400 c.c. of water and so when a large quantity of glucose is taken, the excess amount will raise the glucose level in blood above the normal and as soon as this will exceed the renal threshold, it will leak through the kidney till in less than two hours the normal level is reached.

2. *Renal glycosuria*:—It is a condition when due to some diseases the renal threshold goes down, so that a little excess of glucose in blood, although it is far below the threshold limit, makes its ways through the kidneys.

3. *Pancreatic glycosuria*:—When there is a lesion in the Islets of Langerhans and the secretion of insulin is interfered with, there is less tissue oxidation and less storage of glycogen in the liver and as a result of this, more glucose passes into the circulation, raising the blood sugar level permanently far above the normal and consequently resulting in glycosuria. Both the Alpha and Beta cells normally contain protoplasmic granules but in diabetic mellitus, when the insulin, the anti-diabetic hormone, is deficient, the Beta cells are only found to be devoid of granules which is a conclusive proof that it is these cells which are responsible for the secretion of insulin, and so a lesion in them is the only cause of this variety of glycosuria.

4. *Endocrinal glycosuria*:—This condition is brought about by the stimulation of the sympathetic nerve as a result of hyper-thyroidism and hyper-pituitarism.

5. *Nervous glycosuria*:—This condition happens, when an injury or disease of the brain causes stimulation of the liver through the splanchnic nerves and also through the adrenals.

ESTIMATION OF GLUCOSE IN BLOOD

The normal blood-sugar level, as has been already said, varies from 0.08 to 0.1 %, but, in cases of glycosuria this level becomes much higher. This abnormal high sugar level is again subject to variations depending on the variety of glycosuria. So, if we can properly estimate the blood sugar level we may get the clue as to the exact nature of glycosuria. The sugar tolerance test in this respect is of great help and gives us the definite diagnosis.

The sugar tolerance test:—A sample of blood is taken early in the morning when the patient is still in the empty stomach, i.e., 12 to 15 hours after a meal. Thereafter 50 grammes of Pulvis glucose with 300 c.c. of water is given by mouth and further samples of blood are collected for two hours, at the interval of half an hour commencing after the administration of glucose. Every time before and after the administration of glucose, the sugar is estimated and the nature of the disease is determined by noticing the variations, as will be evident from the following chart:—

Nature of the case	BLOOD SUGAR LEVEL			
	1½ hour after glucose	1 hr. after glucose	1½ hrs. after glucose	2 hrs. after glucose
Normal	0.086%	0.126%	0.135%	0.112%
Renal glycosuria	0.098%	0.1%	0.096%	0.098%
Lag curve	0.09%	0.148%	0.24%	0.145%
Mild Diabetes	0.18%	0.190%	0.2%	0.194%
Severe Diabetes	0.26%	0.278%	0.294%	0.33%

The above chart would show that in health the percentage of glucose in blood comes to normal within the specified time, but in true diabetes the sugar level does not come to normal within that time. The reason is that as soon as blood-sugar reaches the standard, glycogen-storage-mechanism comes into action, the islets of Langerhans are activated and lowers down the blood-sugar in normal persons. The alimentary, nervous, endocrinal glycosuria do not follow any such clear cut rule and so the history of the patient should be taken into consideration before arriving at a definite diagnosis.

The 'Lag' curve here needs some explanation. In some cases there is an abrupt rise of blood-sugar level above the threshold limit. This happens when the sugar storage mechanism of the body fails to keep pace with the rate of absorption of glucose with the result that there is a storage lag as indicated by the rapid rise of sugar level above the upper normal limit. The phenomenon is, however, regarded as a condition in the early stage of true diabetes mellitus.

How to estimate the sugar:—The method generally adopted by me is colorimetry and is as follows: Take ½ c.c. of blood (venous), mix it with 5½ c.c. re-distilled water and coagulate over a flame simply by beating till it becomes light brown in colour. Add to this a drop of 25% acetic acid solution, a pinch of sodium sulphate and 1 c.c. of dialysed iron. Cool the mixture and filter it. The filtrate should be 5 c.c.; if it is less sufficient water should be added during filtration to make it 5 c.c. Take 2½ c.c. of the filtrate, add to this 2½ c.c. of picric-picric solution. Place the mixture in a boiling water bath for 15 minutes. Similarly accurately measured 3 specimens of glucose solutions of known strength (0.1; 2; & 0.3 %) with picric-picric solution, should be placed in boiling water bath for 15 minutes. Cool all the solutions and compare the unknown with those of the known strengths. The percentage of glucose in the solution of known strength with which the former solution tallies gives the approximate percentage.

(Continued at foot of next page)

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and water may be used. To make a rectal examination in order to find out the amount of dilatation and to verify the part presenting is a very simple procedure. The patient should be in the dorsal recumbent position. The rectum of the patient should be empty if possible and the examination should be made during a pain. Of course gentleness must be used particularly if the membranes have ruptured, for puerperal infection has been known to occur from rubbing the posterior vaginal wall across the cervix. But in all ordinary cases there is no great danger from rectal examinations. In our hospital it is the only pre-delivery examination that house doctors are allowed to do. If a vaginal examination seems necessary, the doctor in charge must be notified before it is done. Then the vulva is scrubbed with sterile soap and water and either lysol solution or "dettol" solution or cream is used on the examining sterile glove.

Second:—Lysol, dettol, or bichloride of mercury or some other simple antiseptic should be part of the armamentarium of everyone practising midwifery. The solutions in the proper strengths may be used over the vulva and in the vagina without harm to the patient or baby.

Third:—The use of sterile rubber gloves with a no-touch technique. By that I mean not allowing the bare hand to come in contact with the outside of the rubber glove while putting it on. These gloves may be boiled up at the patient's home. The use of rubber gloves applies to doctors and nurses. If dhais and the untrained midwives can be persuaded to remove their bangles, trim their finger nails and scrub their hands with soap and water, perhaps for the present that is all that can be expected of them. If they could be persuaded to use a little lysol in addition to the above many more cases of puerperal sepsis would be prevented.

Treatment.—Absolute rest in bed with the head of the bed elevated is of course necessary. Five to ten grains of quinine three times a day should be given. This takes care of any concomitant malaria that may be present and is a uterine tonic besides. A good rich liquid diet in large quantities followed by light foods is most necessary. Specific anti-sera in my hands has not been very successful. Sometimes it seems to do some good and sometimes it does not. I have used iodine intravenously with indifferent success. We have in the new drug—sulphanilamide—a marvellous new method of chemotherapy that should be a boon to doctors in India. The preparations

"Prontosil" and "Soluseptasine" and the same drug under some of the other trade names are to be recommended. The following reports are taken from many cases that have come into our hospital from the outside:

Case No. 1. Hubhoda—age 14 admitted 5-4-'39, Married 3 years. Patient was delivered in a village. Fever came up third day after delivery. Patient came complaining of fever for 8 days, scanty lochial discharge and pain in lower abdomen. Temperature rose daily from 102-105 with a chill. Hemoglobin 15%, W. B. Count 15,550. Neg. for Malaria parasites. Stool neg. Urine few granular casts on admission. 10 days later urine showed pus cells three plus, bacteria three plus, granular casts two plus. Patient had had 5 injections of Antistrep serum before coming to the hospital and in every site of injection she developed a large abscess. She had one breast abscess after another—had had one breast abscess before delivery at home. Was in the hospital 74 days. This was before the days of Prontosil or allied drugs. Patient went home well and was seen one year later and was in excellent health.

Case No. 2. Kohila—age 15 Married 24 years. Had delivery at home 3 days before admission—Placenta retained three days. Fever with chill 102-104. On admission bladder was up to the umbilicus and a putrid black discharge was coming from the vulva which was greenish and sloughing. Anti-typhoid fever serum was given. Saline and glucose 25%—300 c. c. on the 4th and 5th day. On the 4th day patient showed signs of tetanus developing and was given Anti-tetanus serum. Patient went into convulsions on the 5th day and died on the 6th day after admission—never regaining consciousness. I think this was a case of puerperal sepsis complicated by tetanus.

Case No. 3. A woman—Rojon by name—25 years of age—Married 10 years. Para 4—came into the hospital—walked in from the taxi and climbed up on her bed. She said that she was full term and had been having pain but that her pain had stopped at twelve o'clock noon. She had been having pain since the day before. This was about four p.m. I saw her at six p.m. when she was on the operating table and my assistant told me she had a placenta previa. I did not examine her abdomen but went and scrubbed immediately. I found a placenta right in the place where the vault of the vagina should have been and delivered it. It was lying free. Then I went up after the baby—as I thought and I encountered a large firm mass to the right. My first thought was that it was an immense fibroid. I put my hand up farther in search of the baby and my fingers encountered a loop of intestine. Then I realized what had happened. The fibroid that I thought I had felt was the uterus split from the internal os right up to the fundus. We got ready for an abdominal operation immediately and delivered the baby abdominally. It was found to have an immense hydrocephalus—the cause of the dystocia. The uterus was amputated at the cervix and the woman was closed up. Then she was given one ampoule of "Prontosil" intramuscularly. On the 5th day after operation she developed a moderate fever which was found to be due to malaria. Other than that she had an uneventful convalescence. I attribute to "Prontosil" the fact that she developed no infection though she had been examined by my assistant and by myself, my hand entering the abdominal cavity.

By way of summary I may stress the methods of prevention and cure of puerperal sepsis.

1. Make only rectal examinations.
2. Wear sterile rubber gloves when delivering the patient.
3. Have the vulva scrubbed with soap and water and flushed off with some simple antiseptic.

(Continued at foot of next page)

The Third Stage of Labour and Its Management

• Dr. J. N. Sen Gupta, L. M. F. (Bengal),
M. R. C. S. (Eng.), L. R. C. P. (Lond.),
L. M. (Rotunda), D. G. O. (Calcutta)

The whole process of labour is clinically divided into three stages. The third stage commences after the delivery of the foetus and ends with the delivery of the after-birth (placenta and the membranes). The duration of this stage varies in different individuals, and may be from a few minutes to a few hours, and in exceptional cases may exceed twelve hours. It is in this stage that middle-some midwifery is done more often than thought to be in common practice. Careful management is of paramount importance to avoid severe and even fatal complications that may follow. Davidson went so far as to say: "It is the proper management of the third stage that the accoucheur is paid for". The emphasis is without any exaggeration indeed.

MANAGEMENT

Immediately the child is born, cover up the mother and watch her pulse. Divide the cord when it ceases to pulsate. If the second stage is conducted on the left lateral position, turn the mother to dorsal position, as it is the most convenient position in the management of the third stage. Difference of opinion exists about controlling of the fundus. To do this one hand is placed across the abdomen to feel the

(Continued from previous page)

4. Use some antiseptic in the vagina at the time of delivery.
5. Wear a mask when delivering the patient.
6. Force fluids after the disease has set in.
7. Use sulphanilamide in the treatment of the disease.

If we doctors do not take the lead in demanding a better standard of midwifery who will do so? May I impress upon every one who practises midwifery to insist upon the above minimal requirements for safe home deliveries?

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upper limit and the consistency of the fundus uteri. Indiscriminate digging and careless performance of this simple task may cause much more harm than good. Carefully watch the colour and pulse of the mother for signs of internal hæmorrhage.

In an average case, in about 15-30 minutes, the following signs will indicate the separation of the placenta:—

1. Slight hæmorrhage per vaginam.
2. Lengthening of the cord.
3. Rising of the fundus uteri.

Now stand on the mother's right side, place the left hand above the fundus and hold the clamp on the cord with the right. Do not pull on the cord—just keep it taut and gently press on the fundus downwards and backwards with the left hand, using the empty, hardened uterus as a piston to push out the placenta, which is lying in the lower tract of the birth canal. When the placenta appears at the vulva, let go the cord and receive the placenta on the right hand. Here again, be very slow to pull it out, as, by doing so, part or whole of the membranes may be left behind. Gentle traction with a side to side movement may be helpful in certain cases. Having the after-birth delivered, place it in a large bowl of water and carefully examine the uterine surface, if a bit of any cotyledon is missing; spread out the membranes and see if there is any hole or window anywhere, as happens, if a small succenturiate placenta is left behind in the uterus. Finish with ergot or pituitary, pad and abdominal binder. Watch the mother for at least another half an hour, and before leaving record her pulse rate once again and re-examine the ligature on the baby's cord, and squeeze out the accumulated blood clot from the uterus so as to minimise the chances of after-pains.

Delay in the delivery of the after-birth may be due to following causes:—

- (i) Distended bladder. (ii) Exhausted uterus in cases of inertia. (iii) Flabby and degenerated muscle of uterus in cases of toxæmic accidental hæmorrhage. (iv) Hour-glass contraction. (v) Morbid adhesions of various kinds, including the placenta accreta.

If there is delay and there is no evidence of external or internal postpartum hæmorrhage, no need to worry for getting the placenta out, and one can safely wait for another couple of hours without any danger following. Remember simple passing of a catheter in the bladder will help in the majority of the cases. If there is post-partum hæmorrhage and the patient is in a low general state, active interference must be done. We are not going into details of treatment of the condition; simple procedures only are given:—(a) Pass a catheter. (b) Gently

rub up and massage the uterus. (c) Try Crede's manœuvre. (d) Manual removal of the placenta is to be undertaken eventually. (a) and (b) are self explanatory. Crede's manœuvre is a simple procedure introduced over a century ago, which consists in squeezing the placenta out of the uterus. It should not be lightly undertaken as it causes pain and even shock, specially while doing the first part of it.

Manual removal of the placenta—It has often been done to save time even in the absence of the slightest indication for such a risky and serious operation! It should be considered if there is any of the following indications:—

(i) Uncontrollable hæmorrhage. (ii) Hour-glass contraction. (iii) Adherent placenta except placenta accreta, where it is impossible to remove the placenta without the uterus along with it. (iv) Detached cotyledon or succenturiate placenta. Needless to remark that strict surgically aseptic technique should be observed while doing the operation. Under a general anaesthesia, gently peel out the placenta and the membranes, insinuating the fingers between the membranes and the uterine wall, commencing in the region of the os externum. Finish with a long and warm (110° F) intra-uterine douche with 2% Dettol lotion.

As a treatment for delayed delivery of the placenta, mention must be made of the more recent method of injecting 200-300 c. c. of sterile saline through the cord. It is doubtless worth trying on a suitable case, but in my hands the success by this method had been variable.

In most cases the third stage is quite so simple and easy, if the routine management is observed. Nevertheless grave complications may occur though very rare fortunately, and will puzzle even the most veteran obstetric surgeons. The more important ones are enumerated below:—

- (1) Post-partum hæmorrhage. (2) Hour-glass contraction of the uterus. (3) Acute inversion of the uterus. (4) Obstetric shock. (5) Air embolism. It is not within the scope of this small paper to go into details of each condition mentioned.

One should realise the seriousness of this stage, and be always prepared to combat these obstetrical emergencies, should it be necessary. Once on a while such a situation arises, and nature will exhaust all your resources, and allow you hardly any time to make necessary preparations.

To recapitulate, avoid the following:—

- (i) Unnecessary digging and careless massage of the fundus, before the delivery of the placenta.
- (ii) Manual removal of the placenta without any definite indication.
- (iii) Pulling on the cord.
- (iv) Pulling on the placenta for getting the membranes out.
- (v) Administration of pituitary or ergot before the delivery of the placenta.

Indeed very little is to be done in the average management of the third stage, and one should bear in mind that it is the stage which requires minimum doing with maximum equipment for the emergency that is always associated with it.

CLINICAL NOTES

Nephritis after Small-pox Vaccination

• Dr. L. K. Barman, Medical Officer,
Rangiya Local Board Dispensary

A female child aged about 7 years was vaccinated in a healthy state. Vaccinal conditions developed normally from papule and vesicles to pustules. Within 2 weeks the pustules broke down and formed ulcers which began to spread for want of proper precautions.

As soon as the ulcers came under control, nephritis supervened when she was made to appear before me with œdema on face, upper eyelids, ankle joints and feet.

Clinically she was diagnosed to be a case of acute parenchymatous nephritis and response to treatment was found satisfactory. It is a rare case of nephritis, ever found, after small-pox vaccination, which, I believe, will be interesting to some extent to my fellow brethren in profession, as the skin-lesion here was not so extensive as to totally account for the cause of nephritis.

In conclusion, may I request my professional brethren to enlighten me if nephritis is common due to secondary infection after small-pox vaccination?

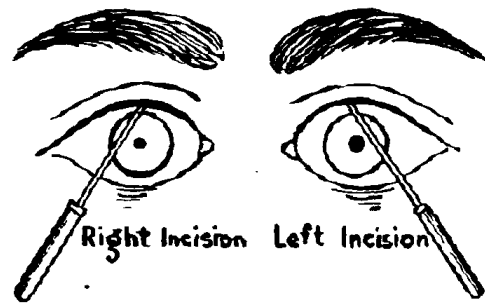
[Secondary Pyogenic infections are known to give rise to acute nephritis. Ed. I. M. J.]

A New Method of Cataract Extraction

● Dr. S. T. Ponnuswamy Pillai, Retired Surgeon, Trivandrum

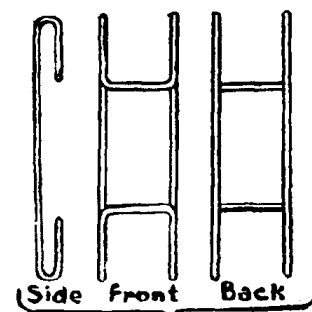
The speculum and its fixation.—A belt, of the width of the forehead, is wrapped round the head (including the forehead) resting on the junction of the scalp and ears, behind one of which (preferably the non-operation side) the buckle is fastened. The belt is steadied with straps.

One strap is attached (stitched on) to the belt just above the middle of the forehead, and tied, at the vertex, to another coming from right behind the head (where it has been attached to the belt). Two straps, attached to the belt, one above each ear, are also tied together at the vertex.



Two other straps, attached to the belt, one in front of each ear, are tied together below the chin. (Buckles may replace the ties.)

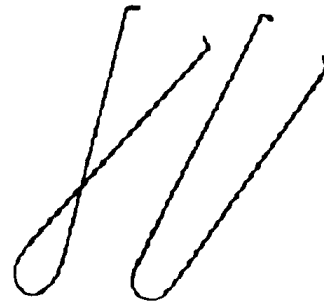
The speculum is a simple one. It is a sort of double wire retractor, but the ends are bent on the same side.



Speculum

The lower bend is passed into the upper fornix of the eye, so as to hold up the upper eye-lid; the other bend is hooked on to the upper margin of the belt, just above the operation eye. The upper bend is made narrower than the lower, so as to hold the belt tight, and is also flattened out to avoid pressure on

the forehead. Any minor devices to steady the speculum, as stitches, ties etc. may be adopted as required in individual cases.



Left: Lense delivery forceps, twisted;
Right: Lense delivery forceps, straight.

This adjustment, while doing the work of holding up the lid, exerts almost no pressure on the eyeball and does not stand in the way of the operator.

After the operation, the speculum is removed and the rest left intact. Dressings may be fastened to the belt and straps with safety pins, not necessitating any movement of the head.

EXTRACTION

I. *Laceration of the Capsule.*—This is done as now with the needle.

II. *Incision.*—The point of the knife is passed through the needle puncture and directed not as now right across the cornea, but towards the upper end of the vertical diameter of the cornea and extended to about 2 m. m. in the sclera where it is pierced through and the point brought out such that the blade of the knife lies along the chord of the upper-outer quadrant of the cornea facing which the operator stands and manipulates the knife, as now, but cuts only one-fourth of the corneal circumference at the upper-outer quadrant (the right quadrant for the right eye and the left for the left) whereas the bridge method cuts half the corneal circumference, though only half of that half is practically serviceable.

Now, the lens can be turned out by gentle pressure upwards and outwards.

To aid the delivery of the lens, a sort of forceps may be used. The tips of a hair pin are pointed and bent inwards. This is passed through the cut, made to seize the lens and brought out. The arms of the pin may be so bent or twisted as to slide one over the other, which will give good grip of the pin.

This method produces only a small wound ($\frac{1}{4}$ the corneal circumference) and so helps, quick healing, reduces complications, avoids pressure and renders the whole operation easy.

A Short Note on Beri-Beri

● Dr. L. K. Baroah

It is now a well-established fact that beri-beri is due to the lack of vitamin B. It has also been shown experimentally that vitamin B is a promoter of the oxidation of carbohydrate food materials and the experiments of Findlay¹ have shown that beri-beri is due to a definite break-down of the carbohydrate metabolism. In this connection it is interesting to note that pancreatic secretion, as a promoter in the oxidation of carbohydrate, is helpful in the treatment of diabetes. Hence some people have advanced the view that insulin should also be helpful in the treatment of beri-beri.

Indians are extremely poor, and they have to depend on cheap carbohydrates for sustenance. And if this normal food lacks vitamin B, either beri-beri or diabetes results.

Funk and Von Schonborn² found that in normal pigeons the glycogen and blood sugar content of their livers are 1.17 per cent and 0.1 per cent respectively, and on an artificial vitamin-free diet the glycogen content drops to 0.04 per cent and the blood sugar rises to 0.15 per cent. Pigeons fed on an excess of sugar showed 4.5 per cent glycogen and 0.15 per cent blood sugar. When vitamin B was added in the last case the values for both glycogen and blood sugar approached normal. These experiments were repeated several times and the results confirmed. Funk again corroborated the results in 1919³. Besides these, Funk has made experiments with substances having a known action on carbohydrate metabolism e.g., adrenaline, pituitrin, thyroid and parathyroid.

It has not yet been confirmed that glycosuria is also present in human beri-beri, just as in Pigeon beri-beri. None the less it is useful to note here the observations of McCarrison⁴ who found that in avian beri-beri suprarenals undergo considerable enlargement, and are characterised by high adrenaline content. In beri-beri carbohydrate metabolism becomes defective, and consequently the animal has to depend on fat and protein, so that adrenaline, which acts as an accelerator of metabolism, is increased. It may be noted here that beri-beri is most common amongst people who have to depend mainly on foods rich in carbohydrate, chiefly rice.

It is well-known that sunlight is a promoter of vitamins. And it is found that those who

lead an out-door life e.g., the peasantry in India or coolies working in gardens and fields, who eat raw things like onions, radishes, cucumber, gram etc., do not suffer from deficiency diseases as the lower middle class and the clerks do.

In conclusion I wish to bring out another interesting point regarding beri-beri and bowel disorder. In epidemic dropsy, disorder of the bowels is a very common complaint: vomiting, dysentery, diarrhoea and anaemia. McCarrison⁵ has observed gastric, intestinal, biliary and pancreatic disorders as a result of a diet deficient in vitamins, especially B and C. Pigeons fed on a diet of polished rice exclusively frequently suffer from diarrhoea, and this can be regarded as a symptom of vitamin deficiency since it can be cured by the administration of alcoholic extracts of egg yolk.

Local Application of Phenol in Sloughing Ulcer *

● Dr. P. C. Rakshit, A. M. O. Hapjan T. E. P. O. Makumjunction, Assam

Patient—Nima (M), 57—Ghutwar.—A boil formed about the middle of the nape of the neck which the patient treated with quack medicine in his house for about 10 days and when he came under our observation it was a large and deep sloughing circular ulcer of about 2 inches diameter, discharging profuse highly offensive, rather, thin pus in which staphylococci were found. It was spreading with a thickened soft edge. After preliminary squeezing out of the pus and removal of the slough as far as possible the ulcer was washed with mercury lotion, swabbed with pure phenol, and mag. sulph-acriflavine compress given.

After 3 days' treatment on this line it was found that the response had been very poor, the ulcer still spreading almost at the same rate. My chief, Dr. Bertram, suggested a pure carbolic acid compress over the ulcer once a day. Accordingly, after painting the edge of the ulcer carefully with vaseline, a thin layer of cotton wool, of the thickness of ordinary hospital lint, just enough to cover the entire area, was soaked in pure Carbolic Acid and put over the ulcer after gently squeezing it between 2 glass sheets to get rid of the excess portion of the acid, and bandaged with a pad of cotton wool over it.

One such application was enough in this particular case to encourage me to put another.

* Read in a meeting of the A. F. & B. B. Medical Society held on 21-1-39

1. *Biochem. J.*, 15, 104, (1921).

2. *J. Physiol.*, 48, 328, (1914).

3. *J. Physiol.*, 53, 247, (1919). 4. *J. Indian Med. Research*, 5, 2755, (1919).

5. *Indian Journal of Med. Research*, VI, 257, 550, (1919).

After 5 such dressings on 5 consecutive days the ulcer became entirely free from slough, purulent discharge and offensive smell and in fact it was showing signs of healing.

The ulcer was now dressed with normal saline with acriflavine (1 in 1000) and it took nearly a couple of months to heal completely.

A case of Anthrax simulating Acute Abdomen*

• Dr. R. K. De, A. M. O., Talup Tea Estate

A female, age 35, was admitted to the hospital on 22-12-'38 at 7 A.M. with intense pain in the abdomen and vomiting of acute onset. The abdomen was distended and tender all over. Pulse rapid and thready, temperature subnormal with rapid breathing and intense thirst. Nothing noteworthy in lungs except few occasional rhonchi. Heart sounds were weak. The case seemed to be in a condition of profound shock from some possible acute abdominal condition.

As a routine procedure blood was taken and just to exclude malaria I looked into the slide when to my surprise I discovered anthrax bacilli in the film. At once solu-salvarsan was given intramuscularly but her condition gradually worsened and she died at 12 A.M., i.e., 5 hours after admission.

The points of interest here are that the case simulated one of acute abdomen and that the anthrax bacilli were accidentally discovered in the blood.

Ordinary text books mention of usually two manifestations of the disease in man, namely, malignant pustule and woolsorter's disease.

How can we explain this case? This cannot be a case of woolsorter's disease nor was there any skin manifestation in her.

Last of all it will not be out of place to mention in this connection about the value of routine examination of blood slides of hospital cases, though it is not always possible for us to do so through pressure of other works.

My thanks are due to Dr. H. L. Slaughter for his kind permission to read the case note and to demonstrate the blood slide.

* Read in a meeting of the A. F. and B. B. Medical Society held on 21-1-39.

MOTHERHOOD

Motherhood shapes the destiny of a nation. Health and manliness of the future man depends upon the health of the mother. Proper care before, during and after pregnancy should always be taken of the mother, as everything which harms the mother before the baby is born can hardly fail to harm the baby in her womb.

During the child-bearing period the nutrition of the foetus solely depends upon the quality and quantity of mother's blood, as the child takes from it all the elements for its proper development.

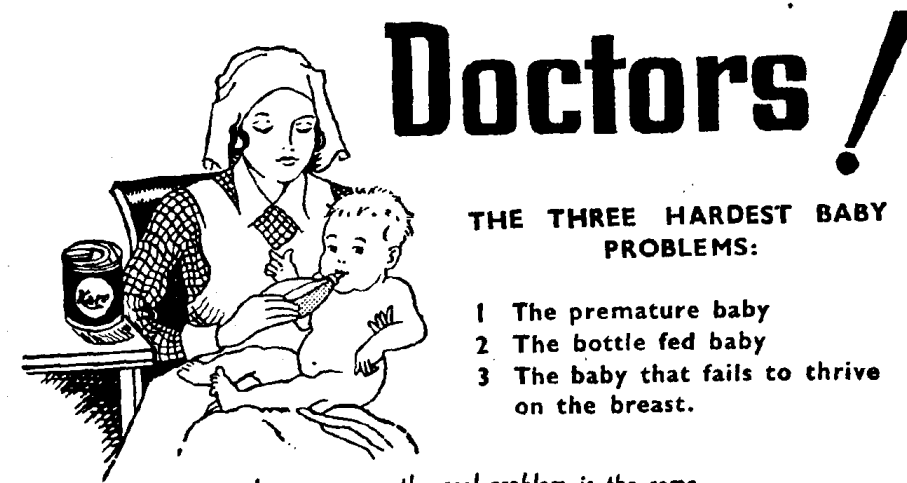
Such things as severe anaemia, due to chronic malaria, ankylostomiasis, bleeding piles etc., of the mother may cause severe and irreparable damage to her unborn infant. In all countries except India the child is born with a robust health, but here in this country—particularly in Bengal—it becomes weaker and weaker as time goes on and ultimately fades away. This is due to nation's short-sightedness in not taking proper care of the mother during pregnancy. None can expect a healthy and robust child from a weak and debilitated mother.

Infant mortality in our country is so high in comparison with that in other civilised countries that for the future welfare of the country and nation immediate attention should be given to the pregnant and nursing mother's health. It is absolutely necessary for the expectant mother to have plenty of fresh air, light, exercise and nourishing but digestible diet and proper hygienic care of all parts of the body.

During pregnancy the child in the womb takes all the ingredients for its growth from the mother's blood. This gradually renders the mother lethargic and anæmic in spite of the well-balanced diet the mother takes during this time. Some forms of medicaments are, therefore, required which can replenish the whole system. **Vino-Malt** is one which can claim as the ideal tonic in such cases owing to the blood forming and nerve-invigorating ingredients in its composition. It is specially beneficial to pregnant and nursing women, the exhausted system being speedily toned up through its wonderful tonic property.

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Public Health Aspects of India's Freedom

India is essentially a country of villages and her population predominantly agricultural. Though nature has given this peninsula the advantage of impregnable frontiers, and her people the benefits of a refined culture and civilisation, yet she has been in a state of political subjection for over nearly 200 years. We know what this means, because we, of this generation, are now actually experiencing the effects of this loss of freedom.

No wonder that in a subject country the vital problems of Public Health and Medical Relief have not received that attention which they would have received had India been free.

That this is no over-statement may be confirmed by the fact that it is during the last couple of years when the Provinces gained a semblance of autonomy that the Provincial Governments are thinking and talking seriously about the best methods of improving Public Health and of offering medical relief to the people. Till now all public health work

and medical relief were centred in big towns where the British Government transacted its business of ruling this country.

It is not that the British Government wanted to neglect these social problems. They have done their best, and the Public Health and Medical departments, with their net-work of Health Officers and hospitals, are a credit to their administration. But, they had one great handicap, and that is they were not of the people and, therefore, moved too slow to meet even their urgent needs.

Now things are changing. The elected Provincial Governments are in power and they are responsible for the welfare of the people. It is gratifying to find that all the Provincial Governments without any exception are agog with the hope of doing something good to the people, something to prevent disease and poverty.

But they cannot work a miracle overnight. The vastness of the country, her large population and her terrible poverty are, at present, the real barriers to progress in Public Health and the extension of medical relief. These will cost a large amount of money which she cannot now afford.

Therefore, progress has inevitably to be slow. What we should take care of at present is the right beginning.

More than actual medical relief, Preventive Medicine is the real and immediate need of our country, because, it is the epidemic diseases which claim the highest toll of mortality at present.

The Hon'ble Dr. Rajan's idea of the rural medical practitioner playing also the part of the village Health Officer is essentially sound, and a real advance in the conception of Rural Medical Relief. Again his idea of a CO-OPERATIVE-HEALTH UNIT which he recently outlined at the 5th Andhra Medical Conference is excellent, and along this way probably lies the solution of the problems of Medical Relief and Public Health in this country.

There may be many alternatives to his scheme, but any scheme which entails a heavy burden of expenditure is simply impossible at present. For, if the people are poor, the Government cannot be rich, and therefore cannot be in a position to conceive or accept schemes which, however good they may be, would entail an expenditure, which they cannot finance and which will necessitate extra-taxation of people already overburdened with taxes.

We have, therefore, no hesitation in blessing this new scheme of the Hon'ble Dr. Rajan which has, in our view, great advantages and offers the promise of a hopeful future. The

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advantages are: it is a voluntary scheme; it is based on business lines; it does not restrict the freedom of the physician; it ensures for him a reasonable remuneration; it gives him an opportunity to serve the people without any avoidable disadvantages to himself; it engenders and fosters the co-operative spirit among the people; it gives an opportunity for the medical man to work for the co-operative ideal.

We draw our readers' attention to his scheme published in the Supplement to this issue, and we hope they would justify our comments in this connection.

Already, the recently passed Public Health Act in this province secures nearly 30% of the municipal income towards the public health expenditure. This statutory provision would go a long way in improving the health of the people in municipal areas. Then, we have nearly 500 subsidised rural practitioners, to whom has been recently allotted, and rightly, the care of village Public Health on an extra remuneration. Besides these, we have at present 1134 hospitals and dispensaries in this Province, managed mostly by the Government. If to these is added the new scheme of CO-OPERATIVE HEALTH UNITS with the ideal of one doctor for a group of 4 or 5 villages with one midwife and an attendant, we can boldly affirm, without fear of contradiction or repudiation from any quarter, that this is a right beginning and that this beginning has been possible because of the newly earned freedom in the provincial sphere and the happy and fortunate choice of an able and strong man from our profession to administer the portfolios of Medicine and Public Health.

A few leaders of our profession are under the impression that a National Health Insurance, as in England and Germany, would solve the problem of medical relief in our country. We consider that this is a wrong view, because a Health Insurance Act in India would never be able to bring within its operation the middle and the agricultural classes. And it is not so in England or Germany or any other country. More emphatically is it impossible in our country for the simple reason that the population of the middle and the agricultural classes by far surpasses in numerical strength that of our present industrial classes. The former constitute 325 millions whilst the latter only 70 millions on a rough and generous calculation.

Apart from the physical and financial impossibility of a Health Insurance for these teeming millions, it is also equally impracticable on account of political reasons. In

England, as in many countries in Europe, and in the U.S.A., the largest slice of the franchise is with the working class. This means that any political party which wants to come into power has to humour this class of the population which has the power of the largest number of votes. Lloyd George introduced the National Health Insurance in England in 1911 to break the back of the Labour party, then rising to unpredictable power under the leadership of Thomas and Ramsay MacDonald, and he, therefore, conceived the idea of mobilising the labour votes by promising benefits of Health Insurance which would secure for the labourers sickness benefits, disablement benefits and maternity benefits. So it was in Germany. For the same reason the Federal Minister of Australia has recently passed a similar Act in Australia. Roosevelt is moving heaven and earth to have a similar Act in the U.S.A., notwithstanding the tempestuous opposition of the American Medical Association.

But, in our country the position is entirely different and will continue to be different, even when we become a more industrialised and self-governing nation. Our agricultural population now holds, and in future also would hold, the greatest part of the franchise. Naturally, we may even say rightly, our ministers would first try to win the favour of this section of our people. That is exactly what is happening today even in Bengal and Punjab, which are not, at present, under Congress rule.

The demand from a section of the medical profession for a National Health Insurance Act has originated from the misconception that it is the best instrument for mass medical relief. Such an Insurance can cover only the industrial population, but it is by no means possible to bring the large agricultural population, scattered in a million villages in our country, within the operation of this act.

For the industrial population we welcome and endorse the need for a suitable form of Health Insurance, but for the general village population we have no alternative to a Socialised system of medical relief as in Russia except the formation of CO-OPERATIVE HEALTH UNITS under the Government auspices, as propounded by the Hon'ble Dr. Rajan. Though we favour Socialised Medicine, we dismiss it as not practical politics at present for both political and financial reasons.

We appeal to the profession to welcome and accept this promising scheme, and we would also appeal to other provincial governments to initiate similar schemes in their respective areas.

And we have no doubt in our mind, as even a partial provincial autonomy has clearly shown that, as our country marches towards the goal of freedom, she will make corresponding progress in all directions, including preventive and curative medicine.

Freedom of India means, not only freedom from political domination but also freedom from poverty and disease.

The Menace of Patent Medicines

We have been receiving almost weekly bulletins from the Publicity Department of the Government of India warning the profession and the public about the inefficacy and uselessness of many of the medicinal preparations, local and foreign, such as the substandard preparations of digitalis, ergot, sera, vaccines and bacteriophages. If to these are added the ever-increasing patent medicines of Indian and foreign origin, speciously introduced to the profession and the public by means of the subtle art of advertisement, our cup of misery becomes full and overflowing. Even pharmaceutical drugs are adulterated. Recently the Minister of Health, Bombay, pointed out that:—

Sample packets of quinine pills and aspirin tablets sold in Bombay were found on analysis to be entirely devoid of the respective drugs. A packet of Seidlitz powder was found to contain sodium bicarbonate in a blue paper packet and oxalic acid (a poison) instead of tartaric acid in another white paper packet.

We do not know where all these will lead to and we do not know also why the Government of India is delaying to enact a suitable legislation against the manufacture and dumping of infertile products in medical markets.*

While we blame the Government of India for this great negligence, we must, at the same time, say honestly that the profession, as a whole, has yielded, without being conscious of it, to the siren voice of spurious advertisements. Some of our readers may protest in offended pride and innocence when we say that the generality of the profession is practising the materia medica of manufacturers, and not wholly the British Pharmacopoeia. Prescription of pharmaceutical drugs has ceased to be a fashion, and the profession seems to have yielded to the demand of the public for proprietary remedies of all sorts. In our zest for popularity we are slowly forsaking the science of medicine. To that extent the profession must plead guilty, and, having pleaded guilty, must sin no more in this direction.

*Since writing this note, we have received information that the Central Legislature will take up this question in its ensuing Simla session. We only hope that no more delay would occur.

Most of the reputable manufacturing firms of the world, such as the Bengal Chemical, the Bengal Immunity, the Alembic, the Indian Health Institute, Burroughs Wellcome, Parke Davis, Bayer, Scherring etc., do not mislead the public by advertising in the lay papers, except their toilet and other simple and harmless preparations. But they print their own materia medica and send free to the profession. This, we think, is an unethical procedure. It is also reprehensible because it undermines the fundamental integrity of the profession by subtle suggestions. When we say this, we are not unaware that the laboratories of some of these firms have been citadels of pure research which has resulted in great discoveries.

There are other types of manufacturers who rely on advertisement alone for the sale of their products. Their number is legion, and they fill up 75% of the columns of lay advertisement. They deceive the public by claims of magic cures, and publish their ads couched in a pseudo-scientific language. With the enormous circulation of the daily newspapers, one can easily conceive to what extent damage can be done. The result is that self-prescription has become the order of the day.

We have taken some pains to analyse the nature of medical advertisements in lay papers, and we give below the result of our analysis:

Cures for asthma

- " " sex-disabilities
- " " leprosy, tuberculosis, venereal diseases and diabetes
- " " hydrocele, appendicitis and hernia without operation
- " " chronic cough and liver enlargements
- Various tonics, calcium and liver preparations etc.
- " " food products

As our readers can easily see, it is exactly for diseases which ought to go under the care of a qualified physician at the earliest possible moment that advertisements are spread out to waylay the credulous public. The danger of this subtle propaganda is too obvious to a medical man to need any special emphasis on our part.

That is why the profession has been asking for a comprehensive Drug Act, and more insistently during recent times since the publication of the classic Chopra Report. It has been suggested that lay advertising of medical products should be suppressed by legislation. We are entirely against this method of eradicating the evil, because it is simply impossible in these days of commercial competition. It would meet the ends of medical science if every medical preparation that is put into the market is assayed and certified as

genuine—so far as its composition goes—by an authorised laboratory. More it is not possible, neither is it desirable. . .

While it is the duty of the Government to protect the public from the dangers of what we may call scientific pick-pocketing of poor and credulous people, we of the medical profession have got a responsibility which is peculiarly our own. We must carry on a propaganda among our patients, friends, and neighbours against the danger of yielding to medical advertisements in lay papers and of consequent self-medication. The *British Medical Journal* and the *Journal of the American Medical Association* always boldly expose the pretensions of spurious medicinal agents. So should our journals expose the fraud in India in no uncertain terms. We realise that the two All-India medical organisations are too ill-equipped to undertake this onerous task, but a beginning should be made as a part of their duty to the public.

The discharge of this duty is as important and imperative as our duty of reminding the Government of its statutory obligation to protect the public and the profession against the menace of spurious preparations going under the cover of proprietary and patent medicines and appliances.

Obiter Dicta of Jehangir J. Cursetji

Dr. Cursetji is a retired Chief Medical Officer of the Oriental Life Office, Bombay, and in that capacity his opinion was sought by the latter as regards the memorandum of the All-India Medical Licentiates' Association which demanded equality of treatment and remuneration between the licentiate and the graduate medical examiners appointed by the Insurance Companies in India, and which also, by the way, protested against some companies refusing to entertain licentiates as medical examiners. Dr. Cursetji is nothing if he is not a prophet who is inspired, much against his "wish to cast ungenerous reflection or hurt anybody's feelings", to give the benefit of his opinion to the insurance world of India in a public manner through the press*. But unlike the real prophets, he writes a strange post-script to his letter which informs the public:

"I am aware that I am raising a hornet's nest by publishing this letter. But I do not wish to waste my time in replying to any correspondence on this subject here or elsewhere for I know it will result in nothing tangible."

This shows that he does not want to be convinced and that what he cares for is only to place his opinion for the benefit of the public.

* *Insurance World*, Feb. 39, pp. 265-267.

We have read his reply to the memorandum very carefully, and the best we can say about it is that he is a willing prisoner to his own ignorance. His post-script shows that he refuses to be liberated from this prison. His portrait of licentiates and their medical education may be right or wrong. In any case, he is entitled to have his own view. We shall not grudge him this pleasure, though in every point we can prove that his opinion is behind times—nearly 50 years behind. His picture is certainly not true today. But what staggers us is his complacent opinion that:

"No acknowledgment need be sent and no notice be taken of the threatening resolutions embodied therein by that Medical Licentiates' Association, an unknown and obscure body, even the existence of which has never been heard of."

That is why we have said he is a prisoner of his own ignorance. Is there any other association in this country which is as old, as strong and as well known as the All-India Medical Licentiates' Association? Truth cannot be denied easily by a single individual.

We are afraid that Dr. Cursetji has completely misinterpreted the memorandum. The claim of the licentiates for equality is not on academical but on legal grounds. The licentiates are statutorily recognised medical practitioners and as such they have got every legal right to be treated on par with medical graduates. Dr. Cursetji maintains that they should not have been included in the Provincial Medical Register at all! But they have been so included by provincial statutes, notwithstanding Balkishans, Cursetjis and Chokseys. So, it is the provincial statute and not Dr. Cursetji's opinion that has to be followed and interpreted. If medical registration has got any legal or ethical meaning it is this: *no registered medical practitioner can be put one against the other in terms of superior or inferior medical knowledge or skill.* It is against the breach of this statutory principle that the memorandum has protested—and protested rightly. It may be that the Government has broken it, or the insurance companies or any other public body. Two wrongs do not make one right. Already, in Madras, the Medical Registration Act has been recently so amended that academical classification has been given up as unfair and inequitable, and that election to the medical council has been thrown open to all the registered practitioners—graduates and licentiates—without any kind of reservation or distinction. This is the best reply to Dr. Cursetji's *obiter dicta* about the licentiates, and we may assure him that even in his province the Licentiates' Association would, at

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CURRENT COMMENTS

Small-pox Epidemics

Madras and Calcutta are in the grip of a severe epidemic of small-pox. It is unfortunate that this preventable disease has not yet been prevented although statistics show clearly an increasing number of the vaccinated. The anti-vaccinationists use this as an argument against compulsory vaccination. This was repeated with vehemence by some honourable members of the Madras Legislature when the Public Health Bill was on the anvil although the Hon'ble Minister of Health gave a quietus to this ill-conceived opposition by citing his own personal experience and of those who are entitled to talk on the subject. There is no doubt that what is now a bush fire would have been a conflagration if there had been no compulsory vaccination. Yet the sickening regularity of epidemic small-pox seems to require a thorough re-investigation, and it is not safe to lull ourselves into a mood of complacency because of the mere existence of a compulsory Vaccination Act. There must be some snags in the known methods of control of this disease, and the methods now adopted are: isolation, disinfection, primary vaccination and re-vaccination. We realise that these cannot be carried to an ideal perfection, particularly under Indian conditions. Yet we feel that there is room enough for improvement. How is isolation possible unless there are first class isolation hospitals in the cities with accommodation enough for those who catch the disease. Calcutta, the second great city of the Empire, with a corporation whose revenue is equivalent to the Province of Assam has no isolation hospital worth the name. Madras has got two which have got a reputation none too pleasant, situated amidst squalid surroundings, and where patients are huddled together like a hay-stack. Since wholesale isolation is impossible, and home-isolation undependable, it is no wonder that the epidemic takes its usual toll notwithstanding compulsory vaccination. We think that isolation is as important as vaccination, and unless both these objects are achieved small-pox will be an unwelcome but a regular visitor. We realise that it is easier to write about than build and equip an isolation hospital. We direct this criticism against ourselves before the minions of authority point to us that ink is cheaper than bricks. But why such a furore of Health Officers' Communiques about

no distant date, scrape up the Bombay Medical Registration Act of 1912 and amend it on the Madras model.

As regards the academical standard of the medical licentiate, Dr. Cursetji is again entitled to his opinion, and technically speaking he may be correct. A M.D. is academically higher than a M.B., but that does not mean that the latter is inferior in legal rights or medical knowledge and skill to the former. The case of the licentiates should, we submit, be viewed in the same manner.

We can of course quote eminent authorities against each one of his arguments, but we refrain from doing so lest we may "waste his time"; and also because we do not expect him to be convinced, nor does he want to be convinced. If he has heard about the *Indian Medical Gazette*, we would humbly refer him to its editorial note, January 1939, p. 34 where in it is written:

"Among the licentiate class of practitioner there are many men who in knowledge and efficiency are far above the average of the graduate practitioner and there are probably some graduates who would compare badly with the average licentiate....."

It is rather surprising that from Bombay only we hear such opinions which would never be tolerated by the profession in other provinces. Our only consolation is that the voice of Cursetjis and Chokseys are not the voice of the profession but of vested interests. Let them have their say, otherwise life would lose all its humour.

We would particularly appeal to the licentiates not to get excited or worried about such opinions. Let them appreciate the deep humour in Dr. Cursetji's letter. It is an old man's view of the present day medical politics. He believes in what he writes though we know that his belief is wrong. Let us act up to his post-script and withhold from him the "hornet's nest." Since we cannot alter his belief without his consent, let us at least leave him to chew the cud of his own fancy.

As for the Insurance Companies, we say that they would be ethically wrong and legally unfair if they make untenable distinctions between two sets of registered medical practitioners. We would suggest to them not to follow the advice of Cursetji in this matter for the reasons already mentioned in this note. Let them consider that the two premier medical organisations, namely the All-India Medical Licentiates' Association and the Indian Medical Association, hold very strong and decided views on this subject. It would neither be reasonable nor easy to flout the opinion of the organised profession, and where things could be settled by fair arbitration let no war be declared.

isolation when they are frankly unprepared to provide the required isolation? The doctor may be punished for not notifying the disease under his charge or within his knowledge but is there no statutory punishment to the Corporation which does not provide the necessary isolation in a decent manner? The cause of the recurrence of small-pox epidemics in the cities of India is undoubtedly due to meagre provisions for isolation. If proper isolation is not possible at present, re-vaccination at least must be made compulsory. People are not likely to oppose it because they are accustomed to compulsory primary vaccination. This may appreciably reduce the incidence and mortality from epidemic small-pox—and perhaps this is the least which the authorities can do at present.

Preparation of Small-pox Vaccine

In our country we are using glycerinated lymph vaccine prepared from calf and issued by Government laboratories after the usual testing of its potency and sterility. It is issued in capillary glass tubes. The unwelcome fact that a certain proportion of even the successfully vaccinated children are attacked by small-pox has to be faced with a view to further investigation. The low standard of immunity and resistance of such children is often offered as an explanation, and while we do not doubt such a possibility we are however inclined to say that it cannot be a complete explanation. There is also the possibility of the *seed-virus* having lost its potency. This requires searching re-examination. The potency may further be lost by the action of the actinic rays of the sun on the vaccine which is usually contained in a capillary glass tube. Perhaps a cheap metal container may protect the vaccine from being acted upon in this manner. Then as to the reaction arising from primary vaccination, it is indeed too severe, and the fear of such a severe reaction has been one of the real causes against people willingly yielding to vaccination. The reaction is partly due to vaccine lymph itself, and partly, certainly, to accidental contamination of the lymph. The way in which lymph is prepared from the skin of the inoculated calf leaves room for the possibility of accidental contamination, particularly with staphylococci. The factors which we have just hinted would make a *prima facie* case that all is not well with the present method of preparation, testing and supply of small-pox vaccine. It has been suggested by some that a vaccine prepared from calf is bound to have these limitations, and that a vaccine from

chick-embryo is free from them, at any rate much less than in the usual methods. The suggestions are that the chick-embryo vaccine gives less reaction, is less exposed to accidental contamination, and can be manufactured on a commercial scale. We hope that the Government laboratories would explore this possibility and find out whether there is not sufficient room to improve on the present methods of preparation of lymph vaccine. If one can produce a small-pox vaccine which will not scare away people from the fear of terrible reaction, half the conquest of epidemic small-pox would be won easily.

Sero-Diagnosis of Typhoid

Bhatnagar of the Deccan District Laboratory, writing in the *British Medical Journal*, is of the opinion that Vi antibody is produced in every case of typhoid fever, inoculated or not, and that Vi agglutination is a more reliable method of diagnosing typhoid fever in the inoculated than the time honoured O and H agglutination. He also suggests the employment of Vi agglutination in the routine carrier examination and in tracing the source of typhoid infection. The *B. M. J.* editorially comments:

"It appears, therefore, that the presence of Vi agglutination is the one and only certain serological sign of the presence of living typhoid bacilli in the body, whether during the disease or in the carrier; nothing can counterfeit it, neither a previous attack, vaccination, the anamnestic reaction nor any other cause of positive reaction without active infection, such as may be obtained with other types of agglutination test."

Thus, it looks as if Vi agglutination as a routine diagnostic method is a definite improvement in that it offers a certain diagnosis in those who have been previously inoculated with T. A. B. vaccine, and in the typhoid carriers. Fallacies in these matters were usual with the time-honoured Widal Test. This is no doubt a great gain to our present diagnostic method in typhoid, but it seems to be off-set by the alarming news that typhoid bacilli, like the pneumococci, are of several types—said to be seven at present. And though Bhatnagar assures us that Vi agglutinin is common to all these types, time alone would prove the truth of his optimism.

Breathing of The New Born Child

We are not accustomed to the idea that the *fœtus in utero* breathes, and it would be strange if we had believed that the *fœtus*,

¹ Dec. 10, 1938, P. 1195.

surrounded all round by amniotic fluid could breathe at all. We have been under the impression that the welcome stranger to the world begins to breathe because of the new environment, both physical and chemical. The difference between uterine and atmospheric temperature was supposed to be the physical stimulus to the respiratory mechanism of the new-born. To which were added such chemical theories as insufficient oxygen, excess of carbon-di-oxide and probably also increased blood pressure in the brain. Sydnor and Rosenfield² smash these theories and establish the existence of regular respiratory movements of the *fœtus in utero* long before term. Their experiments are too technical and elaborate for a review within the space at our command. But there is no doubt that their conclusions are far reaching. They establish that *fœtal* respiration is not initiated at birth but is only a continuation of intra-uterine respiration. They rebut the idea of a state of *fœtal* apnoea, and maintain that failure of respiration at birth is not the failure of some new mechanism to begin functioning at birth but the suppression of a previous activity. Regularity of *fœtal* respiration, they say, depend on the oxygen and CO_2 level of the *fœtal* blood in optimum proportion. Any disturbance of this optimum would result in relative states of apnoea, and sometime show itself in the extreme forms of asphyxia which have been a bug-bear of even skilled obstetrician.

The significance of this sensational but new conception of the respiratory activity of the *fœtus* lies in the orientation it may probably give to the problem of the asphyxia of the new born. Slapping and swinging the infant to breathe, always unpleasant, will be considered as barbaric in the light of this revelation. Probably it is too early to give up the old methods of resuscitation, such as removal of fluid and mucus from the air passages of the infant. But heroic and unsightly method of artificial respiration seems, at any rate, worthy of condemnation. Would insufflation of oxygen and carbon-dioxide under controlled pressure solve the problem? As in every problem of medicine so in this, prevention of asphyxia neonatorum is equally important. And in this connection indiscriminate and injudicious use of narcotics just before delivery either to produce what is called twilight-sleep or to help instrumental delivery deserves strong condemnation, be-

² American Journal of Physiology, May 1937.

cause its effect on the unborn *fœtus* seems to be one of the potent causes of asphyxia of the new-born.

U. P. Medical Reorganisation Committee

Last year, we congratulated, in these columns, the Hon'ble Minister of Health, U.P., for having appointed a committee to consider the question of reforming the standards of education at the Agra Medical School. But when we did so we never imagined that she would be so unmindful as not to include a representative of the U. P. Medical Licentiates' Association in that committee. This omission is particularly glaring in view of the fact that the alumni of this School will be affected by the decisions of this committee, be they favourable or unfavourable, and it is equally unjust that in such a decision regarding the education of the licentiates, they should be excluded from being a party to it. We understand that the Provincial Secretary of the U. P. Licentiates' Association had already appealed to the Minister to give it a due representation in the committee. This question is somewhat intriguing, because we are informed that Dr. Jawahar Lal who is a member of this committee happens to be a member of the U.P. Legislature as well as the President of the U.P. Branch of the All-India Medical Licentiates' Association. But in so far as he is not appointed to serve in this committee as a duly elected representative of the Association, the latter is genuinely and rightly apprehensive that he may not put forth the views of the Association in the manner in which its accredited representative would be compelled to do. We do not at all suggest that Dr. Jawahar Lal would act in any way contrary to the wishes of the Association since he happens to be its President, but this does not take away the edge of our criticism or the spirit behind the appeal of the Provincial Secretary that the Hon'ble Minister has wrongly, if unwittingly, ignored the rightful claims of the forty years' old medical association of the U.P. Medical Licentiates for a representation in a committee which will tackle the question of their future medical education. We earnestly hope that the Minister will not minimise the importance of such a representation, and we believe it is not yet too late to rectify this omission. After all, as one of the high court judges of Madras has recently observed, *not only should justice be done but it should appear to be done*. Bare justice is a poor substitute for satisfactory justice.

POST-GRADUATE ARTICLE

Cardiology

• Dr. Jai Gopal, Dipalpur
(12)

CARDIAC FAILURE

When the ventricle is incapable of overcoming the resistance in the arteries, the heart fails. From this statement it would appear that the cardiac failure is a simple phenomenon and hence does not require any detailed treatment. Far from it, it is a complex problem which has baffled both clinicians as well as pathologists in arriving at a definite diagnosis with regard to certain types of failures. Some cases during their life time never show any signs of circulatory disability and are to all intents and purposes in robust health, and even after death no morbid state is discernible to account for the sudden decompensation resulting in their death. Apart from this type of cases the heart failure is a complicated phenomenon depending upon various and widely differing causes, and therefore it requires a detailed study in order to have a proper grasp of the subject.

Before entering into the description of the various causes responsible for failure of heart, it is essential to state that the heart may fail suddenly in a person in robust health and without showing symptoms of cardiac weakness, for instance, in the first stage of chloroform inhalation. Sometimes the shock of concentrated vapour of chloroform is sufficient to cause death. A condition of ventricular fibrillation occurring during the course of an anaesthesia would kill a patient within a few minutes. Similarly severe vagal stimulation is attended with a sudden failure. A boy who in the act of jumping into the canal from the bridge over it (a feat which he used to accomplish with ease), fell flat on the surface of the water. He, owing to a severe impact of the water against his abdomen, died instantaneously. Here severe vagal stimulation brought about sudden stoppage of his heart.

Vasomotor paresis particularly when associated with fright or severe emotional excitement, is responsible for death sometimes. A motor driver aged about 25 years while driving his car at a fast speed at night lost the road and in the darkness, suddenly saw a wall in front of him at a short distance. He succeeded in diverting his course away from the wall and also stopped the engine, but he was found dead on examination after the car had stopped.

Sudden death occurred in an old person, a business magnate, a few years back at about

3 A.M. This man was in financial difficulty due to failure of his business and a couple of days before his demise, he was extremely busy in winding up his concern and was thus rather over-worked but he did all this work cheerfully without suffering or even complaining of fatigue, much less exhaustion. He went to sleep at about 10 P.M. as usual and after having a good meal. At about 3 A.M. his grandson aged about four years, who used to sleep in the same room got up and feeling thirsty cried for water. The servant after serving a drink to the child found the old man dead in the room. In a case like this the explanation for death is to be found in the fact that the man was aged about 68 years and therefore his myocardial capacity must have been below par.

The worry and the excitement of the previous two days combined with extra physical exertion must have depleted his cardiac reserve and therefore the strength of his heart beat was reduced. We know that about six hours after the last meal, the metabolic activity is at its lowest level, and the vagal control is preponderant. The results are: the circulation is slowed down appreciably and there is distinct fall in the blood pressure. The exhausted myocardium is now no longer capable of maintaining an efficient circulation, with the result that a thrombus is formed in the coronary artery and possibly also in the cerebral artery.

When thrombus is formed in that branch of the coronary artery that supplies the cells of the conducting system of the heart, a condition of heart block is produced resulting in its asystole and the death may be instantaneous after loss of consciousness.

A professor about 45 years old dressed himself up and was ready to leave home to take his class in the college, when he felt slight oppression in the chest and shortness of breath and laid himself down in the easy chair. He expired shortly after this, before the medical aid could reach him. He never suffered from any anginal attacks before and was enjoying good health. The cause probably in this case was coronary occlusion, affecting the branch supplying the genetic system. Thus sudden incompetence is known to occur in persons free from disease and apparently in robust health, and in the full enjoyment of activity.

Apart from this type, sudden heart failure occurs in persons showing ill-health; but at the time of death they are neither bed-ridden nor show any signs of impending crisis. The persons suffering from valvular derangements, arteriosclerosis, coronary spasm, syphilitic aortic insufficiency are prone to sudden

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OF
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COMPOSITION	INDICATIONS	DAILY DOSES:	
CALCIUM	PREGNANCY	Tablets	6-8
PHOSPHORUS	LACTATION	Granules	2-3 teaspoons
MAGNESIUM	RICKETS	Powder	2-3 "
FLUORIN	LYMPHATISM	Dragees	2-4
ASSOCIATED WITH	MUSCULAR TWITCHINGS	Ampoules	1-2
MINERAL & ORGANIC	BONE & GLAND T.B.		
CATALYTIC AGENTS	PULMONARY T.B.		

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heart failure. Another fact, which is not well-known and is hardly stressed in text books, is that sufferers from serious mitral stenosis usually die suddenly. Sometimes sudden blindness in one eye due to a retinal embolism or an embolic hemiplegia is seen in these patients. Similarly in impoverished blood states, and in cases of pernicious anæmia, the heart fails suddenly. In these types of cases, the explanation for death is forthcoming with fair precision as the patients were formerly in ill-health and perhaps had been under medical care too.

The third type of failure is the chronic failure, which takes long time, generally years and occasionally months, in its development and pursues a long and tiresome course before the final scene is enacted. This slow type of failure may be the result of weak myocardium struggling against a normal resistance in the arteries and is therefore barely capable of maintaining the circulation under ordinary conditions not entailing any heavy demand upon the heart for increased circulation. The myocardium in these cases may be poor in strength due to anæmia (probably pernicious anæmia) or its strength has been exhausted due to tachycardia, whether simple or paroxysmal, hyperthyroidism or due to myocardial infections or degeneration, and sometimes its strength is undermined due to acute toxic influence such as in recovery after pneumonia and influenza.

A healthy myocardium if subjected to an excessive strain, such as in indulgence in excessive exercise as in professional athletes or as in the case of soldiers heart; or when the left ventricle is struggling against continued high blood pressure and a strong resistance is offered to the outflow of blood as in essential hypertension, it ultimately begins to show signs of failure after having gone through certain specific changes in its structure, such as hypertrophy and dilatation.

Mitral stenosis is commonly seen in rheumatic women and it places a heavy load on the myocardium. The occurrence of pregnancy in a normal woman with a healthy heart causes a strain due to excessive demand for circulation in order to cope with increased rate of metabolism, besides the embarrassment caused by the increased intra-abdominal pressure in the later months of pregnancy. Finally the myocardium has to face the excessive strain at the time of labour. It is seen that women with even a healthy heart show sometimes temporary circulatory embarrassment; and certain amount of decompensation also occurs in some cases to meet the physiological

requirements. During pregnancy when the heart is grossly deranged due to mitral stenosis and a good deal of cardiac reserve is already spent up, symptoms showing loss of compensation develop. Now if another pregnancy occurs it still further depletes the myocardial potential with the result that the heart is barely capable of sustaining the circulation under condition of limited activity. If no efforts are made to limit the activity and to avoid the worries and anxieties connected with the household duties and in the care of young children, auricular fibrillation soon sets in. To save the heart from further onslaught any further pregnancy is risky and its occurrence involves positive danger to life. A young healthy female belonging to a well-to-do family was in the best of health at the time of her marriage though she was suffering from rheumatic mitral stenosis. The first pregnancy was uneventful. The second one occurred after two years and during the last two months of her period of gestation she suffered from oedema and breathlessness on exertion and the confinement was protracted. She was advised and warned against the dangers of the occurrence of any more pregnancy. As ill-luck would have it, she got in the family way again after about two years. The heart during the terminal period of her pregnancy was barely capable of maintaining the circulation under restful conditions; but during labour it became grossly embarrassed leaving the patient a precarious existence, which did not last longer than a couple of months, when she expired.

Sometimes we come across cases who seek advice for breathlessness on slight exertion out of proportion to the degree of activity involved. Thus there is definite limitation of activity. They feel oppression in the chest and dyspnoea on exertion. The heart is examined and even on careful examination it does not reveal any organic lesion or morbid condition to account for their symptoms. These symptoms are generally seen in nervous and apprehensive type of people, who hold prominent position in public life. Sometimes these people die suddenly of heart failure. It appears as if Providence favours them by granting them a peaceful end, and thus eliminating the pain and misery—the usual accompaniment of death; and at the same time does not wish them to become a burden to those around them. Such an explanation does not appeal to a scientific mind, unless a theory to explain for the phenomenon is expounded. This is to be found in the fact that in the case of all persons prominent in the public eye, be they men of high literary attainments, great

thinkers, social or religious reformers, politicians, statesmen, and great administrators, engaged in the humanitarian task of inaugurating various schemes for the progress of the benefit of the people, inventors and research workers, there is one underlying principle governing their lives: that they have risen in most cases by dint of laborious application aided by their penetrative insight as well as by keen concentration in their sphere of activity. To be successful and to attain perfection in any line, one has to put in a great struggle. This is the general rule, barring a few exceptions where some people are born great and sometimes leadership is thrust upon some although instances of this kind are rare and far between. If we read the life of any great man or woman, it would generally be observed that seldom a personality has risen to the top, merely by chance or luck or by favour. One has to work his or her way through thick and thin, to cross many an obstacle and to face many a trouble. Besides these, there are discouragements and disappointments, attended usually as they are with their necessary evils in the form of worry and anxieties. These have their depressing influence upon the nervous system and indirectly upon the muscular tone, besides other ill effects too numerous to be detailed here. The physical and mental strain of effort, of worry and anxiety, make the nervous system hypersensitive and therefore it becomes exceedingly excitable. Hence its response is exaggerated even to ordinary stimuli. The result is that a oversensitive nervous system when subjected to constant stimuli, ultimately breaks down. This condition is commonly known as *Neuro Muscular Asthenia*. In this condition the complex nervous mechanism of the heart and the myocardium suffers and is in lowered state of vital activity and not capable of meeting the excessive demands made upon it for increased circulation in time of stress and strain. These people are quickly tired and in fact have a tired feeling throughout the day and even in the morning after complete night's rest. Ultimately there may be bed-ridden invalidism due to commencing signs of failure.

Such is the brief story of the various types of cardiac failure. The heart in coming to a standstill may show signs of failure in the whole organ, every part of it being affected, or the process of decompensation may begin in the right heart or the left or there may be a failure of the peripheral circulation.

The description of the failing heart will therefore be considered under these four heads, in detail.

TUBERCULOSIS NOTES

[This new column will run for a few months and deal with news and views on the Tuberculosis Campaign. Ed., I. M. J.]

Short Notes on Anti-Tuberculosis Campaign

●Dr. V. Krishna Rao, L. M. S., Madras

Primary infection of tuberculosis (pulmonary congestion) can be cured by home or domiciliary treatment, which prevents further exposure to infection and which equally promotes optimum nutrition and health. This state is not as infectious as the chronic pulmonary tuberculosis of the re-infection or adult type, as a menace to the health of the public. Therefore, the prevention of tuberculosis should be focussed on segregation and treatment, where needed, namely, on the sources which perpetuate the disease in successive generations of man.

2. The policy of all health activities in the world has been summed up in the apt remark—*"To cure is the voice of the past, to prevent the divine whisper of to-day"*.

3. Her Excellency the Lady Linlithgow has explained her plans to fight out tuberculosis which is a "guerilla-warfare". To start with, a tuberculosis clinic for every District Head-quarter. Later on, hospital wards, and sanatoria, and 'after-care' treatment of the infected. Through her magnanimous appeal, nearly 70 lakhs of rupees have been collected. Her Excellency has also made it plain that nearly 75% of the money collected would be spent on preventive measures.

It is evident, the expenditure is primarily meant for those infected already, that is, curative, and not entirely preventive, in the sense this word is generally understood. A cured tuberculous patient (?) is, after-all, a doubtful asset to the community. A colony of "after-cured tuberculosis" patients would be a colony of "unfits", and also the danger spots of public health.

4. The general policy of Anti-Tuberculosis campaign in England and America is:

1. A drive for more hospital beds.
2. Application of the tuberculin test to every school-child.
3. Co-operation with physicians and arranging for tuberculin tests and X-rays, free for patients who cannot afford them.
4. Expansion of services.
 - i. Nursing and Health visitors' services.
 - ii. Medical examination of all persons known to be in contact with cases of tuberculosis and,
 - iii. Vocational rehabilitation.
5. Continuation of the efforts to bring better housing.
6. Co-ordination of all health and social services so that any person may receive all modern services needed.
7. Carrying on a constant educational campaign.

5. The ten slogans of early diagnosis campaign (E.D.C. slogans), are appended. (Appendix I & II).

6. The Anti-Tuberculosis laws in America are—
i. The State assumes about half of the expenses for the care of tuberculosis patients.

ii. Law amply provides for the continuous isolation of a person until he is no longer in a communicable state.

iii. Case to be reported to Health department within 24 hours of the establishment of the diagnosis.

7. Prevention of tuberculosis among children, the future citizens in the schools, may be gained by the adoption of an active school-health programme, as outlined in my pamphlet, "Teachers & Health Education." The health education is to be conducted:

i. Through films, press, radio talks to children and their parents, and acquaint them with the Anti-Tuberculosis programme;

iii. Tuberculin skin test on every child;

iii. Requesting permission of parents to test their children, and also, with a simple request, that it would help the community still further if each child could bring any money;

It must be emphasised that the test will be done free whether money is brought or not. In India, the tuberculin test should be done free, out of the Anti-Tuberculosis Fund;

iv. State provides tuberculin, pays for the services and expenses of the doctor; and,

v. Testing of children done entirely by doctors.

8. This preliminary survey of tuberculosis among school-children by tuberculin test is sure to produce a greater return for the money expended than almost anything else that can be done.

In America, Purified Protein Derivative (P.P.D.) test is urged as a standard by the National Tuberculosis Association.

9. The League of Nations statement—"that every tuberculosis specialist is convinced that the appearance of tuberculosis before the 20th year, is due to two causes: overwork and malnutrition"—has been questioned by the American National Association of Tuberculosis who opine: "the only way, one may be 'threatened with Tuberculosis' is to live in close proximity to an open case of the disease". It may be pointed out that tuberculosis is more a disease of the well-to-do class than of the poor.

10. The scheme of medical examination, adumbrated by me in my pamphlet, has taken note of all these facts. It is purely a preventive health measure. It is the "cheap ounce of prevention to spare the adoption of the costly pound of cure". According to the King-Emperor's Fund, every District Head-quarter would have one tuberculosis clinic, fully equipped. Whereas, according to my scheme each District would have 10 doctors, with a clinic attached to each doctor, serving the needs of rural population of 6,000 children. A comparison of my scheme with the Anti-Tuberculosis Fund campaign would indicate that the former steals a march over the latter.

11. Nutrition of T. B. patients: Goats are tubercular-proof. It is richer than cow's or goat's milk. Therefore, the consumption of goat's milk.

* Final Report of the Mixed Committee of the League of Nations, on Nutrition 1935.

† Appendix III

should be specially encouraged for the T. B. patients. This is economical, useful, and encourages sheep-breeding. My research work into dietetic surveys of the College hostels show that food-habits are wrong, which are responsible for much of the ill-health. Injudicious use rather than insufficiency of food is the defect in the Indian dietary.

12. Her Excellency Lady Linlithgow has been pleased to express that "a beginning has to be made somewhere to control tuberculosis. By constantly attending to the health of the child of to-day, the prop of the country to-morrow, as suggested in my scheme of medical inspection, functioning as an auxiliary body in the Anti-Tuberculosis campaign, I venture to submit that Her Excellency would be laying the foundation-stone of a healthy nation, from now onwards. "If it were done, 'twere well, it were done quickly".

APPENDIX I

Early Diagnosis Campaign (E D C) slogans.

1. You may have tuberculosis—let your Doctor decide.
2. Early diagnosis—early recovery.
3. Protect them from tuberculosis.
4. Tuberculosis is the foe of youth.
5. Tuberculosis causes tuberculosis—Every case comes from another.
6. From whom did he get it?—To whom did he give it?
7. Tuberculosis robs you—Public Health protects you.
8. Fight Tuberculosis with modern weapons.
9. Uncover Tuberculosis by modern methods.
10. Tuberculosis undiscovered endangers you.

APPENDIX II

Posters

1. Nobody is safe from tuberculosis.
2. Tuberculosis may happen to you.
3. Tuberculosis threatens every body.
4. Tuberculosis is no respecter of persons.
5. Tuberculosis does not care who you are.

N. B.—The English slogan adopted in Papworth village near Oxford—"self-help in health—use your Health services" in the six months' campaign is worthy of notice and adoption in India."

APPENDIX III

Medical relief comparison. (Madras)

Total no. of hospitals	Average area served by each hospital.	Average population served by each hospital.
Present state: *1184	126	41, 217.
Anti-Tuberculosis campaign 26	1 District	...
(a) Dr. Krishna		
Row's scheme—506	247'8 sq. miles	6,000 children alone.

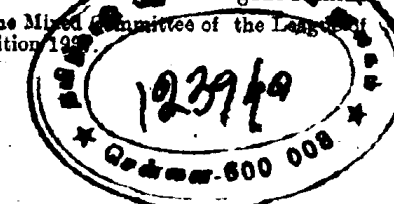
* Indian Information Series, 15th November 1938.

(a) Self-supporting scheme of medical inspection.

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[A note personally submitted to his Excellency the Governor of Madras by the author for the consideration of the authorities of the K. G. Anti-Tuberculosis Fund.]



Social Service and Tuberculosis*

To a great extent Tuberculosis Social Service in India is an unblazed trail, and the committee of each clinic will have to embark upon its own explorations of discovery, guided by the work that has been and is still being done by pioneers.

There is, however, great sympathy for tuberculosis sufferers in all parts of India, at least in the many families who have had personal experience of tuberculosis among their own relatives and from among these sympathisers there will naturally be those who will be ready to help in voluntary service.

To enlist these people in a Care Committee should be one of the earliest thoughts of those responsible for the work of a clinic. This Committee should include the tuberculosis doctor, and, possibly, one or more of the tuberculosis health workers connected with the clinic, but the Secretary should not be one of the technical staff. It is essential that the Committee should include not only those who can give their time and energy in personal service to tuberculosis patients and their families, but also those who can influence the public, create confidence and obtain support, by their own keenness, interest and sympathy. The whole of the work of this Committee would be a contribution to social service.

Social service as applied to the tuberculosis patient is so varied that it is not easy to define but it can be summed up as "a study of the social condition of the patient with a view to bringing the knowledge gained therefrom to his help, both to hasten and safeguard his recovery and to prevent the spread of the disease to others."

The work of the Care Committee will be concerned with two groups of patients, although the line between these two groups is not clear cut.

The first group will include many patients too poor to pay for their own private doctor or for their treatment and who, therefore, will have to be helped from the clinic. The clinic doctor and nurse will have to visit these patients in their own homes. Assistance from members of the Care Committee will be invaluable to the doctor and nurse in caring for the social needs of these patients, without which care much of the medical help would be wasted.

NO COMPETITION WITH DOCTORS

The second group will include those who can pay for medical aid or even for their own doctor, and it is important to enlist the aid of the private doctor in such cases. The clinic is not meant to compete with private doctors but to help them in every way possible, by giving free, expert advice which can best be provided if the private doctor keeps the clinic informed of the progress of the patients treated by him in their own homes. With these patients the work of the Care Com-

mittee is different; it should promote the co-operation of the local doctors with the clinic, with a view to the control and prevention of tuberculosis in the whole area. This co-operation is a matter of supreme importance, if the tuberculosis scheme is to be successful.

The Care Committee can also provide for many of these patients various forms of help of which they would be glad to avail themselves, and which might be difficult to obtain otherwise, in spite of their ability to pay for their doctor and treatment. All the work of the Care Committee for this class of patients must be done with tact and with the co-operation of the private doctors.

For some patients, who are too poor to pay for their own doctor, the Care Committee may, under certain circumstances such as distance from the clinic, arrange for treatment in their homes by private doctors, paying such doctors a small fee for their services.

The Care Committee can also strive to bring into contact with the clinic or private doctors, any patients who have not yet come under medical advice, because such contact is necessary if tuberculosis is to be stamped out.

To carry out its work, the Care Committee must have sufficient financial support. But money for social service should never be provided from the general funds of the clinic intended for the staff and medical work, and an important function of the Care Committee will be to raise subscriptions from the public for its own work. Such support will readily be given if there is evidence of useful work by the Committee, as part of the Clinic's activities in fighting the disease and in making it safer to live in its locality. The Care Committee will maintain its own fund with its own Honorary Treasurer, who should not be one of the clinic's technical staff. While it is impossible to define all the uses to which the Committee's funds may legitimately be put, the following have been suggested:—

(i) Relief to poor patients, after the Committee has, by personal investigation, found it to be necessary.

(ii) Payment for transport of patients to the clinic, hospital or sanatorium.

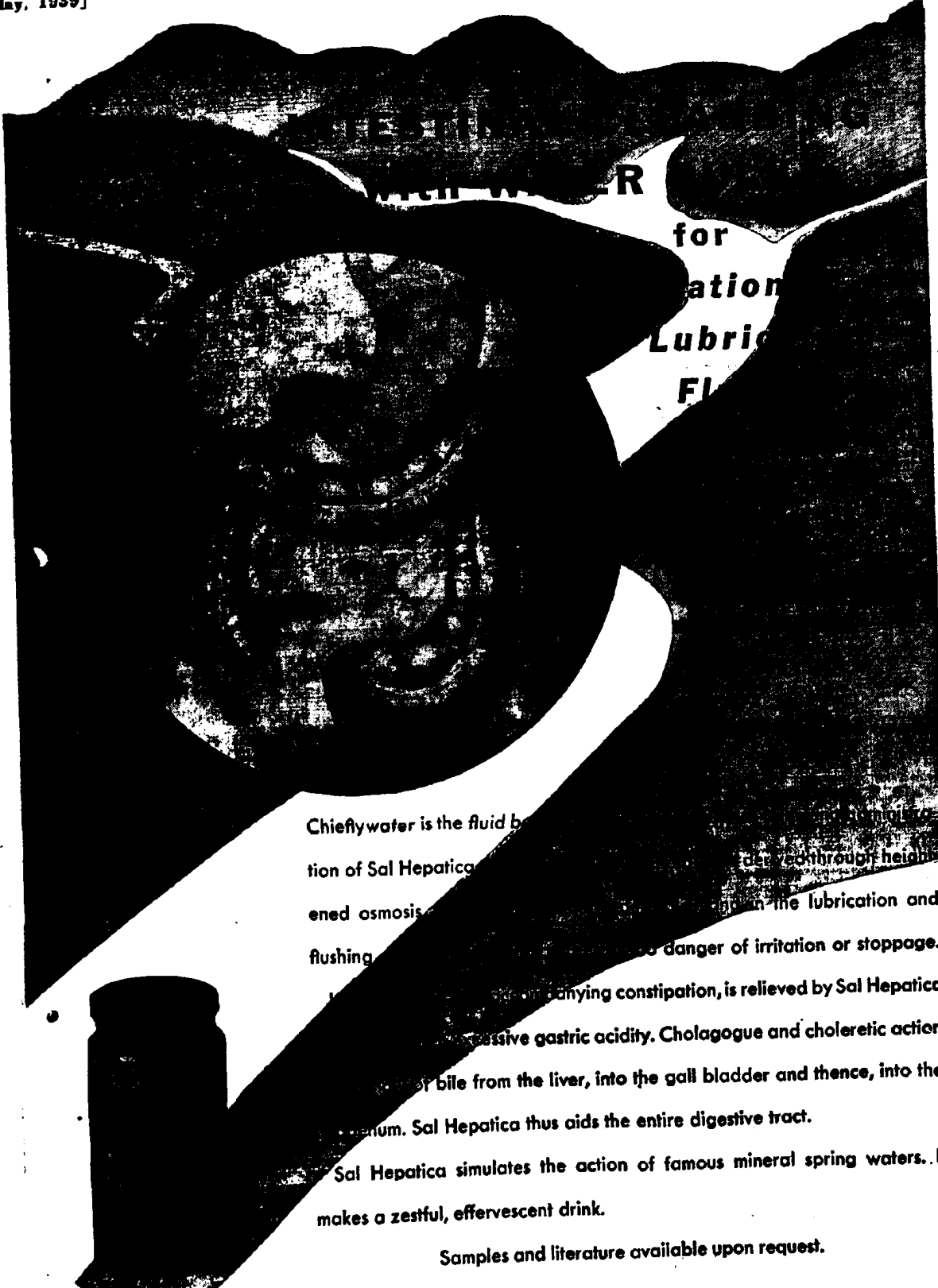
(iii) Provision, in special cases, of medical necessities which cannot, because of their cost, be provided by the clinic or the patient.

(iv) Payment of X-ray charges for poor patients when the clinic has not its own X-ray, but can get such work done by a local hospital on payment.

(v) Provision of extra nourishment on the recommendation of the clinic doctor.

(vi) Provision of another place for a patient for whom treatment is impracticable in his own home due to unhygienic or overcrowded conditions; and for whom institutional treatment is impossible to obtain.

(vii) Provision of another place of treatment as a preventive measure, for a patient who is a



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* Extracts from a pamphlet issued by the King George Anti-Tuberculosis Fund.

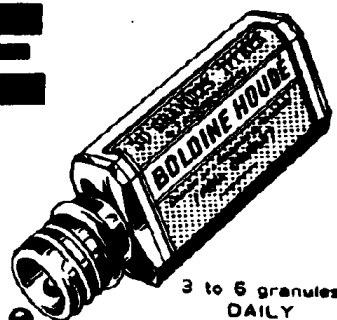
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BEWARE OF



IMITATIONS

dangerous source of infection if he is left in his home.

(viii) Provision of aid for families whose natural supporter is sick, whether in the home or in hospital or sanatorium.

(ix) Arranging for the care and, if necessary, boarding of children, if the mother is sick.

In addition to forms of service requiring money, there are many forms of service which the members of the Committee may undertake, without expense, such as personal visiting of the sick, providing literature for those who can read, and numerous small personal services.

Mention has so far been made of social service of Care Committees to patients while actually suffering from the disease, but "After-care" for those who have been under treatment and have been considered fit to return to a more or less normal life, is another and not less important of the Care Committee's functions.

The Committee should make it their concern to help ex-patients, especially during the first dangerous years after their illness, when there is in many cases risk of a set-back which would undo all the benefit of their treatment. The after-care of such patients would include the finding of suitable employment, according to medical advice. The employment may be their old occupation, either whole or part-time, or a new one more suitable to the ex-patients' health and strength. In many cases it will mean enlisting the sympathy of the employer, and if the ex-patient cannot work whole-time, securing from the employer part-time or light work, and so make this his contribution of social service to the tuberculosis scheme.

The Committee may be able to start some ex-patients in a new way of making their living independently, and if necessary provide training such as cottage industries, or bee-keeping.

These are some of the ways in which the Care Committee can help in the fight against tuberculosis, either by their own efforts or by the aid of collected funds. With experience, their scope and usefulness will undoubtedly grow.

It must be emphasized that the Care Committees should not work as isolated branches of the tuberculosis scheme, but always in close co-operation with the clinic and private practitioners co-operating with the clinic. Only then will the social service they render play the fullest part in the combating of tuberculosis in their midst and so be an effective help in the whole campaign in India.

The Tuberculosis Association

The Tuberculosis Association of India, at its inaugural general meeting held on March 20, elected representatives from Provincial and State

bodies connected with the Association to the Central Committee.

Members were also co-opted as provided for in the rules, so as to make the Central Committee widely representative of the various interests in the country.

The first meeting of the full representative Central Committee was held at the Viceroy's House under the chairmanship of Her Excellency the Marchioness of Linlithgow, who is the President of the Association.

The Committee elected Lala Shri Ram as Vice-Chairman, Mr. Badenoch as Honorary Treasurer and Mr. Mitra as one of the Trustees.

A Finance Sub-Committee and an Executive Sub-Committee were appointed to deal with financial and administrative work respectively.

The tentative budget for 1939 was passed and rules and regulations and the policy of the Association were unanimously approved.

The Committee unanimously appointed Dr. C. Frimodt-Moller, C. B. E., as Medical Commissioner for two years. Dr. Frimodt-Moller has been connected with the Madanapalle Sanatorium for a number of years and is an expert of international fame in the field of tuberculosis.

Her Excellency expressed gratification at the decision of the Central Committee and said that she herself had great admiration for Dr. Frimodt-Moller's work, and that to her knowledge, his work was appreciated by everyone in this country, with whom she had occasion to talk about him.

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Our London Letter

(From Our Own Correspondent)

G. M. C.

Under the auspices of the Medico-Legal Society Mr. Justice Humphreys opened a discussion on the General Medical Council (Feb. 23, '38) and detailed the working of this Council, particularly the nature and scope of the trial for "the infamous conduct in a professional respect." He was of the opinion that the Council has been discharging its legal duties in a very commendable manner. Mr. Kitchin who participated in the discussion was, however, of opinion that the composition of the Council and its penal procedure were not conducive to a real judicial decision. He said that a tribunal of the Council's 39 members, most of them unacquainted with general practice, was unwieldy and unsuitable. He pleaded for younger doctors, particularly women and general practitioners, to be included in the Council. Sir Henry Brackenbury, a member of the G. M. C. for the last 15 years, maintained that the Council has been highly judicial and just in its decisions and repudiated the theory that medical men were inadequately equipped for estimating evidence. Mr. Kitchin said in reply that there was extraordinary unanimity among the pressmen attending the Council's meetings: they all came away from each session gritting their teeth at some apparent injustice.

TREATMENT OF PLACENTA PRÆVIA

Dr. Davidson, Master of the Rotunda Hospital, at a meeting of the Obstetrical Section of the Royal Academy of Medicine, Ireland, (Jan. 27, '38.) opened a discussion on the treatment of placenta prævia.

This embodied a statistical review of the results achieved in this condition by the Dublin maternity hospitals during the past five years. There were, he said, 304 cases, with 19 maternal deaths, 5 of which were due to hæmorrhage and 6 to sepsis. The incidence of anaerobic and *Bacillus coli* infections was high, suggesting that great care should be taken before intravaginal manipulations. Embolus, broncho-pneumonia, cardiac disease, and the anæsthetic accounted for the rest of the deaths. There were 161 foetal deaths (mortality 53 per cent). The treatment adopted in 179 cases was compression with the half-breech; there were 105 deaths in this series (a foetal mortality of 74 per cent). Willett's forceps was used in 38 cases, with 12 deaths (a foetal mortality of 31 per cent); cesarean section was done in 24 cases, with 1 foetal death; the membranes were punctured in 36 cases, with 6 foetal deaths; and the vagina was plugged in 11 cases, with 5 foetal deaths. There

were 19 spontaneous births, with 2 foetal deaths. Of the infants lost, 100 had reached a stage of maturity which entitled them to methods of treatment that aimed at reducing the foetal mortality. The incidence of foetal abnormality was above the average, suggesting that radiography should be used before resorting to cesarean section.

Vaginal examination should not be made before admission to hospital, and blood-transfusion should be more frequently used before the actual treatment was started. Postpartum hæmorrhage should be guarded against in all cases. Version and the bringing down of a leg was invaluable in urgent cases but its use should be greatly restricted when the mother was in good condition and the foetus more than 34 weeks old. In such cases puncture of the membranes was recommended for lateral, Willett's forceps for marginal, and cesarean section for central or partial placenta prævia.

Dr. Quin, who presided, said that a third of the deaths arose from bleeding after the condition had been diagnosed. He felt that these deaths were in most circumstances preventable. In a patient who was already bled almost white a very small amount of postpartum hæmorrhage might be the deciding factor. He emphasised the great amount of care necessary after delivery. He severely condemned anyone who attempted to examine a patient suspected of having a placenta prævia unless he had at his disposal the means of dealing with any eventuality that might arise. He mentioned the installation of a blood-storage bank at the Meath Hospital and said that it was now always possible to obtain blood for transfusions from it without having a donor. It had already proved a life-saving measure in many cases. The giving of this blood was no more complicated than the giving of ordinary intravenous saline.

Our American Letter

(From Our Own Correspondent)

DRUG THERAPY IN CORONARY DISEASE

Coronary Disease is the problem which at present interests American medicine in the highest degree. A detailed report of Harry Gold, read before the Section of Medicine in the New York Academy of Medicine, gave a clear view of the use of drugs in today's treatment of coronary disease. The chief specific objectives toward which drug therapy is directed in the course of coronary disease are pain, nervous symptoms, (apprehension, anxiety and restlessness), congestive heart failure, paroxysmal dyspnoea, shock, and disorder of heart rhythm (auricular fibrillation or flutter, ventricular tachycardia).

The agents most frequently employed in connection with one or another of these phenomena are nitrites, xanthines (theobromine and theophylline), sedatives, opium alkaloids, digitalis, quinidine, diuretics, oxygen, papaverine, iodides, tissue extracts and emergency measures. All the nitrites, according to Gold, act qualitatively alike

and if suitable doses of one have been given without relief it is not likely that any other member will prove any more effective. The most satisfactory preparation is the tablet triturate of glyceryl trinitrate, and the average dose is 1/150 grain (0.0004 Gm.) dissolved under the tongue.

Gold says that the evidence leaves no escape from the conclusion that aminophylline, theocaine, theobromine with sodium salicylate, or any of the other xanthine compounds exert no action that is useful for the routine treatment of cardiac pain or myocardial infarction. Of course, the purine bases are extremely valuable as diuretics in congestive cardiac failure. Also respiratory depression with Cheyne Stokes respiration often shows dramatic improvement from the intravenous injection of from 0.25 to 0.5 Gm. of aminophylline.

In the classic case of coronary thrombosis in which there is agonizing pain, anguish and terror of impending death, morphine is the drug of choice. A plan which is applicable in the majority of cases is this: one-fourth grain (0.016 Gm.) of morphine sulphate by subcutaneous injection, repeated at intervals of one-half hour until the pain is abolished or reduced to a minimum (no more than 1 grain in 12 hours). Codeine in doses of 1/2 grain or 1 grain may often be used with advantage in the milder cases of coronary thrombosis.

Sedatives play an important role in the management of patients with coronary disease. It is advisable to use only moderate doses of these drugs. As a rule it is unwise to exceed from 1/4 to 1/2 grain of phenobarbital 3 times a day or from 1/4 to 1 1/2 grains of phenobarbital sodium or analogous doses of some of the other members of the group. The use of digitalis in coronary artery disease constitutes the most widely debated of all questions concerning the treatment of this disease. A satisfactory dosage in the average case of auricular fibrillation or heart failure in coronary thrombosis is about 6 grains or 0.4 Gm. (4 cat units) of digitalis leaf daily for 3 days, followed by about 3 to 4 1/2 grains or from 0.2 to 0.3 Gm. (2 to 3 cat units) a day as long as necessary. The indications for the diuretics overlap in part those for digitalis.

Quinidine and the related alkaloids of cinchona have the same uses in cases of coronary disease as in all other types of cardiac diseases. It usually requires large doses to abolish the more severe forms of ventricular tachycardia, from 30 to 100 grains in a period of several hours. The intravenous injection of quinidine is dangerous and should not be used except in extreme emergencies, and then only by those familiar with its use. Quinidine should be used only if it appears necessary to expedite the restoration of the normal rhythm.

Papaverine in 1/2 or 1 grain doses exerts a mild general depressant action. It appears to have little value, however, in the control of cardiac pain. While iodides are extensively employed in the treatment of coronary sclerosis, not a vestige of evidence exists that they influence the symptoms or the course of the coronary disease in the absence of syphilis.

There are several emergency situations arising in the course of coronary thrombosis in which drug therapy is extremely difficult to evaluate, namely shock, acute pulmonary oedema, Adams-Stokes attacks and acute collapse at the onset of an attack in which the pulse disappears and consciousness is lost. Epinephrine is occasionally helpful in acute pulmonary oedema, if the systemic pressure is low, and in Adams-Stokes attacks. There is danger in these cases of precipitating ventricular tachycardia. Solution of posterior pituitary should not be used for its vasopressor effect because of the constrictor action on the coronary vessels. Caffeine, metrazol, coramine and intravenous dextrose solutions are widely used in the peripheral failure of coronary thrombosis, but there are no satisfactory clinical studies that throw any light on their usefulness. The major part in the control of coronary disease lies not in drugs but in expert guidance in making the mental and physical adjustments which will enable these patients to carry on within their capacity without symptoms.

Our German Letter

(From Our Own Correspondent)

DECLINE OF CONSANGUINEOUS MARRIAGES

Since 1875 there are detailed statistics in Prussia whether the marrying people are nearly related, whether they are first cousins, uncle and niece, aunt and nephew. Those consanguineous marriages were in the average:

1875/84	1885/94	1895/04	1905/14	1915/24	1925/34
0.78	0.62	0.48	0.43	0.30	0.17

In 1934, 1935, 1936 the percentage of consanguineous marriages was about 0.11%. We see that consanguineous marriages have decreased noticeably and constantly in six decades.

Prof. Fritz Lenz, from the University of Berlin, sees the principal causes of this development in the increase of migrations within Germany as well as the concentration of the population in large cities and industrial centres. For the families are much more separated and mixed in this way than in the country. Another important factor is decreased natality. While during the seventies the average number of births per marriage was 5, it was only 2 during the last decade. But at the average of 5 births every male had on an average 20 female first cousins, one of whom he might marry, while he has only two female first cousins with an average of 2 births a marriage.

10 per cent of consanguineous marriages are between uncle and niece, or between aunt and nephew.

Those calculations are of importance for the evaluation of the influence of consanguineous marriages on hereditary diseases and disorders. As about one-third of all deaf-mute children come from consanguineous marriages, decline of those marriages must produce a decline of deaf-mutism too. Another important factor of the decline of

deaf-mutism is the decrease of meningitis, scarlet fever and syphilis. The majority of cases of hereditary disorders are found not in marriages of close blood relations but in those of more distant relatives, namely, in marriage partners who do not know that they are related to each other, but who come from the same community or the same rural population. The decline of consanguineous marriages is to be considered an important cause of the decrease of recessive hereditary diseases.

FURTHER INCREASE OF POLIOMYELITIS

While after 1910 poliomyelitis had become a rather rare disease in Germany, the frequency rose from 1926 and reached 2840 cases in 1927 and later the peak of 3869 in 1932. Since 1933 a gradual upward trend had been observed:

1933	1251 cases
1934	1699 "
1935	2080 "
1936	2256 "
1937	2723 "

The number of cases of poliomyelitis, per 100,000 persons, was 4.0 in Germany in 1937, the highest figure having been 6.0 in 1932, the lowest 0.6 in 1925. There are very large differences in different countries. In 1936, the figure was 1.4 in England and Wales, 3.4 in Germany, 30.4 in Switzerland, 49.0 in Sweden.

Local conditions are of utmost importance for the development of the epidemic as may be seen from the fact that the morbidity from poliomyelitis was 41.3 in Upper Bavaria in 1937, while the average in all Germany was no more than 4.0.

According to the actual morbidity of the last few years in Germany, it may be estimated that from 1 million children about 2,000 suffer from poliomyelitis during their childhood. 600 of these 2,000 children recover, 1200 of them remain invalid, and 200 die from the disease. Convalescent serum has been widely administered in Germany the first time in 1932, it still is in great use. The Reichsgesundheitsamt, Berlin, is the central organization where from convalescent serum is distributed throughout the country. This serum is provided for only by two pharmaceutical factories, i.e., Behringwerke, Marburg, and Sächsisches Serumwerk, Dresden. Convalescent serum has been collected in an amount of 70 litres in 1934, 166 litres in 1937.

The medical practitioner is required by law to notify cases of poliomyelitis to the local Public Health Authorities. This notification was made in 14.6% of the cases on the first day of treatment, in 13.8% after more than a week, while the majority of cases (52.7%) was notified on the second day of treatment. Early notifications are the more frequent the longer an epidemic lasts.

REGULATION TEST OF CIRCULATION

F. Schellong, of Heidelberg, has developed a method which he calls the regulation test of circulation. This test can be carried out with the methods of the specialist for cardiovascular

diseases. It consists of three parts. The first part regards the measure of systolic and diastolic pressure and of the pulse rate (a) in the state of rest, (b) immediately after getting up and in intervals of one minute each during this phase, (c) immediately after lying down and in intervals of one minute each during this phase. From this test we are able to see the state of the blood vessels which depends on the nervous system. Heart diseases cannot be discerned by this method as the regulation of circulation in upright position is a peripheric condition. How good regulation is, may be seen from the blood pressure.

The second part of the test concerns the measure of the systolic and diastolic blood pressure and of the pulse rate immediately after climbing stairs and in short intervals thereafter. The results of this test are influenced by the condition of the heart, of the vessels and of the nervous system.

The third part of the test concerns the measure of the QRS duration of the electrocardiogram before climbing stairs, immediately afterwards and then in intervals of one minute each. Third and second parts are carried out together.

Healthy hearts show a shorter QRS complex immediately after climbing stairs, while this is not the case with sick hearts, it is even longer. The results of all three parts are given by curves. This regulation test is a combination of several tests, and only such a combination enables us to know the regulation and to differentiate between disorders originating from the heart or from the vessels. The regulation test is only one part of general examination. The individual condition of an examined person is tested more accurately this way.

THERAPEUTIC INDEX

If your patient has "go,"
Use sulphanilamide;

If he's water on his knee,
Use sulphanilamide.

If he's bothered by the hives,
Or echinococcus thrives,
Don't you fret, just busily
Use sulphanilamide.

If little Johnny has a spell,
Use sulphanilamide;

If it's just his feet that smell,
Use sulphanilamide.

If his liver seems to quit,
There's no need to have a fit:
What you need to make him well
Use sulphanilamide.

If you want her to conceive,
Use sulphanilamide;

If it's piles you would relieve,
Use sulphanilamide.

If you've fallen down on knowledge,
You don't need to go to college;

For your reputation to retrieve,
Use Sulphanilamide.

Samuel L. Miller in the *Jr. A.M.A.*, March 18, 1939

INDIAN MEDICAL NEWS

(From our own Correspondent)

A SUB-ASSISTANT SURGEON IN TROUBLE

A few months back I reported in these columns the case of a Punjab S. A. S. being prosecuted by the Government of Punjab for an alleged Criminal breach of trust. The doctor lost his case in the High Court and has therefore preferred an appeal before the Federal Court to decide whether the previous sanction of the Governor in his discretion is required to launch a prosecution against a public servant for alleged criminal breach of trust and falsification of accounts.

This appeal came for hearing before the Federal Court on 20th March '38 and was concluded the next day. The following is a press summary of the proceedings:

The appellant Dr. Hari Ram Singh Chandra, Sub-Assistant Surgeon, belonging to the Punjab Provincial Subordinate Medical Service, appeared in person to argue the case.

Dr. Ram Singh was convicted by a Magistrate at Dera Ghazi Khan of criminal breach of trust in respect of Rs. 7-8 and sentenced to six months' rigorous imprisonment under Sections 409 and 477 (A), I. P. C. On appeal in the Sessions Court, the proceedings of the Lower Court were quashed on the ground that the previous sanction of the Local Government had not been obtained for the prosecution of the appellant in his capacity of a public servant. The Government appealed to the High Court and the latter overruled the decision of the Sessions Judge, holding that in such prosecutions, previous sanction of the Governor was not necessary.

APPELLANT'S CONTENTION

The present appeal is against the order of the High Court. The appellant contended that being a public servant, he was entitled to protection under Section 270 (1) of the Government of India Act and could not be prosecuted without the prior consent of the Governor. As this sanction had not been obtained, the judgment of the Sessions Court should not have been, argued Dr. Ram Singh, interfered with by the High Court. The bone of contention was, he added, whether the acts in question were done or purported to be done in the execution of his duties as a public servant.

The appellant pointed out that the acts complained of were that (1) he had removed some medicines belonging to the hospital under his charge to his quarters in the hospital premises and (2) he had omitted to make entries in the stock register in respect of two medicines. He did not deny that these medicines were recovered by the police on search from his quarters, but explained that he had removed them from the hospital to check and weigh in order to find out if there was any shortage in them. This he had done, he contended, in the discharge of his official duties.

In the course of the hearing, Sir Shah Sulaiman asked the appellant: "If you accept a bribe during your office hours, will it be in exercise of your official duties?"

Dr. Ram Singh: "In some cases it may be." (Laughter).

Sir S. Varadachariar: "Supposing a patient comes to you and you administer chloroform to him and then steal his ring. Will this act be in the execution of your official duty?"

The appellant replied that theft in any form could not be connected with his official duties.

Mr. M. Sloom, Advocate-General of the Punjab, who appeared on behalf of the Punjab Government, submitted that for the purposes of the case, the charges against the appellant should be taken as correct. What had to be found was whether the act of misappropriation by Dr. Hari Ram, as alleged by the prosecution, had been committed in execution of his duties. He maintained that alleged conversion to his own use by the appellant of medicines could not be urged to have been done or purported to have been done in execution of his duties and, therefore the appellant was not entitled to protection under Section 270 of the Government of India Act of 1935, which necessitated the previous sanction of the Governor.

As regards the falsification charge against the appellant, the Advocate-General of the Punjab submitted that it was an act of omission and could, therefore, not be covered by Section 270 of the Government of India Act, which dealt with acts of commission alone.

INDIA ADVOCATE-GENERAL'S VIEW

Sir B. L. Mitter, Advocate-General of India, submitted that sanction was necessary in the case, because, in his opinion, the act of the appellant could be said to have been done in execution of his duties. He requested the Court to interpret liberally Section 270 of the Government of India Act.

Asked by the Chief Justice what was his view of the matter, Sir B. L. Mitter said that in his opinion, sanction was necessary for both the charges against the appellant.

Dr. Ram Singh, replying to the arguments of the Advocate-General of the Punjab, submitted that where an aggrieved public servant raised the defence that the act complained of was in the execution of his duty, he was entitled to the protection afforded by Section 270 of the Government of India Act. He added that protection had been given to public servants whenever the question of execution of public duty was involved, either directly or indirectly, either by way of prosecution or of defence.

The appellant prayed to the Court to take the charge against him at its face value and not to attach any weight to extraneous matters. He pointed out that the charge did not speak of conversion of the medicines in respect of which criminal breach of trust is alleged, to his personal use but only of misappropriation. Therefore, he argued it was covered by Section 270 of the Government of India Act. The interpretation

given to the Section should not, submitted Dr. Ram Singh, be such as to take away the protection enjoyed by public servants. If the sanction of the Governor had been sought for in his case, he would have brought to the notice of His Excellency the manner in which he had been systematically harassed and exposed to ignominy.

The Federal Court gave judgment partially in favour of Dr. Hari Singh of the Punjab Provincial Subordinate Medical Service, who appealed against the Lahore High Court's order claiming retrial on charges of criminal breach of trust in respect of a stock of medicines and falsification of accounts. The appellant, who argued his own case, contended, in the main, that the consent of the Governor of the Punjab under Section 270 of the Government of India Act was necessary for the trial in the lower courts, which, however, had not been obtained.

The court ordered that the case be sent back to the Sessions Judge, Dera Ghazi Khan, for hearing on the merits as regards the charge under Section 405, Indian Penal Code (criminal breach of trust); that the order of acquittal of the Sessions Judge be set aside, and that the proceedings under Section 477-A of the Code be quashed for want of jurisdiction, the consent of the Governor not having been obtained.

"It will be open to His Excellency" proceeds the order, "after considering the facts of the case, to give the consent to a fresh prosecution under Section 477-A if he should think fit; and it will be equally open to the Sessions Judge to order a retrial if he is satisfied that the joinder of a charge which the court had no jurisdiction to hear, has prejudiced the accused person in his defence and thereby occasioned a failure of justice."

Mr. Sleem, assisted by Mr. Kurshid Ahmed and instructed by Mr. Tarachand Bryandhan, appeared on behalf of the Punjab Government; Sir B. L. Mitter, assisted by Mr. Hussain Malik, appeared for the Government of India. The appellant, who argued the case in person, was instructed by Mr. B. Banerji.

USELESS CHOLERA VACCINE IN THE MARKET

The P. H. Commissioner with the Government of India warns the profession and the public against the danger of ineffectual cholera vaccine, so plentiful in the market, and the consequent false sense of security. Examinations carried out on Cholera Vaccines available in the markets in India during the last 18 months have indicated that in certain cases these Vaccines were not prepared from the strains of true organism and therefore could not be expected to give protection against Cholera.

It is, however, by no means certain that those engaged in the manufacture of anti-cholera vaccines are all sufficiently acquainted with recent bacteriological findings. It would be disastrous if the people of India lost their belief in the value of anti-cholera inoculations. It is therefore the duty of all health officers, medical officers and private practitioners to ensure that the cholera vaccine

they use possesses a high protective value. With that object, they should assure themselves that it is manufactured from a suitable strain of organism in accordance with the recommendation made in 1936 by the Cholera Advisory Committee regarding the technique of manufacture of cholera vaccine and the strains to be used.

For the purpose of ensuring that the vaccine is made from correct strains it is recommended that those employed in the manufacture of the vaccine in India should be strains tested and issued by certain specified laboratories which have been continuously engaged in the study of the cholera vibrio. The Directors of the Central Research Institute, Kasauli, the Calcutta School of Tropical Medicine and the King Institute, Guindy, have expressed their willingness to issue suitable strains to all laboratories, including those of commercial firms, for this purpose.

Copies of the recommendations made by the Cholera Advisory Committee in 1936 are available on application from the office of the public Health Commissioner with the Government of India.

RECENT NUTRITIONAL RESEARCH

Investigations under a scheme approved by the Nutrition Advisory Committee of the Indian Research Fund Association have shown that a special feature of the Indian diet is a marked increase in the consumption of fat with the rise in economic scale.

Four types of communities in different areas were selected for diet and clinical surveys, namely, industrial workers in Assam (the coolie class), the middle-class agriculturists in Bengal, the well-to-do Calcutta households and a mixed middle-class community in Ferozepore, Punjab.

The diet of the Assam coolies was found to be poor in total calories, in total proteins, in fat, in calcium, in vitamin A and in carotene, also to a lesser degree in vitamin C and iron. Most of the families took no milk. Conditions were somewhat better among the middle-class agricultural group though the fat and the animal protein consumption was low. The diet of well-to-do people in Calcutta was almost as good as that recommended in the European standards.

The surveys show that Assam coolies live on a diet which is inadequate qualitatively and probably also quantitatively. To a lesser extent it is also true of the agricultural community in Barasat, Bengal, yet the inherent vitality as judged by the percentage rate of growth and grip per lb. body weight, appeared to be good.

Definite signs of vitamin A deficiency in the diet were seen only in Assam, the rural area in Bengal and Calcutta being exempt from them. Malocclusion of teeth, of which the cause is obscure, was most common among the Assam children (23.2 per cent) and least in Calcutta (8.0 per cent). On the other hand the incidence of enlarged tonsils was greater among the well-to-do (42.3 per cent) and least among the coolies (12.8 per cent). Conditions of malnutrition were present amongst 38.7 per cent of boys in Assam and amongst 33.8

VITAMINS IN INFANT FEEDING NATURAL OR ARTIFICIAL?

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Scientific evidence is rapidly accumulating to indicate that in the prophylaxis of rickets and other bone diseases the natural vitamin content present in milk, butter and cod-liver oil is more reliable and effective than that artificially produced by irradiation.

Dr. J. C. Drummond, in an address at St. Mary's Hospital, London, 17th May, 1934, stated:

"It may come as a blow to learn that artificial vitamin D is not nearly so active in preventing or curing rickets as is the natural vitamin D which is present in milk, butter and cod-liver oil."

Steenbock, the American pioneer of the irradiation process, has also admitted (Jnl. Biol. Chem., July 1932) that:

"Ergosterol and yeast when activated antirachitically by ultra-violet radiations are inefficient sources of vitamin D for the chicken. Whereas one per cent. of cod-liver oil of average potency resulted in normal bone formation, it required from 40 to 120 per cent. of cod-liver oil equivalence as irradiated ergosterol and from 7.5 to 60 per cent. cod-liver oil equivalence as yeast to produce the same result."

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per cent in rural Bengal, and 16.3 per cent in Calcutta. These figures, however, fell with the rise in economic status.

The average number of children alive per family was 1.8 in Assam, 3.5 in rural Bengal, and 4.2 in Calcutta. In none of the groups were children sent away elsewhere; indeed in Assam they obtained employment in the industry from the age of seven.

The families surveyed in Ferozepore, Punjab, included Hindus, Muslims, Sikhs of the artisan class, and a small group of sweepers. The diet of this mixed group was almost as good as that of the well-to-do people in Calcutta in calories, proteins and fat. Even the sweeper class were on a much better diet than the Assam coolies. Their main cereal was wheat and the quantity of milk available for consumption was about 8 ozs. per head per day. In spite, however, of their better diet, particularly as regards calcium, the incidence of caries was over 30 per cent. The number of throats with enlarged tonsils was also high. The average heights and weights of the children were above those of the Assam and rural Bengal groups.

An increase in the cultivation of green vegetables and consumption of dals among the poorer classes, it is said, would be a cheap and simple expedient at least to prevent the appearance of xerophthalmia.

INTERESTING NEWS ITEMS

That the lowest production and consumption of milk and milk products is shown by Bihar and the Central Provinces and the highest by the Punjab, and that only a fifth of the total population of India obtains the minimum physiological requirement of milk and its products, are among the facts revealed in investigations financed by the Imperial Council of Agricultural Research to obtain precise information on the production and consumption of milk by Indian cultivators, so that measures may be adopted for better nutrition of the population through a proper breeding policy.

It is reported in the press that Col. Chopra has been requested by the Assam Government to advise them about the starting of treatment centres for opium addicts in the two sub-divisions of Assam where prohibition has been introduced.

By 106 against 69 votes, the Bengal Legislative Assembly passed the Bengal Finance Bill, which seeks to impose an ungraduated tax of Rs. 30 on all professions, trades, callings and employments, exempting persons who do not pay incometax. The provisions of the Bill are to come into effect from April 1, 1939.

Mr. Dharendra Nath Dutt (Congress) moved an amendment urging that the tax should be imposed on incomes exceeding Rs. 3,000 a year.

The amendment was negatived by 113 against 76 votes, Anglo-Indian members also voting with the Opposition.

About a dozen other Opposition amendments, some of them seeking to reduce the tax were negatived without a division.

REVIEWS AND REPORTS

Builders of Health BY DAVID DIETZ. George Allen and Unwin. 12s. 6d. net.

This is an enthralling book, conceived and written in the style of romance writers, and we consider that to delineate the achievements and problems of the science of medicine in that style is no easy task. But the author has performed it with commendable success. The result is that even a lazy reader can go through the book at one stretch without feeling that tiresomeness which a scientific treatise usually gives even to an indefatigable reader. Even the chapters have been so titled in the manner of a romantic novel that the readers are bound to go through them to justify the captions. The fascinating story of medical research has thus been, for the first time, put in a form useful alike to the medical and the lay man. While we were going through the book, we were feeling why it could not be prescribed as a text-book of hygiene for the high school and college classes. It is just the book which the boys will like and to whom it is bound to be useful. We have seen some of the text-books of hygiene prescribed in our schools containing same matter as in the book under review but presented without emotion and enthusiasm, and in a style more telegraphic than literary. We would suggest to the publishers to send a few copies to the Directors of Public Instruction in India (there is one for each province) with a view to explore the possibilities of the book being accepted by them as a text-book for schools and colleges.

A Treatise on Dispensing, Nursing and Hospital Emergencies. BY DR. MOHD. RAHMAT ELAHI SIDDIQUI, Kitabistan, Kamala Nehru Road, Allahabad, Rs. 5.

Though many books like this have been written before in our country, yet this is the first book of the kind which satisfies the tests of an useful publication. First, the print and get-up are excellent—far above our expectation. It almost looks like a British publication. The printers therefore deserve our first congratulation. Second, the subject matter is dealt with in proper order and sequence which shows that the author has relied more on his experience than on the urge for literary plagiarism. Third, all the illustrations have come out very well. We commend the book heartily, and in no conventional manner, to the general practitioners.

As a protest against "unjust super-session of his legitimate claims", Dr. Sushil Kumar Mukherjee, has resigned the post of Honorary Ophthalmic Surgeon of the Calcutta Medical College Hospital.

In the course of his letter of resignation to the Surgeon-General, Government of Bengal, Dr. Mukherjee says that he had on previous occasion acted in the place of Lt.-Col. Kirwan, Professor of Ophthalmic Surgery in the Medical College. This time, the Government of Bengal issued orders giving the officiating appointment to a person who, Dr. Mukherjee says, is junior to him in the profession by at least eight years. "This", he says, "is an unjust super-session of my legitimate claims and is not consistent with my self-respect, my position and the dignity of my profession. I therefore feel that I cannot submit to it."

Dr. Mukherjee had acted in that honorary capacity for about eleven years.

The Principles of Dream Psychology. BY B. C. SINGH. Thacker, Spink & Co., Calcutta, Rs. 4 net.

We think the author has succeeded in his object of outlining briefly the scientific view point of dreams. Though the genesis and interpretation of dreams are still a subject matter of speculation, and though Freud, Jung, Havelock Ellis and others have enriched the subject with fertile suggestions yet we feel that all their explanations are still incomplete and insufficient in explaining the origin and course of dreams. The author, however, has given a brief summary of all the view points with a dash of his own personal experience, and his essays are excellent both in style and presentation. We heartily recommend this book to our readers.

Air Raid Precautions—Hand-book dealing with personal protection against gas. Published by His Majesty's Stationery Office, London and available from the Aero Stores, Napier Road, Karachi.

We are almost on the brink of another war, although honest Chamberlain had tried his best to avert it. We also know that this war would be one in which civilian population would be exposed to the lethal ravages of air-raids. The publication is therefore timely and we would request everyone of our readers to buy this hand-book and be prepared for the worst.

Sri Ramakrishna Math Charitable Dispensary, Madras. Report for the year 1938. We confess we are partial to Sri Ramakrishna Math, just as a child is partial towards his mother. And since such partiality is more sublime than selfish, we have no hesitation to appeal once again to our readers to help this institution with some donation in coin or kind. Could not anyone of our rich readers give this institution a portable x-ray apparatus as a gift? This will be a material help to this hospital. It has no accumulated funds, because, we have never been so charitable as to make this a possibility; and without reserve funds our medical readers can easily conceive the predicament of such an hospital. Yet the Swamijis of the Math are carrying on the work of medical relief without even criticising our parsimony. During the year under report the hospital has received 33,746 new patients and has even given the benefits of a laboratory examination to those who needed it. The medical manufacturing firms have contributed generously by way of medical supplies, and the lay public even has given no mean share to its upkeep. A few doctors are giving thier honorary services. But what of the medical men's charity—are they always to receive and never to give? Our appeal over the last year's report, we understand, has not fetched a single pié for this hospital from our readers. We hope they will not repeat the same this year.

Annual Report on the Hospitals in the Bombay Province for 1937: The province seems to be forging ahead in the matter of medical relief under the direction of a popular government. They have decided to open 200 new centres of rural medical relief, the government bearing 4 5th of the cost. An extended nursing service also has been inaugurated. A new Psychiatric Department has been opened at the J. J. Hospital, Bombay, and we welcome this measure. There are 938 doctors, 736 nurses and 164 midwives under the employ of the Government Medical Department. The incidence of and mortality from chief diseases are as follows: Cholera 2,008 (deaths 74); plague 43 (deaths 8); small-pox 1197 (deaths 136); T. B. 18,326 (deaths 1108); pneumonia 15,783 (deaths 1002).

Annual Report on Hospitals in the N. W. F. Province for 1937: It is a happy news to read in the report that the hardy people of the frontier are enthusiastic about the Western system of medicine and surgery. According to the report the chief needs of the medical administration are: (1) Complete overhauling of medico-legal work (2) Handing over of all infant welfare work to the Red Cross. (3) The handing over of some minor dispensaries to the Local Bodies. (4) Extended provisions for male and female nurses. (5) Medical relief in rural areas. We have no doubt, the medical Premier of the Frontier Province, Dr. Khan, would build the hospital administration on a sure foundation. The medical department as well as the province are safe in his hands.

Annual Report on the Public Health in Sind for 1937: The report is replete with useful graphs which give a bird's eye view of the position of public health in this small province. Karachi is its commercial citadel with first-class sea and air bases. So, quarantine work in this city is one of the essential features in the report. Greatest precaution is taken in disinfection, and the authorities are always on the look-out for possible import of yellow-fever cases or the disease vector. The province has got a population of 82'79 lakhs, and the death rate has been 12'09 per mille. The report is a very useful document in many ways, particularly the graphs are very instructive and illuminating. Sind may well be proud of its achievement in Public Health administration.

Annual Report of Hospitals in Orissa for 1937: The year opened with 175 hospitals of which 40 were State Public, 6 State Special, 101 Local Fund and 4 private aided, 10 private non-aided, 8 railways and 6 subsidized rural dispensaries. Medical personnel: I. M. S. office 1; I. M. D. 2; Assistant Surgeons 22; S. A. Surgeons 182; Honorary graduates 8; Honorary licentiate 1. The total indoor accommodation was 878 for males and 852 for females. The total number of persons treated was 20 lakhs. There were 64 leper clinics. Special grant for treatment of venereal diseases was distributed to important hospitals. Incidence and mortality of chief diseases: cholera 877—died 52; dysentery 38,455—died 175; malaria 3'69 lakhs—died 62; K. A. 63—died 2; pneumonia 2725—died 108; small-pox 54—died nil; T. B. 1191—died 26. Income 7'06 lakhs. Expenditure 7'50 lakhs. It is reported that the problem of rural medical relief is engaging the attention of the Government.

Annual Report of the Nair Dental College Hospital, Bombay, for the year 1937'38: We are glad to note in the report that this college hospital is gaining increasing recognition in our country and even elsewhere. With such a good record of work behind and with ambitious plans for the future it certainly deserves the encomiums paid by those in authority and in the profession. Public Dental Health Service for the poor is one of its commendable features. We desire to emphasize that this college-hospital though under private capital and enterprise is not run on profit basis except up to the point of self-maintenance. The report endorses the urgent need for a Dental Registration Act in every province so that Dental Education and practice may be run on sound and ethical lines. We hope that such an enterprise of for reaching consequence to the health of the nation built on the industry and sacrifice of its organisers will meet with ever-increasing recognition and popularity, particularly when the institution is discharging what is really the duty of the Bombay Government and the University.

EXTRACTS

Human Oil in the Treatment of Adherent Scars: CECIL P. G. WARELEY (B.M.J., September 17, 1938) writes: Adherent scars are always a problem, and especially so when adherent to bone or cartilage. Some five years ago, when confronted with two cases of extensive adherent scars in the neck due to x-ray treatment given for exophthalmic goitre, I first tried the experiment of using human oil. In these cases the attenuated and parchment-like skin of the neck was adherent to the cartilages of the larynx and the trachea. All the subcutaneous tissue of the neck and the infrahyoid muscles had disappeared, and there was absolutely no independent movement of the skin over the trachea and laryngeal cartilages. These patients were in a miserable condition, and had travelled over the Continent and visited numerous clinics in search of relief for their sufferings. As may be imagined, swallowing was difficult and painful, as the skin and the trachea were densely adherent. The only form of treatment appeared to be the introduction of some substance between the adherent skin and the trachea, cricoid, and thyroid cartilages. Excision was out of the question, and x-ray treatment could not cure a condition it had produced. I experimented with various types of oil, including different grades of paraffin, but none of these gave satisfactory results and all were very painful.

Knowing that human fat was fluid at body temperature—for if an incision is made into the abdominal wall one can see the fat globules when some of the fine trabeculae which hold them imprisoned are cut through—some fat from the omentum was removed at laparotomy and investigated, and it gave good results.

Preparation of the oil.—My colleague, Dr. Creed, assisted me greatly in the isolation and sterilization of the human oil. The procedure we adopt is as follows: A portion of omentum is removed from a person who is undergoing an operation such as the removal of the appendix or gall-bladder. The excised portion of omentum is placed in a sterile vessel and taken to Dr. Creed's pathological laboratory. It is thoroughly washed with distilled water to free it as completely as possible from serum and blood, and then placed in a specimen jar half filled with distilled water and plugged with cotton-wool. This is heated to 120° C. in the autoclave for half an hour. After this treatment most of the fat will be found floating free on the surface of the water as a clear yellow oil. While still warm it is pipetted off with a sterile capillary pipette and distributed into sterile 1 c.cm. ampoules. A little is also inoculated into broth culture medium to check its sterility. Each ampoule, after sealing, is placed in a short wide test tube, which is plugged with wool and sterilized in the autoclave. The ampoules are kept in these plugged tubes so that their exterior remains sterile and can be safely handled by the surgeon.

Technique of treatment.—The human oil is liquid at body temperature but is quite solid at temperature below that. The oil is put up in 1 c.cm. ampoules, as it is never safe to inject a larger quantity at one time. The ampoule is warmed in water until the oil is slightly above body temperature; the neck of the ampoule is then broken off and the oil drawn up into a warmed 5 c.cm. Record syringe. The reason for using a 5 c.cm. syringe instead of a 2 c.cm. one is that more pressure can be exerted when the injection is given, and this is a most important point. When the oil is in the syringe the scar tissue is carefully cleaned with spirit, and site is selected just at the outer border of the scar tissue and the syringe is insinuated between the adherent

bone and the contracted and adherent skin. The oil is forced in between these two structures, not more than 1 c.cm. being injected at any one place. The scar tissue is actually raised off the adherent bone or cartilage. Several different areas can be injected at one sitting, and the patient does not experience any more pain than is produced when an intramuscular injection is given. About twenty-four hours after the injection the site becomes somewhat red and hot; this condition persists for about twelve to twenty-four hours and then gradually disappears. Injections can be given at fortnightly intervals, and by degrees the adherent scar is made to float upon the underlying structure. In the case of badly adherent scars due to x-ray burns, as many as twenty to twenty-five injections may sometimes be required. It is very important that the injections should not be too frequent and that not more than 1·5 c.cm. be injected in any one area, or the scar tissue will give way and an ulcer will form which may take a long time to heal.

Besides cases where the scar is adherent to bone or cartilage, which are ideal for this form of treatment, there are others in which extensive adhesions have formed between tendons and their tendon sheaths or to skin itself, as on the posterior surface of the hand. In such cases the injection of the oil often results in the free movement of the tendon. Here again it is important that not more than 1 c.cm. of the oil be injected at a sitting or the thinned skin will give way; also at least two weeks should elapse before a second injection is given. Twelve cases of adherent scars at the back of the hand have been treated by this method and have given uniformly good results. It is also valuable in many cases of burns of the face in which the scar is adherent to bone. In a child that was terribly burned on the right side of the face resulting in a long adherent scar the whole length of the mandible on the right side twelve small injections of human oil resulted in a mobile scar which is gradually becoming more supple and less distinct.

In some cases of healed varicose ulcer of the leg where the skin is densely adherent to the tibia a mobile scar can be obtained by this method.

The advantages of this form of treatment are that the subject can be treated as an out-patient and there is no incapacitation; and it often renders extensive plastic operations unnecessary.

Pneumococcal Septicaemia Treated with M. & B. 693 S. C. DYKE (Lancet, Sept. 10, 1938) writes: The diagnosis of pneumococcal septicaemia carries with it a grave though not hopeless prognosis and the prospect in the most favourable circumstances of a dangerous, severe, and probably protracted illness. In the following case all symptoms promptly subsided on the exhibition of sulphanilamide-pyridine (M. & B. 693).

The patient, a woman of 61, was first seen with Dr. L. E. Dickson of Bridgnorth on August 9th 1938, when there was a history of right-sided lobar pneumonia starting abruptly seven weeks earlier. After a crisis on the tenth day she had continued to run an irregular temperature and had developed signs of empyema on the right side. On July 10th the empyema was drained by Mr. R. Milnes Walker, and the condition was satisfactory until August 4th when she suddenly became worse and rose to 104°F. Exploration of the empyema wound resulted in the evacuation of some pus but the condition failed to improve and the temperature remained high. Later the patient complained of pain in the left leg and the right carpometacarpal joint.

When seen on August 9th she was desperately ill; the left leg was painful to touch but presented no swelling, and the pain appeared to be due to a deep venous

thrombosis; the right carpometacarpal joint showed swelling and slight fluctuation suggesting the presence of fluid. Blood culture gave a pure and profuse growth of a pneumococcus. Both in culture and after mouse inoculation the organism failed to agglutinate with sera against pneumococcal types I, II, III, and VII, which were all that were then available in the laboratory. The type therefore remains undetermined.

The patient was at once put on M. & B. 693 tablets, taking 2 (1 gramme) four-hourly for the first 24 hours and thereafter eight-hourly. The temperature fell within 24 hours and there was immediate improvement in the clinical condition. The M. & B. 693 was continued until August 17th, the total dosage in the nine days being 48 tablets (24 g.). No second culture of the blood was taken but that septicaemia had been subdued after the first 9 g. Progress has since been uneventful and convalescence is now well established.

Calcium and Iodine in the Treatment of Enuresis. H. M. COHEN. (*The Medical Officer*, 24th September 1938) writes: While no specific cure exists for the treatment of enuresis there is a growing literature on the subject giving a varying percentage of cures by different methods. From observation of the cases under review it would appear that enuresis exists in all types of children, from the highly intelligent to the dull and backward, and from the heavy phlegmatic type to the restless animated type. The home condition also varied greatly.

In the majority of cases, the defect is distressing both to the parent and to the child and any suggested line of treatment is readily carried out.

For a long period, in common with others, the writer has given general advice and concentrated on the psychological aspect of treatment. The parents have been advised to develop a sympathetic attitude to the child and to encourage the child to gain confidence to overcome its complaint. It was gratifying to note that the parents realised that punishment was of no help; at the same time they did not realise the repeated garrulous discussion increased the child's apprehension. Continued pity was also to be avoided as this has a disastrous effect on the child. Instead the parent was advised only to show approval after a dry night.

The routine management of the child was also indicated. The parents were advised to give the child plenty to drink up to tea-time but nothing more after. It is agreed that the less drink given the more concentrated and acid the urine becomes, and the more irritating to the neck of the bladder. A hard mattress was advised for the child to sleep on.

Any associated condition was treated. Of these the most frequent were adenoids and thread worms.

The various medical treatments generally employed have not been suitable for clinic use. These include strychnine, belladonna, ergot, cantharides, pituitrin thyroid extract, camphor and aphedrine.

Latterly, however, calcium has been exhibited with promising results and the writer was encouraged by the result of Dr. Stocks of the Lancashire County Staff to follow this line of treatment.

A preparation of calcium with vitamin D was selected, since it is known that vitamin D aids calcium absorption. A tablet containing $7\frac{1}{2}$ grains calcium sodium lactate, $2\frac{1}{2}$ grains calcium phosphate and 500 international units of vitamin D was given daily.

It was also decided in a limited number of cases to exhibit iodine as this has been used empirically with some success. A tablet containing 5 milligrams of nascent iodine was given on alternate days. It may be noted here, as an indication of the complexity of the treatment of enuresis, that thyroid extract is said to

increase calcium excretion. Some of the cases which were not cured with the calcium treatment were given iodine. A careful watch was kept for any manifestation of iodism but in no case was this seen.

Results of Calcium Treatment.—Forty-six cases with an age range of 5 to 15 years were treated with calcium and 18 with a scattered age range were cured. Although the majority of the uncured cases were improved, no analysis has been attempted, because the fact remains that enuresis is present even if in a lesser degree. At the same time it may be noted that co-existing diurnal frequency was cured in the nocturnal uncured cases.

Results of Iodine Treatment.—Ten cases were treated with iodine and four were cured. In addition nine cases not cured with the calcium treatment were given iodine but there was not a single cure amongst them.

Calcium Mandelate and Sulphanilamide in Treatment of urinary infections.—H. DROLLER (*B. M. J.*, 24th Sept., 1938, Pp. 657) writes: Mandelic acid has its well defined indications in the treatment of urinary infections. It is most efficacious against *B. coli* and enterococci, but usually fails in *B. proteus* and staphylococcal infections. Sehnor (1937), Hryntschak (1937), Melton and Rosenheim (1938), and Kunstmann (1938) report series of cases treated with the calcium salt of mandelic acid. This salt is an insoluble tasteless powder which does not mix with water and can be given with milk or jam. Calcium mandelate is marketed by British Drug Houses as mandecal, and this was the preparation used in the present series of tests.

Recently the group of compounds of which sulphonamide, prontosil, and streptocide are the best-known members has been used extensively in the treatment of urinary infections (Gorrod, 1938; Cokkinis, 1938). To compare the efficacy of calcium mandelate with the sulphonamide group of urinary antiseptics we took two series of cases of urinary infections and tried to treat each series, according to indications set out below, with the respective drug.

Indications for the use of Mandecal.—Mandecal has the same indications as all the other mandelates. The renal function should be good, so that the urine may speedily attain a pH of 5.5 or less. Mandecal is most effective against *B. coli*.

Indications for the use of Sulphanilamide.—Sulphanilamide exerts its bacteriostatic action best in an alkaline medium. The kidney function may be good or moderately impaired. It is equally effective against *B. coli*, haemolytic streptococci, and *B. proteus*. It does not act on enterococci.

Two questions arise: Which drug fulfils the optimal requirements in sterilizing the urine in the shortest time, with the least amount of toxicity, in a given infection? and which treatment is the cheaper?

1. **Mandecal.**—Mandecal was found to acidify the urine of healthy individuals very quickly. In a self experiment the urine became strongly acid within eighty minutes of the ingestion of 4.5 grammes of mandecal (pH 7.6 to pH 5). On ingestion of mandecal, free mandelic acid is rapidly and almost completely excreted by the kidneys: the calcium is fixed to an acid radical and an acid urine is excreted to maintain the acid-base balance.

Causative Organisms.—In all but two cases *B. coli* was the organism concerned, the exceptions being two mixed infections: one with enterococci and haemolytic streptococci, the other with *B. coli* and haemolytic streptococci.

Clinical Results.—Using a standard dosage of 4.5 grammes of mandecal four times daily, we could prove that calcium mandelate acidifies the urine sufficiently to be an effective urinary antiseptic. The salt is pleasant to take, and in no case was the vomiting noticed which

is so common after ammonium mandelate medication. The cases treated have been divided into three groups: (1) those showing signs and symptoms of cystopyelitis; (2) those suffering from haematogenous bilateral renal disease and concurrent urinary infections; and (3) cases in which a bacilluria was discovered on routine examination, without clinical symptoms of urinary infection.

The duration of treatment varied from three to twenty-six days, the average being nine days. Hryntschak is of the opinion that calcium mandelate should not be used for periods longer than ten days, but I have never observed any nausea coming on after this time. No toxic symptoms were noticed, and the only difficulty encountered in taking the powder was due to the fact that mandecal floats on water.

The results compare favourably with those obtained with ammonium mandelate (Holling and Platt, 1936; Kunstmann, 1938). Hryntschak and Rosenheim both agree that mandecal is easier to take and less nauseating than ammonium mandelate; Kunstmann, however, found it less palatable. We can fully confirm the former authors' findings.

The cost of treatment with mandecal for a period of seven days amounts, according to the manufacturers (B.D.H.), to 8s. 4d. (hospital price).

2. **Sulphanilamide.** Since 1935 the number of favourable reports on the treatment of urinary infections with sulphanilamide has been steadily growing. This drug has the advantage of rendering the urine slightly alkaline (Marshall et al., 1938), and can be used during the acute stages of pyelitis and cystitis. It is directly bactericidal, and is more active in an alkaline medium (Helmholz, 1937 a, 1937 b).

PATIENTS TREATED WITH SULPHANILAMIDE (75 PER CENT CURES)

Type of case	No.	Cures	Failures
Acute pyelitis	2	2	...
Chronic "	3	1	2
Chronic Urinary infection	2	2	...
Urinary infection combined with: Acute nephritis	2	2	...
Chronic "	2	...	2
" peritonitis	1	1	...
Diabetes	3	2	1
Myxoedema	1	1	...
Ulcerative colitis	1	1	...
Pulmonary tuberculosis	1	1	...
Rheumatoid arthritis	2	2	...
Total	20	16	5

Clinical Results: A standard dose of 1.5 grammes of sulphanilamide a day was used, as suggested by Kenny et al. (1937). Only one toxic sign was noticed—namely, cyanosis. It occurred in three cases: one was an acute nephritis, the other two being chronic renal failure where isosthenuria already existed. All three patients lost their cyanosis quickly after cessation of treatment with sulphanilamide. The cases were again divided into three groups in the same manner as those treated with mandecal.

Failure: Chronic cystopyelitis in a man of 52; heavy mixed infection with enterococci and haemolytic streptococci. Treatment was continued for only ten days because the patient left hospital. (Previous mandecal treatment without success).

Chronic pyelitis in a man of 34. Left hydronephrosis, right kidney not functioning at all. Enterococci and lactose fermenting coliform bacilli. Patient developed cyanosis; drug stopped on tenth day. Chronic nephritis. Both this and the previous patient were already beyond an expectation of cure. Both had isosthenuria and rising non-protein nitrogen. One was a case of mixed infection with haemolytic streptococci, the other with enterococci and coliform bacilli; the latter developed cyanosis after seventeen days' treatment, when the drug was discontinued.

Diabetic cystitis in a female of 65 due to *Staph. aureus*. Treatment for a fortnight did not remove the infection. This is interesting in view of a finding of Becker (1937), who reported good results in staphylococcal cystitis.

The duration of treatment varied from three to twenty-seven days, with an average of ten days. The cost of treatment was about 6d. (hospital price).

Conclusion.—The danger of neglecting urinary infections is only slowly being realized. Evidence is accumulating that when they are insidious in their onset they may lead to a form of renal failure with contracted kidneys which shows certain typical pathological changes (Fahr, 1938). It is therefore necessary to treat all cases of urinary infection, however, slight, until the urine becomes sterile.

Two drugs are at our service. Mandelic acid is indicated in chronic infections with good renal function and concentrating power in the presence of pure *B. coli* infections. The calcium salt of mandelic acid is more pleasant to take and is as efficacious in sterilizing the urine as any other mandelate. The sulphonamide group of drugs is indicated in mixed infections and in the presence of haemolytic streptococci and *B. proteus*. Mandecal shows no toxic symptoms at all, whereas sulphanilamide in the dosage indicated brought on cyanosis in only three cases. No other toxic symptoms was observed.

Summary.—An account is given of two series of cases of urinary infection treated with mandecal and sulphanilamide respectively. Cures were obtained in 71 per cent of the mandecal and 75 per cent of the sulphanilamide series.

Sodium Diphenyl Hydantoinate in The Treatment of Convulsive Disorders. H. HOUSTON MERRIT, AND TRACY J. PUTNAM (*J.A.M.A.*, Sept. 17, 1938, Pp. 1072) write: The results here reported indicate that sodium diphenyl hydantoinate was effective in controlling convulsive seizures in a great majority of a selected group of patients who were not helped by other methods of therapy. It is natural to assume, therefore, that even more satisfactory results could be obtained in patients with a less severe tendency to convulsions.

It must be noted that with a few exceptions the duration of treatment in the majority of the cases was less than six months. It is probable, therefore, that many of the patients in the "completely relieved" group will later be transferred to the other groups, but it is also possible that greater experience with the use of the drug will make it possible to obtain better results in some of the cases in the moderately or greatly improved groups. Whether or not some of the patients will ultimately become refractory to this treatment, as has occurred with other forms of therapy, remains to be seen.

THE PLACE OF BRAN IN THE TREATMENT OF COMMON CONSTIPATION

MANY cases of common constipation are traceable to a deficiency of "bulk" in the diet. It is not always easy to obtain fruit and vegetables in sufficient variety or quality to encourage the patient to eat the large quantities required.

Many nutritional authorities today advise giving wheat-bran in the pleasant form of Kellogg's All-Bran. The fibrous bulk in All-Bran is of the same type as that derived from vegetables and fruit, but breaks down less easily during digestion. Its action is therefore more effective. All-Bran is also an excellent source of Vitamin B and iron.

All-Bran should be taken daily, as a breakfast food, with milk or cream. It is appetisingly crisp to eat, but once ingested, absorbs water and softens like a

sponge. Its mass then gently exercises the digestive tract, and this natural action is of great value where strain is best avoided. The laxative effect of All-Bran is not diminished by its continued use.

All-Bran may be cooked into appetising scones, bread etc. The patient's realisation that it is a food rather than a medicine is often psychologically helpful in relieving cases of chronic constipation. To ensure maximum effectiveness plenty of fluids should be taken, preferably between meals.

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during and after childbirth. When the patient is getting "nervy" and her strength flagging, a spoonful or two of Brand's will encourage food tolerance and enable her to keep to a normal diet necessary to maintain her strength.

A London doctor speaking with reference to an attack of Cholera, says "The only thing that my digestive powers could cope with for two days was small quantities of iced Brand's Essence of Chicken."

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In addition to a relief or a great reduction in the frequency of the attacks, it was frequently noted by the parents of children that they were much better behaved, more amenable to discipline and did better work in school. This improvement must have been due in a great part to the freedom from attacks, but it is also possible that the medication produced other changes in the activity of the cerebral cortex. Studies of the cortical activity by means of the electro-encephalogram before and after treatment with sodium diphenyl hydantoinate are being conducted in collaboration with Dr. F.A. Gibbs and will be reported at a later date. The results of this study may conceivably lead to the use of the drug in conditions other than the convulsive state associated with similar cortical dysrhythmias.

Sodium diphenyl hydantoinate has been shown to be a relatively non-toxic drug when given in doses of from 0.2 to 0.6 Gm. a day. There were no fatalities in a group of 200 patients and in only two patients was there a reaction that could be considered as serious in nature—an exfoliative dermatitis in one patient and a non-thrombocytopenic purpura in the second. Frequent studies of the blood and urine failed to reveal any evidence of damage to the hemopoietic system or kidneys in any of the 200 patients. The toxic dermatitis produced by the drug, with the one exception already noted, was of a benign nature and was quite similar to that produced by another hydantoin compound, phenylethyl hydantoin (mirvanol), which was formerly used in the treatment of chorea minor. Sodium diphenyl hydantoinate is without doubt, however, considerably more toxic than bromides and the barbituric acid compounds. Cutaneous reactions as well as the minor toxic symptoms of tremors, ataxia, diplopia, dizziness and the like are much more frequently encountered. The high degree of alkalinity of the drug sometimes causes a sensation of nausea and discomfort in the abdomen, making it difficult for some patients to take it regularly. It is possible also that a more extensive use of the drug will result in other toxic reactions which we have not as yet encountered in our 200 patients. In spite of these handicaps we feel that sodium diphenyl hydantoinate is a valuable addition to the medical armamentarium in the battle against epilepsy and that it is worth trying with proper precautions in patients who have not responded to the less toxic modes of therapy, such as the bromides, the barbituric acid compounds or the ketogenic diet.

The optimum dosage of the drug must be determined by trial. Children above the age of 6 and adults should be started on a dose of 0.1 Gm. three times a day. Gastric discomfort and nausea can usually be prevented by giving the capsule with or immediately following the meals. If seizures are not controlled by the end of from seven to ten days an additional dose should be given at bed time. Further increase in the dose, up to a maximum of 0.6 Gm. a day, can be adjusted according to the tolerance of the patient. Infants and children up to the age of 5 years should be started on a dose of from 0.1 to 0.2 Gm. a day, which can be gradually increased to 0.3 to 0.4 Gm. a day if necessary.

The appearance of minor toxic symptoms, such as nervousness, tremors or ataxia, calls for a reduction in the size of the dose. If the reduced dose is ineffective, attempts can be made after from five to ten days to increase it. The use of the drug should be immediately discontinued if more serious toxic symptoms, dermatitis, purpura and the like develop. An exfoliative dermatitis makes further use of the drug absolutely contraindicated. A mild erythematous, morbilliform or scarlatiniform

reaction occurring on the eighth to the eleventh day of treatment is not of such serious import, and, if there are definite indications that the drug has been effective in relieving severe attacks, it can be given again in small doses with caution. If no untoward symptoms develop, the dose can be increased gradually every four to six days. On the reappearance of any toxic manifestation, further use of the drug is prohibited.

If patients have been receiving large doses of bromides or phenobarbital, these should be continued along with the sodium diphenyl hydantoinate, the dose of the bromides or phenobarbital being gradually decreased over a period of from four to seven days. This is advisable since the sudden withdrawal of the bromides or phenobarbital may result in the precipitation of a series of attacks before a reservoir of sodium diphenyl hydantoinate has been built up.

Our experience with the drug has not been sufficient to determine all the contraindications for its use. At present we feel that it should not be given to elderly persons with hypertension or other evidences of cardiovascular disease, or to debilitated patients.

Summary.—1. In a previous study it has been shown that sodium diphenyl hydantoinate is effective in preventing electrically induced convulsive seizures in cats. The drug is relatively non-toxic and well tolerated by the usual laboratory animals.

2. A clinical trial of sodium diphenyl hydantoinate was made in 200 patients with frequent convulsive seizures which had not been relieved by the previous modes of therapy.

3. In 142 such patients who have received the treatment for periods varying from two to eleven months, grand mal attacks were relieved in 59 per cent and greatly decreased in frequency in an additional 27 per cent; petit mal attacks were relieved in 35 per cent and greatly decreased in frequency in an additional 49 per cent, and psychic equivalent attacks were relieved in 67 per cent and greatly decreased in frequency in 38 per cent.

4. There were no fatalities. A toxic dermatitis occurred in ten patients (5 per cent.), nonthrombocytopenic purpura in one patient and minor (in many instances, transient) toxic reactions, tremors, ataxia, dizziness and the like in approximately 15 per cent.

Conclusions.—Sodium diphenyl hydantoinate is a valuable addition to the physician's armamentarium in the battle against "epilepsy." Its use should be restricted, for the present, to that group of patients who do not respond to the less toxic forms of therapy previously in common use.

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An Appeal to Members and Non-Members

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- Of these, only about 3000 are members of the Association today.
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- There is a subtle strength and charm in numbers: it means unity, discipline and power.

(● Extracts from a Circular appeal (20-S-39) of the General Secretary, A. I. M. L. Association.)

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Norsk Mag. f. Lægevidensk.,
Vol. 90, page 1245.

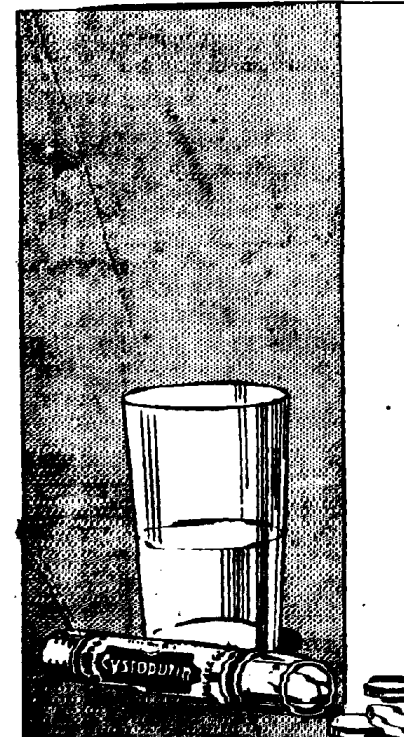
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(Am Medici, Vol. 18, No. 1)



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*Winterton and MacGregor, B.M.J., 1939 I, 5.

**Pharmaceutical J. 1939, 192, 31.

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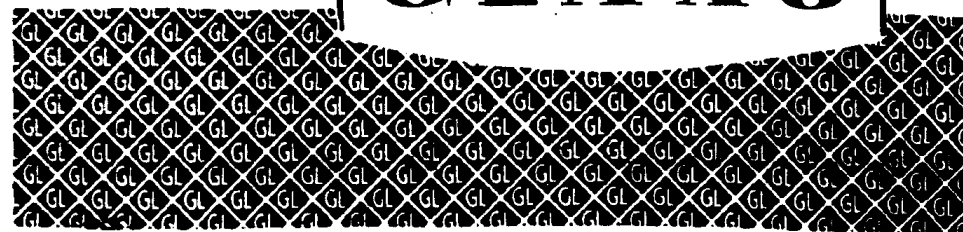
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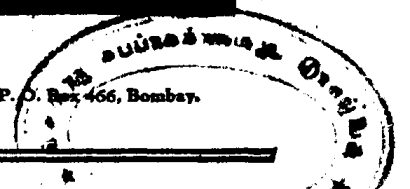
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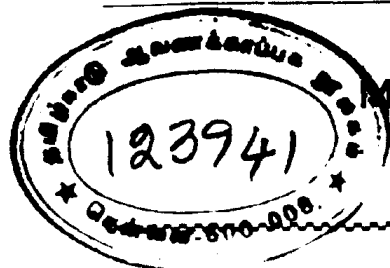
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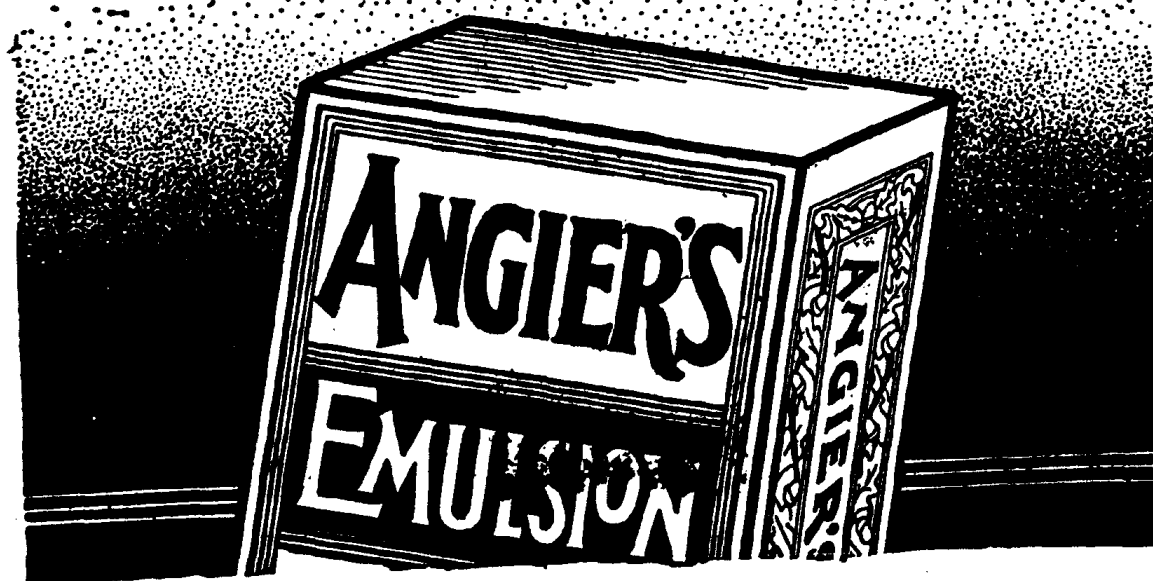
Dear Sirs,—Following repeated attacks of debility due to long service in the

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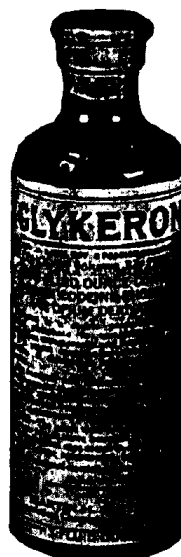
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