

564

THE INDIAN MEDICAL JOURNAL

Journal of the All-India Medical Licentiates' Association
(With which The Agra Medical Club Journal is incorporated)



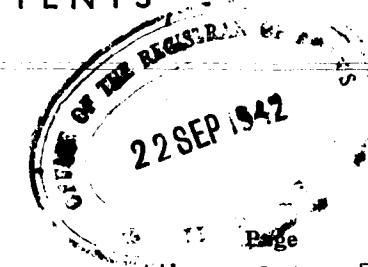
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Vol. 36 No. 9

CONTENTS

September, 1942

564



306

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Editorial

Leprosy Reports

Page
205

Addresses and Articles

A Study of Blood Pressure in Tea Garden Labourers

By Dr. U. R. Dey, L.M.P., L.T.M. ... 206

Technique of Irradiation

By Dr. P. M. Mehta, M.D., M.S., F.C.P.S. ... 208

Treatment of Granular Lids

By Dr. K. Krishnamurty ... 209

Modern Drugs (5) Dilantin Sodium

By Dr. M. S. Arunachalam, L.M.P. ... 210

Western Astrology and Medicine

By Dr. W. Schiwesheimer, M.D. ... 211

Medical News

... 214

Abstracts

... 219

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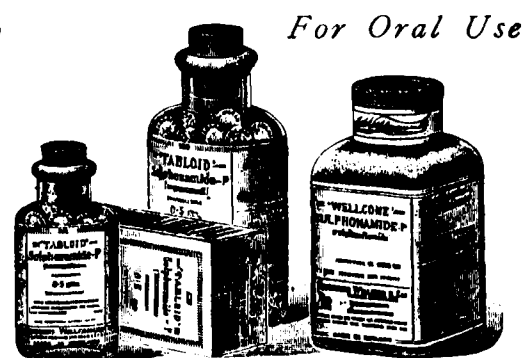
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Leprosy Reports

The reports on *Leprosy and its Control in India*, and *Leprosy Survey* recently issued by the Central Advisory Board of Health and the Indian Research Fund Association respectively are publications of great interest, and although many issues raised therein are not beyond controversy or cavil, yet, judged on the whole, they glean a lot of authoritative information on many of the tangled problems of leprosy.

The first report begins with a brief history of Leprosy in the world. We find here the common mistake of European workers in our country of tracing every kind of knowledge to the Greeks or the Romans, as if the world did not exist before. Thus, except for a passing reference that Sushruta Samhita (600 B.C.) gives an accurate description of leprosy and that isolation as a method of control was realised in our country from ancient times, it makes no reference that this disease is mentioned in the Vedas, that its prophylaxis is well described in Manu Samhita (800 B.C.), and its treatment by Chaulmoogra oil was in common use even before the Buddhist period. The same mistake is committed in its chronology of leprosy institutions in India by omitting to mention Raja Kali Shanker Leper Asylum in Benares which is the first of its kind established in our country so early as 1824. Nor is there any reason given why the Government should have handed over some of their leprosy institutions to Mission to Lepers—is it due to favouritism or inability to manage them? It is said that there are six kinds of Leprosy Organisations which are interested in Leprosy

in India, but the Medical Adviser to the Mission to Lepers, the research worker of the B. E. L. R. A. (Indian Council), the one in charge of Leprosy Research Department of the School of Tropical Medicine, the supervisor of Junior leprosy research worker of the I. R. F. and the propaganda officer of the B. E. L. R. A. in India—all these and more are rolled in one person who is, besides, not an Indian. No wonder, then, that the report mentions of the failure to link up local organisations, such as Naba Kusthashram of Purulia, Maharaji Sewa Mandal of Wardha and Zaheerabad Leprosy Colony of Hyderabad, with the provincial branches of the B. E. L. R. A. The report makes much of the research work done so far. But may we know what has been discovered that was not known before? The latest advances in Leprosy have been more the result of field work than out of the pursuit of the bacteriological will-o'-the-wisp. It is far better to spend money on a demonstration centre engaged in the actual work of ridding the area of leprosy than indulge in bickerings on classification, the histology of intermediary tuberculoid cases and the fallible observations on the type and age distribution of leprosy in the various parts of our country. We are not therefore much enthused over the final conclusion of the report that an All-India Leprosy Institute is necessary for better and co-ordinated work. It may provide a highly paid job to another European worker, but will by no means solve the problem of eradication of leprosy in our country with effect or economy.

The second report deals with Leprosy Survey. It is described to be of three kinds. Selection of the area is of common importance to all the three types, because, in the past, highly endemic areas were surveyed and its findings applied to the whole district—a costly mistake which the first B. E. L. R. A. (Indian Council) survey committed. We think that Types I and II surveys are useful for propaganda work, but it would be hazardous to use them as the basis for epidemiological findings. Type III Survey is best suited for this purpose, because, here, every individual is closely examined which is not possible in other Survey types. But this Survey must last for a long time, at least for a twenty-year period, to warrant us to draw

fair conclusions. In another part of the Report it is pointed out that "Leprosy may not be as serious a problem as would appear from the figures for incidence." This point needs further elucidation. It is true that gross incidence in South India is high, while in North India it is low. But taking into consideration the lepromatous incidence and not the rate it may have equal Public Health importance in both these areas. Again, in grouping cases in different age groups, the following factors may vitiate the findings in the child group: (1) It is difficult to diagnose leprosy among them without the two cardinal signs which are not usually present in incipient cases. (2) Since too much stress has been made on child leprosy, the temporary medical officer may, just to keep up the show, find more and more cases among children, specially the incipients and (3) since signs of leprosy among children are apt to disappear even without treatment the child rate may not give a correct idea as to the adult rate. It is therefore fair to assume that a high child rate does not necessarily mean a high adult rate in future, and may not be so important as claimed lately.

Mention is made in both the reports of the need to have a trained staff of workers for the various aspects of leprosy work. Such qualified persons are not beyond availability in our country. In fact, since 1931, groups of doctors are being trained every year in leprosy work, besides many others who have been in this field for the last 20 years and more. They are in the wilderness of unemployment or neglect. We, therefore, consider it too stale that the authors of these reports should be harping on this matter as if we have not qualified workers enough. What is really required is to give the necessary security of tenure and status to the present incumbents instead of allowing them to languish in temporary jobs on meagre remuneration and in perpetual subordination. This would be an impetus to medical men to get special training and to take up this work in increasing numbers. Slogans about qualifications and training are meaningless in this context.

ADDRESSES AND ARTICLES

A Study of Blood Pressure in Tea Garden Labourers

Dr. U. R. Dey, L.M.P., L.T.M.

(Assistant Medical Officer, Mokbari Tea Estate, Upper Assam)

Introduction

By blood pressure is meant the tension that the blood exerts on the wall of the vessel in which it is contained. Clinically, it only refers to the pressure of the arteries.

Blood pressure depends mainly on three factors:—

- (1) Force and frequency of the heart.
- (2) Peripheral resistance. (3) The out-put of the heart.

Any gross variation in the blood pressure is due to alteration in any of these factors.

The Normal Blood Pressure

The relative influence of blood pressure on an individual is in proportion to his susceptibility or resistance of his mechanical structure. As the mechanical feature of our bodies are inevitably different it follows that no rule-of-thumb can be applied in determining the blood pressure of an individual.

Before we can find out what is abnormal we must first be sure what is normal. In the tables which are published in various books we will find the nearest approach to "normal averages". But it should be clearly borne in mind that the normal blood pressure of a given patient depends on the habit, constitution and the alteration of the factors related to the blood pressure of the individual concerned in every case.

The normal blood pressure varies with the age, sex, and circumstances. It is a bit lower in females than in males and lower in children than in women.

Hypotension

Low blood pressure may be suspected if pulse is rapid when counted with the patient erect, and the rate falls to 30 or 40 beats when the patient is placed in recumbent posture. When measured by the instrument a systolic pressure of 80 mm. of mercury is regarded as extremely low. To the examining finger the pulse goes up rapidly, declines rapidly and is very easily obliterated.

Symptoms of prostration, lassitude, depression and sometimes sleeplessness accompany, with low arterial pressure.

Hypertension

In pathological hypertension the blood pressure is persistently above the normal of the individual. Temporary high blood pressure can be found in nervous excitement, after exercise and food. It is the condition of hyperpiesia (Albutt), or primary hypertension, which is here considered; where, in fact, the high blood pressure itself constitutes the most significant sign.

The symptoms which are associated with high blood pressure may be summed up as follows:—

Fullness and throbbing in the head.

Headache, Flushing, Giddiness, Insomnia, Palpitation.

High pressure pulse, Whip cord arteries, Accentuated aortic 2nd sound. Epistaxis.

The patient is often plethoric and well nourished.

The systolic blood pressure in cases of simple hyperpiesia varies from 170–200 mm. When associated with secondary contracted kidney or chronic nephritis it may rise as high as 220–300 mm. of mercury.

Observations on Normal Blood Pressure in Tea Garden Labourers

Now I like to enumerate my observations on blood pressure in a group of 200 selected people of a Tea Estate in Upper Assam.

Formerly I was inclined to think, like others, that the blood pressure of tea garden labourer stands at the same level or slightly below the average middle class Indian people. I also asked the view of many of my colleagues but could not come to any definite conclusion because nobody put much importance upon this matter, probably due to the belief that the labourers are not prone to high blood pressure and partly because the condition is unrevealed merely from signs and symptoms which are very often obscure and thus neglected by the patients and overlooked by the physicians. I am also in doubt if any Indian Research Institution or Life Insurance Company has made an effort of determining the average Indian systolic and diastolic pressure. The table contained in every book, as I have noticed, is borrowed from the European or American authors. It would not be wrong to suppose that the average systolic and diastolic range of the Europeans would be slightly higher than that of the Indians comparing their physique, habit, diet and mode of living.

The following table gives the average systolic and diastolic range of 200 tea labourers, male and female. These are divided into 10 groups according to their ages, taking 20 people in each group.

To facilitate comparison another table has been shown which was published by the American Institute of Medicine, New York.

Savil states that a simple rule is that a systolic blood pressure should not exceed 100 plus the age.

These observations show that some of these people possess a very high systolic and diastolic pressure, a few of them carrying on their daily labour without any appreciable symptoms, while a few others complain of giddiness and palpitation on slight exertion. It is also quite evident that the blood pressure of tea garden labourers is not always lower than the middle or high class people though the latter are more frequently found to suffer from hyperpiesia. Why they are not detected and diagnosed so far may be due to the incapacity of the labourers to explain the nature of their complaints, and also perhaps to inadequacy of the proper instruments in tea garden hospitals. So it is no wonder that almost all the cases pass out undiagnosed or wrongly nomenclatured as Debility.

Table of Blood Pressure Readings on 200 Labour Force Males and Females

Age Group	No. of persons observed	Systolic range in m.m. of Hg	Diastolic range in m.m. of Hg	No. of persons observed	Average pulse pressure
15-19 306	17 1 2	110 to 120 128 95 Av. 115	65 to 80 55 Av. 72	18 2	43
20-24	16 2 1 1	105 to 130 100 136 140 Av. 117	70 to 80 60 to 65 100 Av. 75	13 6 1	42
25-29	18 1 1	100 to 130 134 138 Av. 115	70 to 80 60 90 Av. 75	12 4 4	40
30-34	14 6	110 to 130 100 Av. 120	70 to 80 100 90 60 Av. 75	15 1 1 3	45
35-39	16 1 3	110 to 135 140 100 Av. 122	70 to 80 90 Av. 75	16 4	47
40-44	18 2	115 to 135 105 Av. 125	70 to 90 Av. 80	20	45
45-49	16 4	110 to 140 160 Av. 125	70 to 90 100 60 Av. 80	18 1 1	45
50-54	15 3 2	115 to 140 160 100 Av. 127	70 to 90 100 Av. 80	19 1	47
55-59	11 3 5 1	115 to 140 100 165 200 Av. 127	70 to 90 100 65 Av. 80	17 2 1	47
60-64	17 1 1 1	120 to 150 190 160 105 Av. 135	80 to 90 100 110 65 Av. 85	13 4 1 2	50

Av. = Average.

I do not intend to describe the treatment which is liable to be unsatisfactory until a definite cause is found, but no progress is made by assuming that toxæmia is the cause, though anything faulty should be rectified.

Acknowledgment

I am indebted to my chief Dr. F. C. McCombie for his valuable advice and encouragement in making these observations.

My thanks are also due to Mr. R. MacDonald, the manager of the garden, for his help and encouragement in this matter.

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Technique of Irradiation

Dr. P. M. Mehta, M.D., M.S., F.C.P.S.

(Director, Solarium, Jamnagar)

A very important factor in ray therapy is the angle at which the rays strike the patient. They are most effective when they fall on the patient perpendicularly. If they fall at any other angle, there is diminution of intensity which must be compensated for by a longer exposure. This is according to Lambert's Cosine Law which says that the proportional part of light absorbed by an absorbing medium is dependent on the intensity of the incident light but also varies with the angle of incidence.

The maximum penetration of radiant energy is achieved when rays fall perpendicularly on the surface. If rays fall obliquely, their penetration will be crosswise and so they cannot reach the same depth. This point is therefore of vital importance specially in case of short ultra violet which have very low penetration.

The benefits of treatment may be missed if this small but essential point is not kept in mind.

Helio therapy has this great advantage over artificial therapy, that the solar radiations are parallel so that once the patient is brought into a perpendicular position with regard to them, they will strike the whole body with equal intensity. In case of artificial lamps the intensity is greatest in the centre, diminishing both ways markedly as we recede from the centre.

Technique of treatment varies according to the source of light and according to whether the treatment is to be general, regional or local. Special arrangement has to be made where a number of patients are to be treated simultaneously. The moderate temperature must be maintained in the room where the treatment is to be given; it should be well ventilated and at the same time protected from strong currents of air.

Sunlight Treatment

This treatment is regional or general. Finsen used sunlight for local treatment of lupus but as better and more convenient artificial apparatuses are now available, it is no longer used for local treatment. The chamber for treatment must be at a sufficient height to receive sunlight, unobstructed and to be comparatively free from dust particles. The windows in the chamber must be so arranged that the treatment bed can be made to face the sun at the time of treatment. The treatment bed should have a contrivance to revolve so that it can be adjusted to receive sunlight perpendicularly. The intensity of sunlight must be raised to two or three times by means of concentrators. The energy received must be above two to three calories per square centimeter per minute for efficient treatment of total sunlight. For general irradiation, the patient must be made to lie on the bed stripped of all clothing. In case of regional treatment, other parts must be protected. Eyes should always be protected by goggles and if the treatment is a prolonged one, there should be some arrangement for cooling.

As all solar radiations are used in this method, it is called total sunlight treatment. When infra red, visible or ultra violet radiation is to be given alone, suitable filters must be used. The special advantage in the helio

therapy is that a simultaneous treatment of different radiations can be given; one part of the body may be exposed to total sunlight, the other to ultra violet or infra red.

Artificial Light Treatment

The question of distance is of much importance as the source of light is very near. Treatment may be general, regional or local. General ultra violet irradiation is best done by exposing the whole body to quartz mercury vapour lamp, with a long concave reflector. The lamp should be kept at a distance of 30 to 40 inches irradiating the patient from the side. It is not safe to place the lamp just over the patient. Eyes of the patient as well as of the attendants must be protected. This will be an ultra violet bath and so the dose must be very mild. Such light baths can be given to several patients simultaneously by fitting the chamber with several ultra violet lamps in the ceiling and the walls. This method is specially useful in case of children who can play about in the room while receiving the treatment.

Regional ultra violet treatment can be given by quartz mercury vapour lamp or polymetallic carbon arc lamp. Instead of exposing the whole body at a time, a limited portion or region of body surface is irradiated. A larger dose can be given. For this treatment the ultra violet lamp can be kept at a distance of 30 inches and the arc lamp at a distance of 15 to 20 inches if amperage is 10 to 20 and 20 to 30 inches if amperage is more than 20.

Local ultra violet treatment can be given by Kromayer lamp, cold quartz lamp or by high frequency electrodeless lamp. General irradiation mercury vapour lamp or polymetallic carbon arc lamp can be utilized for local treatment with proper screening and applicators. Cold quartz lamp is the best for irradiating body cavities as it is cold and ultra violet rays are emitted throughout the length of the applicator. The lamp or applicator should be applied directly on the surface or kept at a distance of one to two inches from the part to be irradiated. Special quartz applicators should be used if the treatment is to be given in body cavities. Quartz plates should be used if compression is desired and quartz lenses for concentration.

General infra red irradiation can be given by means of a powerful tungsten lamp with a reflector in the same way as the general ultra violet irradiation. The distance may be 12 to 36 inches. It depends upon the power of the lamp and the best guide for distance will be that the patient feels a pleasurable sensation of heat and not a painful or burning sensation.

It is also given in a cabinet in which the infra red generators, luminous or non-luminous, are placed on all sides and the patient is made to sit or lie in the center. Care should be taken specially in obese people that no part of the body is too near a lamp. A severe burn might be caused. There is no risk of overdosage. Caution should be observed in prolonged treatment if the part irradiated is anaesthetic or with poor blood supply.

Regional irradiation is given either by means of an infra red powerful tungsten lamp with a reflector or by a series of small infra red generators, luminous or non-

(Continued at foot of next page)

Treatment of Granular Lids

Dr. K. Krishnamurty

(Ophthalmic Surgeon, Chodavaram)

The treatment outlined below is the simplest and it can be followed easily with most successful results even without the aid of an Eye Specialist.

Hitherto we had only copper, silver nitrate and bichloride of mercury as the only remedies for this dreadful disease. Now with sulphanilamide the whole outlook has been altered.

For purposes of classification of the various stages of this disease and corresponding treatment it is better to follow the classification of Dr. Maccallan's who is an authority on trachoma.

First stage: The lids are touched on alternate days with silver nitrate (2%) and washed with warm boric or saline lotion. At bed time sulphanilamide ointment (6%) is applied and massaged. This is continued for a period of 15 days to effect a cure.

Second stage: The lids are touched with silver nitrate (2%) or copper sulphate stick on alternate days and washed. Sulphanilamide ointment (6%) is applied both in the evening and at bed time and massaged. This is continued for a period of 15 to 20 days to effect a cure.

Third stage: Copper stick is used for touching instead of silver. In the evening and at bed time sulphanilamide ointment (6%) is applied and massaged. This is continued for about one month.

Fourth stage: Treatment as for the third stage is followed except when surgical intervention is necessary.

Treatment of Complications

Acute Bacterial Conjunctivitis: Silver nitrate touching and sulphanilamide ointment at bed time will do, or ointment consisting of sulphanilamide 5 per cent. and silver nitrate $\frac{1}{2}$ per cent. will suffice.

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luminous arranged in a specially designed cradle, tunnel or foot or hand bath. The carbon arc lamp with a red filter can be utilized for this purpose.

Local infra red radiation can be given by attaching a conical localizer to the infra red lamp or by inserting a red filter. The carbon arc lamp with proper screening and red filter can be utilized for local infra red irradiation.

Note:—Carbon arc lamps and incandescent sunlight Mazda lamps are used for general irradiation with total artificial sunlight. Distance of arc lamps should be 20 inches and of incandescent lamps 20 to 30 inches.

Regional irradiation with total artificial sunlight is best done with carbon arc lamps. Mazda lamps can be used for the purpose.

In local irradiation with total artificial sunlight, carbon arc with special filters is used for the treatment of lupus.

Polymetallic carbon contains a larger amount of ultra violet. In cases where more ultra violet is required with sunlight, these carbons should be used.

My special thanks are due to Dr. V. P. Trivedi, M.B., B.S., Medical Officer, Solarium for helping me in preparing this article.

Pannus: If the pannus is of recent origin sulphanilamide ointment will do. Within ten days pannus disappears. If the pannus is of long standing one, ointment consisting of sulphanilamide and copper citrate or sulphanilamide, atropine, dionine and yellow oxide of mercury will be very useful. The choice of the ointment depends upon the density of the pannus.

Corneal ulcer: The usual treatment by silver nitrate touching, atropine drops and boric fomentation will generally be useful. If there is no response with the above treatment the following treatment is adopted with best results:

To start with the bowels are cleared by mag sulph on the first day. Sulphanilamide tablets by mouth are given. For the first three days 8 tablets are given per day, then 6 tablets per day for the next three days, and then 4 tablets a day for the next three days. Along with the drug sodium bicarb three times a day is given to avoid toxic complication. Locally the eye is irrigated with warm saline, atropine and mercurochrome drops at frequent intervals. At bed time sulphanilamide ointment (6%) is applied.

After the seventh day when the acute inflammation subsides anti-corneal ulcer ointment consisting of sulphanilamide, atropine and dionine is applied for a period of seven days. After the fifteenth day sulphanilamide cum dionine cum yellow oxide of mercury ointment is applied and massaged for a period of fifteen days to dissolve completely all the opacities left behind (entropion, ectropion, trichiosis and symblepharon require surgical intervention). The treatment outlined above is the treatment adopted in my hospital for trachoma. I am indeed grateful to Messrs. South Indian Eye Laboratory for supplying me all the ointments for my clinical trial.

Case Reports

Case No 1: A young girl, aged 18 years suffering from 1st stage of trachoma since one month.

Treatment: Touched with silver nitrate 2% solution and washed with warm saline. Mercurochrome drops (1%). At bed time sulphanilamide ointment 6% was applied and eye massaged.

Cure was noticed within twenty days.

Case No 2: A woman of 35 years, 2nd stage of trachoma with marked granules and corneal ulcer.

Treatment: Silver nitrate touching on alternate days and boric wash; daily atropine and mercurochrome drops (1%) 3 or 4 times a day; in the evening and at bed time sulphanilamide ointment 6% was applied. After a period of fifteen days the lid condition improved and corneal ulcer healed. Then an eye ointment consisting of dionine, yellow oxide of mercury, and sulphanilamide was applied thrice daily and massaged. After one month the eye was restored to its normal condition.

Case No 3: A woman aged 30 years, a close relative of one of the leading doctors at Vizag, third and fourth stages of trachoma and complete pannus, symblepharon with complete loss of sight.

I thought at first to operate on her but later on I decided in favour of medical treatment.

Advised to take by mouth, cod liver oil $\frac{1}{2}$ ounce a day. She continued this for one month.

(Continued at foot of next page)

Modern Drugs

(5)

Dilantin Sodium**Dr. M. S. Arunachalam, L.M.P.**

Its chemical name is Sodium Diphenylhydantoinate and is analogous in chemical structure to a barbiturate, being a derivative of glycolyl instead of malonylurea. It is a white crystalline powder with a bitter taste. Its aqueous solution is strongly alkaline. The proprietary preparations are: Epanutin (P. D. & Co.) and Solantoin (Glaxo). It has been used in epilepsy since 1938.

History

Dissatisfied with the existing remedies for epilepsy Meritt and Putnam (1938) investigated a large number of compounds by producing epileptic seizures in animals (cats) by means of electrical stimulation of the brain with skull intact. They discovered that Dilantin sodium produced the greatest anti-convulsant and least sedative effects, and much superior to luminal (phenobarbitone). Subsequently they put this to test in epileptics and published the results of treatment of 200 cases in the *Journal of the American Medical Association* in September 1938. They selected only such patients who were subject to fits for many years and obtained little or no benefit from the usual treatment with bromides and barbiturates. They stated that this drug was "effective in controlling convulsive seizures in a great majority of patients who were not helped by other methods of therapy" but that it was "without doubt considerably more toxic than bromides and the barbituric acid compounds."

Mode of Action

This drug is more an anti-convulsant than a hypnotic. In fact, its feeble hypnotic effect is the reason why it is chosen in preference to luminal which tends to make the patients dull and drowsy whereas dilantin make them mentally alert and its anti-convulsant action more specific than that of luminal. It is slow in action and it appears that it needs to accumulate in the body before it exerts its full effect. It should be gradually introduced

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Locally: Morning—copper citrate (5%) ointment was applied. Evening—sulphanilamide (6%) and yellow oxide of mercury (2%) was applied and massaged. At bed time the same ointment was applied and massaged. After ten days I noticed the dry appearance disappeared, pannus began to disappear, the symblephran disappeared and vision slightly restored. The above treatment was continued for one month with excellent results both in vision and clinical signs. This is one of my cases which beautifully responded to the above therapy.

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without sudden withdrawal of previous medication; likewise it should not be suddenly withdrawn as this is known to cause a shower of attacks. Recently, it has been found that there exists a striking synergism between Dilantin and Luminal, so much so some workers recommend a combination of both these drugs as this is found to give far better results in *severe cases* than when used singly.

Toxic Effects

One of the greatest drawbacks of Dilantin is that the margin of safety between therapeutic and toxic doses is small and sometimes absent. It is certainly more toxic than barbiturates, and this limits its use only to severe cases of epilepsy. Some of its toxic effects are:

(1) Nervous and psychic reactions in the form of headache, tremors, insomnia, mental confusion and hallucination.

(2) Skin eruptions in the form of an itching rash, often accompanied by fever.

(3) Gastro-intestinal disorders chiefly due to gastric irritation set up by the strong alkalinity of the drug.

(4) Hyperplasia of gums similar to that seen in scurvy.

Its Use in Epilepsy

Donald Blair observes: The control of epileptic fits by the various anti-convulsants has met with only limited success. For each in turn great claims have been vaunted and great hopes held out, only to be followed later by comparative disillusionment. Ideally each drug should exhibit the maximum of anti-convulsant properties with the minimum of toxic properties; the better known drugs used in the control of epilepsy leave much to be desired in this respect. In these circumstances, the introduction in the therapeutic field of such efficacious anti-convulsant properties as those claimed for sodium-di-phenyl hydantoinate is bound to catch the eye of the medical world.

Dosage: Proper dosage is the secret of success in the treatment of epilepsy with Dilantin. It should be introduced gradually without the sudden withdrawal of previous medication. Butter remarks: Two capsules, each containing 1½ grs. daily may be useless; three daily may prove to be a perfect therapeutic dose; and four daily may produce pronounced toxic symptoms and signs. There is evidently a very small margin between the therapeutic and the toxic dose. Of the thirty-four patients under this drug, 9 required 4 capsules daily, 19 required 3 capsules daily and the remaining 6 only 2 capsules daily. Even in those patients who have been taking the drug for 11 and 12 months no increase of dose has been required and no signs of mental deterioration have been observed.

Blair, Bailey and MacGregor advise the following method of substitution: if the patient is previously on three doses of sedative, replace one dose by one capsule of Epanutin every alternate day. Thus by the end of the sixth day the patient will be on Epanutin only. If the previous sedative is being given four times daily, withdraw the fourth dose on the eighth day without replacing it by an Epanutin capsule. Epanutin is not increased beyond one capsule, t. d. s. until after the fourteenth day unless there is a marked increase in fits, as it is during this time that toxic symptoms are more frequent.

GONORRHOEA

*** DAGENAN - M & B 693 ***

"This drug can confidently be recommended as an almost 'specific' cure for gonorrhœa, and it is undoubtedly the most potent means of attack on gonorrhœa available at present." (Lees, 1940, Appendix III—Practical Methods in the Diagnosis and Treatment of Venereal Diseases.)

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DOSAGE FOR ADULTS

MALES: Six 0.50 gramme tablets a day (2,1,1,2) for seven days or four tablets a day (1,1,1,1) for two to three weeks—with or without lavage.

FEMALES: Four 0.50 gramme tablets a day (1,1,1,1 or ½ tablet 2-hourly) for two weeks, repeated after a fortnight's interval if necessary; local treatment confined to swabbing unless trichomonal infection is present. In cases of chronic infection it may be of advantage to delay administration of "M & B 693" until the onset of menstruation.

DOSAGE FOR CHILDREN**VULVO-VAGINITIS:**

0.25 gramme (to 0.50 gramme) four times a day for five days, repeated after a fortnight's interval if necessary. No local treatment of vagina or urethra.

OPHTHALMIA NEONATORUM:

0.125 gramme (1 children's tablet) powdered and suspended in milk, with a pinch of bicarbonate of soda, four times daily for the first two days and thrice daily for four days longer—together with saline irrigations of the eye.

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It is thus obvious that the correct dosage depends upon daily observation of the patient. The average adult dose is one to three capsules (1½ gr. per capsule) per day. The maximum dose per day is 6 capsules or 9 grains. For children ½ gr. dose is recommended, mixed with cream, thrice a day. It is best given before meals unless gastric irritation is present. Combined Epanutin and Luminal treatment is said to give better results than either used alone.

Results: Effect on frequency of attacks of *grand mal*, as observed by various workers may be tabulated as under:

	Merit and Putnam	Donald Blair	A. J. M. Butter
Complete relief	29 (49.1%)	23 (39.6%)	Not mentioned
Great decrease	14 (23.7%)	12 (20.6%)	20 (46.51%)
Moderate "	6 (10.1%)	5 (8.6%)	7 (16.28%)
No change	10 (16.9%)	4 (6.8%)	6 (13.96%)
Worse	Not mentioned	14 (24.1%)	1 (2.32%)

The patients under Dilantin appear to improve psychologically, being brighter, more intelligent, and less introspective and hypochondriacal.

There is unanimity in the view that the use of drug should be restricted to cases of *grand mal* of long duration with frequency of fits, and that because of the very narrow margin of safety it should not be employed in *petit mal* unless Luminal has proved fruitless.

Treatment of toxic symptoms: When toxic symptoms make their appearance, the most efficacious method to abort them is complete withdrawal of the drug. This done, there is usually a rapid disappearance of toxic symptoms. If in spite of toxic symptoms, however minor they may be, the use of the drug is continued, ataxia is bound to develop. It is worthy of mention that liability of toxic symptoms increase with dosage. Contra-indication to a return to Epanutin are (1) those cases with exceptionally severe toxic symptoms and (2) those in whom there was no good result by this treatment. If there is an excessive occurrence of fits after the stoppage of the drug, intramuscular injection of Luminal may often become necessary.

Conclusion: There are certainly many advantages in the use of Dilantin in epilepsy, particularly in *grand mal*, and thus it has come to have a definite place in its therapy. Its mode of action is, of course, uncertain. But provided its toxic symptoms are fully appreciated and suitable cases are selected for this treatment, Dilantin is a step in advance of the usual epileptic therapy. As the B. M. J. observes, the next step is to discover a less toxic derivative of hydantoin which has a similar anti-convulsant effect without any associated narcotic action.

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Western Astrology and Medicine

Dr. W. Schiwesheimer, M.D.

The Archbishop of St. Andrews, stricken with a disease which baffled the physicians of England, went to the Continent in 1552.

He begged for the aid of the mathematician-astrologer, Jerome Cardan. After erecting the horoscope of the prelate, by which the disease was discovered and cured, Cardan took his leave, according to Manly Hall, with these words: "I have been able to cure you of your sickness, but cannot change your destiny, nor prevent you from being hung."

Eighteen years later this churchman was hung by order of the commissioners appointed by Mary Queen of Scots.

This was in the sixteenth century when a new golden age of general as well as medical astrology began. Astrology which in thousands of years at no time had been entirely forgotten by humanity desperately searching for spiritual support, had flourished in Chaldea, Babylon, India, Egypt, China, Greece and Rome, and had been suppressed with the advent of Christianity. For centuries it had played an unimportant part until the irruption of the Arabs into Europe, in the ninth and tenth centuries, brought it back again.

Astrology soon was considered one of the noblest of the sciences. Every king, prince and duke had his court astrologer. Famous astronomers such as Tycho Brahe and Johann Kepler dedicated themselves to astrology. Kepler, who was General Wallenstein's astrologer, made for the year 1619, the famous prophecy of the six M's: *Magnus Monarcha Matthias Mense Martis Morietur*—The great Monarch Matthias will die in the month of March. Emperor Matthias actually died on March 20th of that year. The Church was always opposed to astrology, and an early modern scientist, Sir Francis Bacon, ridiculed it by saying: "Men mark when they hit, and never mark when they miss."

Medical astrology at times was considered the very center of medical knowledge, and at other times the height of charlatanism and humbug. It originated from the belief that the celestial bodies are concerned somehow with the welfare of the individual. Jastrow, in his *Story of Human Error*, mentions the misconception that the Deity, the planets, and the forces of Nature generally are concerned with the welfare of the individual man, and his conduct brings about their conduct as reward or punishment. This conception appears in all the discussion and study of the physical diseases, but it disappeared as an active force in diseases of the body long before it disappeared in the diagnosis and treatment of the diseases of the mind.

Babylonians and Assyrians gave the world the belief that the macrocosm of the heavens reflects the microcosm in individual man. Astrology passed from Babylon to Greece without, however, exerting any particular influence upon Greek medicine although in Hippocrates (and later in Galen's) works we find several hints at the value of astrology upon man's welfare, and they seem to be genuine.

According to their ideas, the seven heavenly bodies—the Sun, the Moon, and the five planets which can be seen by the naked eye, namely Mercury, Mars, Venus, Jupiter and Saturn,—correspond to the seven days of the week and the seven metals that were known at that time: gold, silver, iron, mercury, tin, lead, and copper.

In R. Campbell Thompson's monumental work, "The Reports of the Magicians and Astrologers of Nineveh and Babylon", the following sentences on medical astrology are quoted from ancient inscriptions: "If Mercury rises on the 15th day of the month there will be many deaths. An eclipse at the morning causes disease. If a halo surrounds the Moon and if Regulus stands within, male children will be born." Most acts of the physicians and surgeons of those days were regulated by the dictates of the astrologer. Astrology and the interpretation of omens merged into prognosis.

The priest, the seer and the physician in ancient times were frequently one and the same person. Prognosis and treatment of disease were influenced by the time of the onset of the disease in relation to the position of heavenly bodies.

Astrological Terms

These follow in the main the description of Camac. Two groups of heavenly bodies were observed: first, those that are always in the same place (fixed), usually in clusters. To these the name constellations (constella, grouped or clustered stars) was given. According to this theory there were about twenty-eight clusters in the North and sixty-four in the South. Between these was noticed a band of twelve clusters which was called the circle of animals or zodiac (from Greek *zodion*, dimin. of *zoon*, an animal). Each cluster had a name, either based on some fancied resemblance to a natural object or supposedly relating to the weather and agricultural conditions of the earth and corresponding to the months of the year. To each was also given a sign and these were known as the signs of the zodiac.

The second group of heavenly bodies were single stars which were not fixed, but which were noticed to "wander" and these were called the planets (from Greek *planai*, to wander). The earth was the center and about it the planets Saturn, Jupiter, Mars, the Sun, Venus, Mercury, the Moon wandered (Neptune, Uranus and Pluto were added by modern astronomy). The signs of the zodiac and the positions of the planets, with reference to the hour of an individual's conception, birth, onset of disease, etc. were the basis of what was later known as "judicial" astrology, and the interpretation came to be called "casting the horoscope" (*hora*, hour, season). The instrument used was the astrolabe (star taker), the forerunner of the sextant.

The following is a brief summary in tabular form of the connection of celestial bodies and parts of the human body, according to different authors in different centuries.

The therapeutic side of astrology is "very much undeveloped" as a London observer put it, but the course to follow is plainly indicated. Every planet and zodiac sign has its typical plants, metals and drugs. Such typical drugs, for instance, belonging to Jupiter are: Stannum, eupatorium, mentha, ginseng, iridin;—or to

Saturn: lead, aconite, belladonna, antimony, salicylate of soda, helleborus, hyoscyamus, conium, rhus toxicodendron, verbasum, Indian hemp, hydrocyanic acid.

The Chinese tried to develop the therapeutic side of astrology by surrounding an individual whose horoscope has been "light" and who therefore is prone to incurable complaints, with exorcising objects, giving him proper amulets to wear and proper medicines to swallow and by selecting for him auspicious days and hours.

General astrology as well as medical astrology are too cryptic and ambiguous, they have too many loopholes to be of practical value. A standard astrological work says that "a precise astrological opinion cannot honestly be rendered with reference to the life of an individual unless it is based upon a horoscope for the year, month, day and time of day plus correct geographical location of the place of birth of the individual."

H. J. Forman tells this amusing story which is evidence of this ambiguity. As early as the year 1179 many astrologers felt bound in virtue of their superior knowledge to send letters to all lands announcing a great cataclysm, the end of the world,—seven years hence, in 1186. The populations of Europe viewed with alarm the impending future. Even the Persian poet and astrologer, Anwari, predicted "a great tempest: for September 16, 1186 A.D." The conjunction of five major planets in the sign of the Balance, or Libra, on that night, was what prompted Anwari to his portentous prediction.

As it turned out, however, the night happened to be exceptionally calm, and Anwari was overwhelmed with ridicule for his forecast; but it was afterwards noted that Genghiz Khan, the chief of the devastating Tartars, was born on that night, and it was considered that Anwari foresaw a great storm, but misunderstood its nature. The Sun, Moon, Saturn, Jupiter and Mars, all in the sign of that one Mongol's birth date, was quite enough, declare astrologers, to signalize a major event, even a cataclysm. And to this day the advent of Genghiz Khan is still accounted one of the phenomenal events in human annals.

Arnold de Villanova assigns particular strength to each hour. This strength flows into different parts of the body, according to the position of the horoscope. Most important for blood-letting is the position of the moon; the best is the Cancer; the Crab. Moon + Saturn spoil the effect of medicines, particularly of laxatives.

Renaissance

During the Middle Age medical astrology was at times encouraged by universities and courts. A court physician of the fifteenth century was often an "astronomer royal"—a deviser of fortune-tellers' almanacs. At the university of Bologna, in the early fourteenth century, we meet with a professorship of astrology. Here is a modern counterpart: an Encyclopedia of Medical Astrology has been published in 1933, written by a medical doctor whose title is: Honorary Professor of Medical Astrology at the First National University of Naturopathy and Allied Sciences, Newark, N. J.

A unique copy of a "Calendar for Blood-Letting" (Aderlasskalender), printed at Mainz in 1462, has been

mentioned by Garrison. It is one of the treasures of the Fuerstenberg Library at Donaueschingen (Baden). These popular almanacs show the hold which judicial astrology (the *Lasstafelkunst*) has taken upon the people. In some of them a special figure, the "zodiac-man" (Tierkreiszeichen-Mann) indicates as in drugstore almanacs of more recent data, the parts of the body influenced by the different planetary conjunctions, the proper times and places for bleeding and purgation under each sign of the zodiac, with gloomy prognostications of the terrible diseases, wars, famines, and other pests which were to befall humanity under different ascendancies and conjunctions of the planets.

Almanacs and Calendaria

These contained endless tables of the best positions of the planets for various human activities: cutting the hair, drawing the teeth, taking a bath or a medicine, performing an operation, time for bleeding, etc. Particularly Saturn and Mars were suspected to emit deadly exhalations which infected the air, thereby causing the plague, small-pox, measles and other epidemic diseases.

When in the fifteenth century syphilis spread all over Europe, this pandemic was believed to have been produced by an unlucky position of the Scorpion. At all times, however, physicians assailed this unfounded belief in the medical effects of star positions; doctors such as Manardo who died in Florence in 1536. Some pictures of that period show the event of child birth in the living room while in the back-ground long-bearded men (physicians?) contemplate the starred skies.

It is said that astrology is flourishing richly in our times, as another means of escaping from reality, and when we see the number of astrological books many of which have gone through several editions—as well as of astrological magazines and departments in representative newspapers—we might well believe it.

The American Society for the Control of Cancer, but a few years ago, felt it both wise and necessary to issue this statement: "The strange superstition that there is a connection between Cancer, the sign of the Zodiac, and cancer, the disease, still persists, some people believing that because they are born under that sign they are predestined to die of that disease. This is not so."

Medical astrology has no real foundation in the modern world of science and art of healing.* This does not exclude, of course, that the attention we give to the physical influence of weather, atmospheric conditions, etc. on the human body, is greater today than it has been at any time for many centuries.

*It is very difficult to be dogmatic on this point. Modern Science has neither proved nor disproved astrology. Astrology originated in India and is even now universally believed. Ayurveda (Indian System of medicine) even as practised today, avails of astrology in a great measure.—Ed.

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MEDICAL NEWS

Our American Letter

Druggists in Tin Saving Drive

About 200,000 posters are on their way to 60,000 retail drug stores throughout the country in a nationwide drive to tell American consumers how they may co-operate to save tin for war purposes. Tin tubes aggregating some 6,000 tons were estimated to be on home medicine cabinet shelves and the objective of the drive is to conserve the twenty to twenty-five tons which consumers normally throw away every day. The posters designate the drug stores as official tin salvage stations.

Operating on a non-profit-making basis, the tin salvage campaign has enlisted the co-operation of manufacturer, wholesaler and retailer organizations throughout the pharmaceutical field. The text of the posters explains that the tin collected will be turned over for allocation by the War Production Board. At the drug stores, the tubes will be picked up by drug wholesalers and forwarded to Hillside, N. J. There, special tin-recovery and smelting equipment will be installed by what is to be known as the Tin Salvage Institute. The expenses in operating the plan will be borne by the Tin Salvage Institute. Although the W.P.B. will allocate the reclaimed tin, the metal will have a sales value. Out of the money so accruing, the underwriting organizations are to be reimbursed for the original costs which have been relatively small.

Philippine Lepers and Japanese Blockade

Six thousand lepers and their several hundred medical and non-medical attendants on the Philippine island of Culion, largest leper colony in the world, faced starvation these weeks unless the Japanese naval blockade was lifted to permit food supplies to reach the island. Culion is on the western edge of the Philippine archipelago, 180 miles south of Manila in the China sea. Its sole inhabitants are the lepers and their attendants, a number of whom are Americans, including Dr. H. Winsow Wade, medical director, and his wife.

Perry Burgess, the president of the Leonard Wood Memorial, the laboratories of which are on the island, recently disclosed the colony's plight. The island of Culion is extremely arid and cannot support at all its population. Some of the colonists there have fishing boats, but the inhabitants have relied for their staple foodstuffs of fish and rice mainly on outside fishermen, mostly Japanese who furnished the supplies on contract. Mr. Burgess has sought the aid of the Red Cross to get relief to the inhabitants of the island. The Red Cross has made a request to the Japanese Government through the Swiss Government for permission to purchase a cargo of rice and send it to Culion island. Vital medical supplies, before the war, were ferried to the island from Manila.

In 1632, according to Time Magazine, the Shogun of Japan, then busy extirpating Christianity with fire and sword, loaded 134 "converted Christians" on a ship

and sent them to the Spanish missionaries in Manila with a letter saying: "If it is converts you want, begin with these." They turned out to be lepers, and soon spread the disease. Before 1632 there was no leprosy in the Philippines.

According to Dr. E. R. Kellersberger, General Secretary of the American Mission to Lepers and founder of the Bibanga Leper Colony in the Belgian Congo, there may be a marked increase in the incidence of leprosy as the result of the present war. War generally means overcrowding and poor and inadequate food,—and these are precisely the condition that help the spread of any disease. For lack of detailed statistics there is no exact way of telling whether or not leprosy is spreading in the United States. Probably it is not,—because the disease flourishes best in humid tropical or subtropical climates. Dr. F. A. Johansen, Carville, La., stated that, as an important public health problem, leprosy in this country is limited to three states, Louisiana, Texas and Florida, where endemic foci exist. In the Federal Leprosarium at Carville, La., the total number of lepers was 382 in December of last year. There are perhaps 1,000 to 2,000 outside of the Leprosarium, most of them going about their business.

Lessons at Pearl Harbour and on the Bataan Front

In the crisis of the Japanese attack of December 7, United States Navy physicians and nurses, aided by assistants who rushed to their aid from Honolulu, cared for 960 casualties—in many cases terribly burned and wounded men—by working constantly for sixteen hours. By nightfall of that fateful day 90 per cent. of the casualties brought in had been treated although much surgery remained to be done. More than 60 per cent. of the injuries were due to burns. The majority were "flash burns" to which the flesh had been exposed only a second or so. If sailors had worn full length trousers and shirts with long sleeves they would have suffered only minor burns.

Three types of treatment were used for burns: (1) large dressings were dipped in a mixture of mineral oil and sulfanilamide or sulfathiazole and applied directly to the burned surfaces which permitted the oil to act as a soothing lotion while the sulfa drugs prevented the development of infections; (2) bandages were dipped in gun tubs filled with tannic acid solution and applied to burned areas; (3) tannic acid jelly was rubbed gently over the burned areas.

Large doses of sulfathiazole were administered orally to help to keep off danger of infection from burns at a minimum. Sulfanilamide powder was found to have a tendency to cake over the wound surfaces and its use was discontinued. In a report, Dr. Perrin Long, of Johns Hopkins Medical School, who was on a mission to Hawaii at that time, pointed out that sulfa drugs plus good organization that gave the wounded prompt attention, performed wonders. Even among men whose wounds had been contaminated with the fertilized dirty soil of Hickam and Wheeler Fields, and who had not their wounds cleaned out by debridement for twenty-four hours, not a single massive infection was found ten days later. Not a single loss of arm or leg was necessary

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CONTENTS

Leading Articles	Page	Page
Under the Anvil	45	Indian Medical Council and its Utility—Dr. S. C. Anand, M.B., B.S., I.M.S. (Retd.)
Bullying Tactics	46	Association Notes
		47

Under the Anvil

It looks to us somewhat unpropitious that Mr. Kazmi's Bill to amend the Indian Medical Council Act of 1933 is proposed to be put under the anvil of the September session of the Central Legislative Assembly, because it was in this month in the year 1933 that this inequitable Act was placed in our Statute Book.

This superstitious belief of ours justifies itself or not by the answer to our question: Where is the need to circulate this Amending Bill for public opinion and criticism?

The Government must be already aware of the universal dissatisfaction which this Act has engendered in the profession, and for the last nine years it has been urging on the former either to end or mend this Act. Every year, some member or other of the Central Legislature has been giving notice to amend it in the same way as Mr. Kazmi is doing once again this year. Such notice either died in the ballot box or was shelved by parliamentary devices. There has been a small wave of common sense and good fortune this year in so much as the Government have condescended to take notice of this Amending Bill, but instead of settling this problem, which is hanging fire for the last nine years, by indicating their willingness to do so, they are, in our view, unnecessarily wasting time by calling for public and professional opinion once again despite the repeated flow of it for the last one decade. It is just like the case of a man who says he is blind because he does not see the stars by day-light. Suspicion and superstition do not fill our souls with any new enchantment, and but show that the Government are inclined to wobble again in this vital matter.

We are not disposed to indulge in optimism because the circumstances do not by any means warrant it. If the Government had felt that the Indian Medical Council Act has done the greatest injustice to the greatest number of practitioners in our country, they would not have adopted this policy of evasion and excuse by again submitting the Bill to amend the Act for circulation to elicit public opinion. We wish we are wrong in our surmise.

A statute which pretends to save the honour abroad of about 15,000 medical practitioners but deliberately disgraces more than 60,000 practitioners at home is no statute at all. And this without in any way laying down the uniform minimum standard of medical education and qualification by which one can justify the red herring drawn across the trail. Mr. Kazmi's Amending Bill is one which aims to convert the present abnormal Act into a normal one by the restoration of the usual functions of a Medical Council which are:

- (1) To establish and to regulate the minimum uniform standard of medical education and qualification;
- (2) To establish a register of duly qualified practitioners.

It is the solemn duty of the legislature to set right the existing statute which has been shown and proved to be inequitable and which is a standing affront to the very self-respect of the profession. We hope that it would be not beguiled by the stock-in-trade arguments of vested interests as it unfortunately was when the Act was passed nine years ago.

Bullying Tactics

We understand that the Medical Council of India has warned our Universities against raising medical schools to the College standard without first providing sufficient equipment and personnel and that if this continues it would take action under section 17 of the Indian Medical Council Act by refusing the necessary recognition. This is nothing but bullying tactics to sabotage the establishment of a single standard of medical education, nor is there any justification, by facts or experience, for this *a-priori* dogmatism of the Council.

This warning assumes that the Universities are in a feverish haste to integrate medical school education, of which we see no inkling of evidence anywhere in any of our Universities. On the other hand, they are reputed for narrow conservatism rather than for broad liberalism in matters of education, particularly medical.

Really it seems to be more directed against the Provincial Governments some of which may be considering, by force of public opinion, to convert the medical schools into colleges. Here also, known facts do not warrant the scathingly censorious warning of the Medical Council. Bengal has set its face against a single uniform minimum standard. Punjab is blazing its own trail without her University's favour. Bombay is nowhere in this new picture. Assam, Bihar, Orissa and Central India are beyond the offing. Madras and the U. P. have already conformed to the regulation. Where then, may we ask, is the urgent need to issue a warning in this manner? It is obvious that the Medical Council of India has something behind its sleeve and that its own October 1940 resolution and recommendation is a mere eye wash to placate the insistent opinion of the organized medical profession and to escape public condemnation.

Equipment and personnel, about which the Council lays so much stress, are not absolute terms to be defined by concepts of isolated persons or institutions. The history of recognition of the Andhra University Medical Degrees shows vividly how much and with what effect the Council could play on the meaning of words equipment and personnel, and thus virtually clog the wheel of

progress. Is it still the plea of the Council that the British Professors of Medicine are necessary for the maintenance of efficient teaching standards?

After all, a country could offer only such equipment and personnel as are possible to her under the prevailing circumstances. Any demand more than this would be utterly unjustifiable and unpatriotic. If equipment does not mean heavy investment in brick and mortar, and if personnel does not mean persons with British qualifications, we have enough of these and more to justify the immediate conversion of a large number of medical schools into colleges. The natural duty of the Medical Council should be to collaborate and not to come in conflict with the Universities or the provincial Governments in this matter. At any rate, it should not play the bully.

Indian Medical Council and its Utility

Dr. S. C. Anand, M.B., B.S., I.M.S. (Retd.)

Of the numerous indignities that a subservient nation has to suffer in the various spheres of human activity, the one that India was required to brook in 1933 was the foisting on her a legislation which brought into being a hitherto unwanted and now provenly futile body known as the Indian Medical Council. While in the political arena the behests of the Whitehall must be complied with, in the field of medical legislation no less notorious a part was played by the General Medical Council of the United Kingdom. It started active agitation in 1930 by refusing recognition to medical graduates from India, on grounds of inadequate clinical training and want of acceptable standard of medical education. This resulted in an enquiry by Col. Needham, a retired officer of the Indian Medical Service who, as could only be expected, recommended as an essential prerequisite for recognition, the establishment of a central authority which could regulate medical education under the aegis of the General Medical Council. In the interests of the young and ambitious aspirants for higher medical education, the only alternative for the Indian legislator was to place on the Statute Book an enactment now known as the Indian Medical Council Act of 1933. Under this Act a Council was established with the dual function of establishing a uniform minimum standard of *higher* medical education for the various British Indian Provinces and of negotiating reciprocal relations with foreign countries. This august body has not up to date been given the powers of maintaining an All India Register, the one important function which similar institutions all over the world are required to perform, nor has it succeeded in eliciting General Medical Council's recognition for the qualifications granted by all the British Indian Universities, nor does its authority extend over the one third of this country, namely, Indian States. To add to it, the bulk of the medical

profession—the Licentiates—are outside the jurisdiction of the Council, though thanks to the efforts of Mr. Kazmi, a bill for their inclusion is on the anvil of the legislature.

While central registration is yet a far cry, reciprocity with foreign countries in the midst of a world war is also a pious wish. Raising the standard of medical education to a higher uniform level by converting the existing schools into colleges or giving effect to the Council's recommendations having financial implications, is no less an uphill task in the present circumstances, when all the revenues both central and provincial must, of necessity, be tapped for the war effort. These beneficent activities have naturally to take their turn after world conditions have returned to normality.

So much about the functions. One would naturally like to know about its finances. With no income of its own, the Council is solely dependent on annual grants by the Government of India. The administration of these funds is the concern of the Council subject to the general financial control of the donor. Huge sums doled out from the centre are sometimes spent, at other times misspent. A detailed check on the Council's activities, not being either desirable or possible, it sometimes indulges in luxuries which one can ill afford in these times. To mention only one of the several instances, the appointment of a retired officer as Secretary of the Council on a lavish four figure salary in 1937 and the recent decision to extend his tenure for another two years on the maximum of the scale, despite the physical disability which the advancing age naturally imposes on every living being, is a phenomena not easy for the sensible layman to comprehend. A body set up to regulate and improve medical standards should behave in such a fashion as to retain in its employ a superannuated Secretary, is something not easy to explain. It must have been for none other than medical reasons that the maximum age of 55 years should have been fixed for retirement from Government service. Even persons with specialised knowledge and valuable experience such as the Judges of the High Court are not allowed to stay on beyond sixty for the simple reason that age does tell on the mind and the body after a certain stage. It is curious, therefore, that a body consisting entirely of experts in the various branches of medicine should have thought it fit to give such a long rope of service to one who has even surpassed the maximum age limit fixed for the judges and should both in fairness to himself and the Council have long ago been ordered to complete rest under sound medical advice, yielding place to a much cheaper, but decidedly a more energetic and ambitious young man, who would naturally be more qualified and better equipped both physically and mentally for secretariat work. Should the suspension of such a dormant body be considered outside the domain of practical politics, the Government and the Council should as well consider the possibility of having a part-time Secretary till at least the duration of war. It is no less the concern of the Government as that of the taxpayer himself to see that public money is not thrown in such a wasteful channel when it is so badly required for strengthening the National War Front in so many directions.

ASSOCIATION NOTES

The Branch Secretaries would be greatly helping the Journal during these difficult times of paper scarcity if they could send only very brief reports of Branch proceedings for publication.—Ed.

24 Pargis (Bengal): (1) Monthly meeting was held on 23-8-41 at Dr. S. S. Sarker's Disp., Dum-Dum Jn. with Dr. S. S. Sarker in the chair. Nine members present.

After the proceedings of the meeting held on 13-7-41 were read and confirmed, the members unanimously passed the resolution on recruitment to Emergency I.M.D., and resolved to send a copy to the press, Provincial and General Secretaries.

Resolved that the members of the above Branch would observe the Anti-Indian Medical Council Act day on 20-9-41 proximo conjointly with the Calcutta Branch.

Resolved that the annual general meeting of the Branch be held on 12th October next.

Resolved that a special condolence meeting on the death of Viswakavi Rabindranath Tagore be held next Sunday.

Drs. P. S. Majumder and K. K. Sen Gupta were recruited as members of this Branch.

(2) The Special Tagore Memorial meeting was held on 31-8-41 with Dr. S. S. Sarker in the chair.

The members present observed two minutes' silence in homage to Dr. Rabindranath Tagore.

After suitable speeches, the following resolution was passed with members standing:

(a) "This meeting of the members of the above Branch places on record its profound sense of grief and irreparable loss at the demise of Viswa Kavi Dr. Rabindra Nath Tagore, one of the truest and noblest sons of India, a great seer and true friend of humanity, who, as poet, patriot and philosopher, and by his unrivalled genius and culture, enriched humanity to its lasting benefit."

(b) The Branch conveys its sympathy to his son and the members of the bereaved family.

(3) The Annual General meeting was held on 12-10-41 at Dr. H. C. Paul's house, Alambazar; Dr. H. C. Pal presided.

Minutes of the last meeting held on 23-8-41 and 31-8-41 were read and confirmed.

In the annual report the Secretary appealed for unity in the profession and stressed on the need for introduction of uniform minimum standard of medical education, facilities of higher training, redressing the grievances of licentiates in civil and military services, etc. There have been regular monthly meetings and the fund of the Branch was satisfactory.

Dr. H. N. Roy proposed to re-elect the old committee which Dr. K. L. Pal seconded and was carried unanimously. Drs. H. C. Pal—President; S. Sarker—Vice-President; K. K. Dutt—Secretary and Treasurer; S. N. De—Jt. Secretary.

The following members were elected delegates to represent the Branch at the next All-India Conference at Ahmedabad: Drs. K. K. Dutt, K. L. Pal, S. N. De, and S. N. Mitra.

Resolved that the contingent bill of Rs. 7-10-6 be submitted to the General Secretary for payment.

(4) Monthly meeting was held on 9-11-41. Dr. S. Sarker presided.

Proceedings of the annual general meeting held on 12-10-41 last were read for the information of the members.

The Secretary placed the appeal issued by the Prov. Secretary, Bengal, for information of the members and requested the members to respond to the same in the very best manner as the cause is both right and important.

It was resolved that the following resolutions be moved in the next annual conference and a copy be sent to the General Secretary for necessary action:

(i) Whereas the Indian Medical Council has lately recommended for abolition of the medical schools by 1947 and for creation of one uniform minimum standard of medical education and qualification, i.e., of degree course, and in view of the fact that there is no suitable facility for the highest training

of the existing licentiates, be it resolved that the 31st Conference of A. I. M. L. A., strongly urges upon the authorities for allowing the licentiates of standing of five years or more, to qualify as graduates of medicine after a short course of training and test;

(ii) Whereas the majority of the population in India live in villages who seldom readily obtain qualified medical aid and as the present system of rural public health organisation is none too satisfactory and meagre, be it resolved that the provincial medical acts be amended so as to enforce introduction of both preventive and curative measures combined in the rural public health service and qualified medical men with necessary equipments and medicines be provided instead of the prevailing sanitary inspecting staff and bare preventives.

Vizagapatam (Madras): Meeting held on 19-4-1942 under the presidentship of Dr. M. Adinarayanaswami Naidu. 5 members present.

The following resolutions were passed unanimously:

Resolved that Dr. M. V. N. Pathrudu of Vizag, and Dr. K. Krishnamurthy of Chodavaram be elected as President and Secretary respectively for the Vizagapatam District Branch for the year 1942.

Drs. Ramanamurthy, Adinarayanaswamy Naidu and Krishnamurti were requested to organise the local Branch to meet the medical demands of civil defence.

Advised all the licentiates of the district to join the A.R.P. Organisations.

Requested all the licentiates to make their dispensary a first aid post and to help the evacuees by giving them all necessary medical help.

Rajkot (Bombay): First meeting held on 14-3-42 under the presidentship of Rao Sahib Dr. Ballubhai E. Shah. Nineteen members present.

Proceedings of the last meeting were read by the Secretary and confirmed.

A case of heart disease was shown by Dr. J. R. Doshi to the members. Everybody took part in the discussion. The following resolutions were passed:

Resolved that this Branch most respectfully conveys its most heartfelt thanks to Col. M. P. Atchinson, I.M.S., for promoting R. S. Dr. C. G. Antani to the rank of an Assistant Surgeon.

Resolved that the members of this Branch congratulate R. S. Dr. C. G. Antani on his being promoted to the rank of an Assistant Surgeon which he rightly deserved and wishes him all success in his distinguished career.

All the members authorised the President to convey the above two resolutions to the parties concerned.

The President requested all the members present to prepare scientific papers for reading in the next meeting.

Dr. M. G. Vasavada gave a short summary of the annual conference held at Ahmedabad.

Meerut (U. P.): (1) Meeting held on 18-1-42. Dr. Babu Lal was in the chair. Five members present.

Proceedings of the last meeting were read and confirmed.

Dr. Hari Mohan Lal gave a detailed and interesting account of treatment of wounds and fractures in military hospitals.

Dr. M. L. Sharma gave a detailed description of the Ahmedabad Conference.

Resolved that Government be requested through the Prov. Secretary to change the designation of P. S. M. S. officers in the Jail manual from "Medical Subordinate" to "Medical Officer, i/c. of the Jail Hospital."

(2) Meeting held on 10-5-42. Dr. Ch. Hardeo Singh Varma in chair. Nine members present. The Secretary regretted his unavoidable absence due to being out of station.

The proceedings of the last meeting were read and confirmed and the following resolutions were unanimously passed:

(i) This meeting while appreciating the general appeal of H. E. Lord Linlithgow, Viceroy and Governor-General of India, for medical personnel and the appeal issued by H. E. Sir M. G. Hallett, Governor of U. P., to individual medical officers, most respectfully begs to bring to the notice of Their Excellencies that recruitment of Emergency I.M.S., only from amongst medical graduates with differential treatment meted out to Indian medical licentiates, who form the majority section of the qualified medical profession of India including the civil and the military services, appears to be an important factor in narrowing the scope of voluntary recruitment. The meeting most respectfully requests Their Excellencies to very kindly see that a favourable atmosphere is created by offering Emergency I.M.S. to medical licentiates like medical graduates and that (Indian licentiates recruited to the Assistant Surgeon, I.M.D. Indian Cadre) are offered the same pay and terms as offered to military assistant surgeon, I.M.D. (British Cadre).

(ii) This meeting disapproves and protests against the system of ten years' bonded service under penalty of Rs. 1,000 and with liability for military duty in and out of India in the case of members of U. P. Civil Subordinate Provincial Medical Service, as no such bond is required in the case of U. P. Civil Provincial Medical Service. Under cover of this bond Civil Subordinate Provincial Medical Service officers have been deputed to military duty on inadequate pay and terms.

The meeting requests the Government to rescind the bond and paras 377 and 378 of the U. P. Medical Manual and recruit medical licentiates of the U. P. Civil Subordinate Provincial Medical Service for military duty or Emergency duty outside the province on a voluntary basis with adequate and fair terms as offered to other civil services.

(iii) This meeting regrets to bring to the notice of the Government that in spite of various representations by our Association, and other organisations and in spite of the fact that the war is running its thirty-second month and has approached the borders of India and there is great need for medical personnel, the Government is still sticking to its century-old policy of differential treatment meted out to medical licentiates in the civil as well as in the military services despite the fact that licentiates are as much statutorily registered practitioners as are the medical graduates. It is further regretted that on the basis of racial discrimination, Indian licentiates are recruited as Assistant Surgeon, I.M.D. (Indian Cadre) on a pittance of Rs. 75/- with inadequate terms whereas Anglo-Indian licentiates are recruited as Assistant Surgeon, I.M.D. (British Cadre) and are offered a starting salary of Rs. 250/- rising to Rs. 1000/- with fair terms. This meeting while strongly supporting the resolution passed by the 31st Conference of the A. I. M. L. Association held at Ahmedabad in December 1941 regarding eligibility of medical licentiates for Emergency I.M.S. requested the Government to drop its policy of differential treatment and offer Emergency I.M.S. to medical licentiates also. It is further requested that pay and prospects of Assistant Surgeon, I.M.D. (Indian Cadre) be made similar to those of Assistant Surgeon, I.M.D. (British Cadre).

Burdwan (Bengal): Meeting held on 10-6-42. Dr. C. S. Chatterjee was in the chair. Ten members present.

Read and confirmed the proceedings of the last meeting.

The second item in the agenda *re.* the transfer of expert and specialist S. A. Ss. from medical institutions was considered and postponed.

Unanimously resolved that Dr. Kali Prassanna Sen of Calcutta be nominated as President for the ensuing Mymensingh Conference.

Resolved unanimously that Dr. A. N. Roy be nominated as Prov. Secretary for the year 1942-43.

Contingency bill for the months of April and May 1942 amounting to Rs. 2-7-6 was passed.

Karachi (Sind): Managing Committee meeting held on 4-6-42. Five members present.

Confirmed the minutes of the last meeting held on 15-2-42.

Considered accounts for the months of February, March, April and May 1942 and passed.

because of infection. Credit for this remarkable record is shared by the sulfa drugs and the efficient preparations.

Morphine "syrettes", ampules filled with morphine and fitted with sterile hypodermic needles enclosed in glass tubes, were valuable time savers.

The Herculean task of moving General MacArthur's forces to Bataan meant for the Medical Corps under Colonel Cooper: establishing base hospitals in the thick, malaria-infected jungles, bull-doing through 2½ miles of tangled brush, working while dive bombers were operating overhead. We know some details of this gigantic task by Life's reporter Melville Jacoby's cables from Corregidor. Bataan's open air base hospital is able to take care of nearly 3,000 patients. Trucks bring the wounded from the front to the first-aid stations. Americans and Filipinos, regardless of rank, are given exactly the same treatment and facilities.

The open-air treatment of anaerobic bacillus infection which causes gas gangrene is new and successful in Bataan. The infected wound is cleansed with a hydrogen-peroxide wash which liberates free oxygen, aiding the destruction of the bacillus. The wound is then left open with the muscles slit longitudinally by extensive incisions, exposing the deepest infected tissues. The use of the conservative surgery method in the Bataan jungles came by accident when the doctors ran out of serum. The only recourse then was amputation, but in a case of gas-gangrene infection where amputation was impossible, Lieutenant Colonel Frank Adamo inaugurated what he now terms conservative surgery and what he uses now with continued success and the saving of many limbs.

In a report of R. B. Cloward, M.D., Honolulu, on war injuries to the head, we find the remarkable observation that few of the patients with penetrating wounds of the brain were brought to the receiving station in an unconscious state. The majority of them had not even been unconscious after the injury but were able to recall everything that had transpired from the time they were hit until they arrived at the hospital. This was a most surprising fact to the doctors who saw the patients first. Patients with large gaping wounds in the frontal areas with considerable quantities of cerebral tissues oozing from the wounds were found to be conscious, co-operative, rational and able to give their identification. Most of the patients were in a state of mild shock with lowered blood pressure and pulse rates from 90 to 110.

Drugs and Vertigo

An effective schematic treatment for vertigo cannot be expected, there are too many different underlying disturbances. Whenever feasible the primary cause of vertigo should be rectified. But, according to a report of Soma Weiss, Boston, in mild cases of vertigo chloretone or chloral hydrates or bromides 0.75 to 1 gm. (10 to 15 grains) every four to six hours can be helpful. The barbiturates, especially phenobarbital, are usually but mildly effective. Of phenobarbital or pentobarbital 0.1 gm. (1½ grains) is given three to four times daily. There are patients with vertigo or Ménière's syndrome in whom the symptoms are aggravated by barbiturates.

For Ménière's disease a dietary regimen free from or relatively low in sodium has been proposed, in which elimination of sodium is enhanced by the addition of

ammonium chloride. Ammonium chloride is given in doses of 3 gm. (6 enteric coated capsules each 0.48 gm.) three times daily with meals, added to the diet. Sheldon and Horton claim that the intravenous administration of histamine is beneficial in the attacks of Ménière's disease. About 1.9 mg. of histamine phosphate in 250 c.c. of physiologic solution of sodium chloride was infused during a period of one and a half hours. This infusion was repeated on two or three successive days with some of the patients. A strikingly beneficial effect is attributed to histamine in Ménière's disease by these investigators. From what is known of the bodily effects of histamine and of its short persistence of action, Weiss points out however, it is difficult to understand the rationale of this procedure. The very fact that a beneficial effect in vertigo has been attributed to so wide a variety of therapeutic agents raises suspicion concerning their true efficacy. Many of the patients with vertigo are quite susceptible to psychotherapeutic influences.

Our Canadian Letter

Serum in Treatment of Poliomyelitis

N. Silverthorne, W. A. Hawke and A. Brown, Toronto, studied the efficacy of serum therapy in the course of the epidemic of poliomyelitis in Toronto in 1937. The patients were free from paralysis when serum was given to 45 alternate patients and 47 were not given 50 c.c. of convalescent pooled serum from paralytic patients infected years before. There was no significant difference between the two groups as to the time the treatment was given and the duration of symptoms. There was a slight but probably not significant difference among the severely paralyzed patients. In the treated group there were 7 patients with slight, 5 with moderate and 1 with severe paralysis; the respective figures for the control group were 6.4 and 4. The results of the study would suggest that serum in the doses given did not prevent paralysis.

Mass Immunization against Diphtheria

Beckwith reports the results of mass immunization against diphtheria in Cape Breton County where diphtheria has been a matter of concern for some years. The administration of plain diphtheria toxoid in three doses at intervals of three weeks on the mass immunization plan is a safe procedure. Three doses of plain diphtheria toxoid produce immunity to diphtheria as gauged by the Schick test. This is evidenced by negative reactions ranging from 18.8 per cent. in those with no toxoid to 89 per cent. in those with three doses, or, conversely, 74.5 per cent. positive in those who did not receive toxoid to 3.8 per cent. in those with three doses. Despite an increasing immunity noted with one, two and three doses of plain toxoid, only three doses can be relied on to produce immunity.

While no serious reactions were encountered in the 5,799 receiving toxoid at all ages up to twenty, it is probably advisable to test children over the age of twelve for sensitivity before proceeding with the administration of toxoid. All adults must be Schick-tested before toxoid is administered, for two reasons: (a) to determine the presence or absence of immunity, and (b) to deter-

mine whether there is sensitivity to diphtheria protein. If the latter exists, and the individual is susceptible for diphtheria, a special preparation of dilute toxoid is available for immunization. A community cannot be considered as secure against an outbreak of diphtheria if the child population especially those of the preschool-age group, has not been toxoided.

Sulfonamides—Intracranial

E. F. Hurteau, Montreal, inserted powdered sulfanilamide, sulfapyridine or sulfathiazole into one of two cerebral wounds made in cats. The other wound was used as a control. The operations were carried out under aseptic technic. The results obtained rule out any contra-indications to the use of these drugs in this manner. The drug was seen macroscopically or microscopically as late as twenty days. The drug even while present caused but a minimal focal foreign body reaction. There was no constant evidence of neuron destruction or glial reaction resulting from its application to incised cerebral wounds. Sulfapyridine was the slowest to be absorbed but could not be detected after thirty-four days; sulfathiazole could not be detected after seventeen days and sulfanilamide after eleven days.

Lack of Vitamin B₁

Tisdall, Jackson, Drake, Newman, Whiteside Miller and Edgar, Toronto and Ottawa, state that according to the dietary survey completed in Halifax, Quebec, Toronto and Edmonton, one of the most serious deficiencies found in Canadians is lack of vitamin B₁. As a deficiency of one member of the vitamin B complex is almost invariably accompanied by a deficiency of some of the other members of the complex, the Canadian's concern is not only with an adequate supply of thiamine but also with the other members of the complex. Whole wheat is the richest food source of vitamin B₁ and is also a good source of most of the other members of the vitamin B complex. As the Canadian people will not as a nation consume whole wheat bread, the problem of increasing the intake of the vitamin B complex resolves itself into its retention or restoration in white flour. With the information that the endosperm of wheat must be added to white flour and the co-operation of certain millers, a milling technic has been developed which results in the production of a flour similar in appearance to ordinary baker's white flour yet one which retains from 50 to 65 per cent. of the vitamin B₁ originally present in wheat and an increased amount of other members of the B complex. The use of this flour by Canadians would increase their daily dietary supply of vitamin B₁ alone by 100 to 150 units per person. If such flour was used generally in Canada in place of the ordinary white flour, many millions of dollars worth of the various members of the vitamin B complex at present discarded in the milling process would be saved for human consumption, and should prove to be a real factor in improving the health of the nation.

Our Indian Letter

Congress Medical Mission's Work

High appreciation of the services rendered at Dinapur by the Congress Volunteer Corps and the Congress Medical Mission has been expressed in a short official account just received by Dr. B. C. Roy from the camp commandants of the area.

Referring to the Congress Volunteer Corps and the Congress Medical Mission this official account says: "They started the work with five volunteers on June 3. After a few days the number greatly increased, reaching a maximum of 60 at a time. Now there are 34 volunteers working. They are rendering very valuable and splendid service to the refugees by (1) acting as stretcher-bearers, (2) as ward boys in hospital, (3) as male nurses, (4) as kitchen mate in the Marwari Relief Society, (5) as night watch, and (6) as escorts of patients and orphans to different institutions. This band of workers is doing their duty ungrudgingly at any hour of day and night and their services have been greatly appreciated by all and no praise is high for them.

"The Congress Medical Mission started work with four doctors, two sanitary inspectors, three compounders and three male nurses and a band of other assistants on June 11. Since their arrival they have taken over the management of the indoor wards except the infectious disease ward and are looking after some of the camps. They are doing good work and are working in close co-operation with Government medical staff. Since the 23rd June their staff has been increased by two doctors, one compounder, one male nurse and four hospital attendants. They are running an outdoor dispensary and also working as mobile unit in the camp."

Quinine Position in India

A quinine conference, convened by the Government of India was held on 11th July, Mr. N. R. Sarker, Member-in-charge of the Department of Education, Health and Lands presided. The conference, it is understood, surveyed the quinine position and was satisfied that it was not unsatisfactory. According to estimates there was sufficient stock of quinine in this country to last two and a half years.

Taking a long-range view, the conference decided to adopt a five-year plan for quinine during which period the use of quinine would be rationalised and its price would be controlled. The conference agreed that the Central Government would be the best agency to exercise this control. Efforts to intensify cinchona cultivation and production of quinine in India were also decided upon.

Medical Council Warns Universities

The Medical Council of India has warned Universities in India against raising medical schools to the college standard without first providing sufficient equipment and personnel. If this attempt continues, the Council further states, it will be obliged to take action under Section 171 of the Indian Medical Council Act of 1933 and withdraw the recognition of the ill-equipped colleges that may be set up by the Universities.

Medical Schools in Bengal

The annual report of the medical schools in Bengal for the year 1939-40 reveals that the total strength of the licentiate students in the various medical schools at the beginning of the session was 2,991 as compared with 2,980 in the previous session. The total number of new admissions in licentiate course during the year was 750 including 114 Muslims as compared with 730 including 81 Muslims in the year 1938-39. Number of students passing out in the final licentiate examination of the State Medical Faculty of Bengal in 1939-40 was 466 as against 364 in the previous year.

There was provision for post-graduate training of Sub-Assistant Surgeon in the Campbell and Dacca Medical Schools. During the year only seven District Board doctors took this training from the Dacca Medical School.

The conduct and attendance of the students of all the medical schools were generally satisfactory. There was no instance of any breach of discipline during the year under report except in one case, *viz.*, an unfortunate hunger-strike of the students of the Dacca Medical School. This was, however, satisfactorily settled in a short time.

The schools under report include the Campbell Medical School, Dacca Medical School, Lytton Medical School, Burdwan, Chittagong Medical School, Chittagong, Jackson Medical School, Jalpaiguri, Calcutta Medical School, Sammilani Medical School, Bankura and Jatiya Ayurbijnan Vidyalaya or the National Medical Institute, Calcutta.

The first six of these are State institutions and the remaining three are under private management.

But where is the need to continue to spend money on the schools whose alumni are not recognized by the Indian Medical School? There are already more than 10,000 practitioners in the province of Bengal most of whom are not prosperous and only a few could be absorbed in the subordinate medical service.

Hon'ble N. R. Sircar's Review of Medical Recruitment for War

The recall to Military duty of not only war reserve and supernumerary officers of the Indian Medical Service (Civil) but also of those residuary I.M.S. officers whose presence in the civil departments may not be essential from the point of view of war effort or to meet other minimum needs has been sanctioned by the Secretary of State for India.

Mr. N. R. Sarker, Member for Education, Health and Lands, announced this at a press conference. There were, he said, forty-one posts reserved for I.M.S. officers in the provinces such as Civil Surgeons and specialists in certain subjects, while twenty-eight other such posts were under the Central Government's control. The Central Government, he stated, had taken steps to recall as many of their men as possible and that the Provincial Governments had been asked to release as many as possible of the officers under their control. It now rested with the Provincial Governments to release these officers.

Mr. Sarker also announced that in order to meet the wishes of the medical profession a new scheme had now been launched for service in India only.

In reply to a question, a high officer of the Medical Directorate, who was present at the conference, explained that Inspectors-General of Prisons were not included in the category of residuary officers and he expressed the view that these Inspectors-General after several years devoted to administrative rather than to medical work would be of no great use as medical men in the army. Further the question of recall of these Inspectors-General was to be decided by the Home Department and not by the Health Department.

Rate of Recruitment to I.M.S.

Mr. Sarker said: "The rate of recruitment to the I.M.S. has been about fifty officers per month for the last few months. This is more than three times the average monthly rate achieved during the last war and as a matter of fact as against about 850 I.M.S. officers recruited during the whole of the last war we have already recruited twice that number during the present war. I purposely do not quote exact figures. But everything in the present war is on a much vaster scale than obtained in the last war and recruitment at the present rate will produce numbers far short of those required in view of the immense task that we are now facing. Balancing ultimate requirements and capacity to absorb doctors from the private profession it may be taken that we want some 600 doctors a month for the I.M.S. and the I.M.D. Together recent figures of intake have ranged between 50 and 70 a month for the I.M.S. and we hope in future to get some 50 a month from England. This leaves about 240 a month to be recruited over and above the present rate of recruitment to the I.M.S."

"As regards the I.M.D., after exhausting those who either as reservists or under the terms of engagement with their Provincial Governments were liable to be called up, we have been getting volunteers at less than half the rate at which they have been coming forward for the I.M.S. We want them at about ten times the current rate. In addition over 2,500 doctors are required for the civil defence purposes such as emergency hospitals and first-aid posts. It is hoped to find a large part of this number from those who are above military age or by part-time services of others who for some reason cannot undertake military service. There are about 14,000 graduate doctors and 27,000 licentiate doctors in the country. "Requirements of the army and the civil defence will mean some curtailment of the medical facilities available for the civil population but as a large part of the public resorts at present to indigenous systems of medicine, it will not mean any hardship."

Every Source Tapped

To meet this increased demand for doctors Government have tapped every possible source. War reserve and supernumerary officers of the I.M.S. (Civil) have been recalled to military duty and the Secretary of State's sanction has also been obtained for the recall of those residuary I.M.S. officers whose presence in the civil departments may not be absolutely essential from the point of view of the war effort or to meet other minimum needs. To release military doctors for purely military duties various expedients have already been adopted. Civilian medical practitioners above middle age are recruited for station duties in military hospitals. They are

being employed for anti-malaria work in cantonments and for recruitment duties. A dental branch of the I.M.S. has also been started to recruit dentists. There is also a women's branch of the I.M.S. Similar steps have been taken to supplement recruitment to the I.M.D. Civil Medical practitioners are taken to perform local duties in military hospitals. Assistant Surgeons in ordnance factories are being replaced by Civil Sub-Assistant Surgeons and technicians are being recruited to relieve Assistant Surgeons.

Concessions Granted

Various concessions have been given to make the services more attractive. Antedate of Commission is granted for professional experience equal to half the number of years spent in private practice subject to a maximum of five years, and some degree of antedate is also given for higher qualifications. There is a guaranteed gratuity of Rs. 2,000 on completion of the first year of service to those who qualified before January 1, 1940 and one of Rs. 1,000 in the case of others, with additional gratuity equal to one month's pay for each year of further service. Specialists are appointed direct to the rank of Major which carries higher pay of Rs. 800 p.m. Fifty per cent. of the permanent vacancies in the I.M.S. after the war are to be reserved for officers who take Emergency Commission. Provincial Governments have also sanctioned a number of concessions for medical men volunteering their services in the present emergency.

No Difference

There is no difference now between Indians and Europeans in terms of recruitment to the Indian Medical Service whether in India or abroad. They are treated alike in pay, allowances and gratuity and concession of antedate of Commission. Similar concessions have also been sanctioned for the I.M.D. In their case also antedate of Commission for professional experience and higher qualifications is granted. They get an emergency allowance of Rs. 125 and their designation has now been changed from Sub-Assistant Surgeon to Assistant Surgeon (Indian cadre). They start service direct with the Viceroy's Commission and now have greater opportunities for promotion to higher ranks. In short all reasonable concessions have been sanctioned and every source is being tapped to obtain recruits.

New Scheme for Service in India

To meet the wishes of the medical profession a new scheme has now been launched for service in India only. Doctors who volunteer for this, are recruited for services in the I.M.S. and get all the concessions allowed to those who volunteer for general service, the only difference being in pay which is Rs. 150 less at all stages. This difference is considered necessary to allow more liberal terms to those who by volunteering for general service undertake greater risk. This difference represents compensation only for agreeing to go for services overseas, if necessary. But for actual service overseas, there is the further attraction of overseas pay. Those who volunteer for service in India only can, if they so desire change over to general service. This scheme, it is hoped, will appeal to a number of persons who for various reasons were not willing to undertake service overseas."

Kashikhed Leprosy Centre

The following publication of the Village Uplift Committee of Kashikhed (Berar) is an excellent example

of well-directed propaganda in successfully effecting village isolation of lepers on a voluntary basis:

1. What is Kashikhed Leprosy Centre?

It is a centre of activity where all the villages in The Dattapur Thana have been surveyed for leprosy, progress of cases and their contacts are watched, treatment is offered to detected cases and to whoever comes from the neighbouring towns and an attempt is made to isolate infectious cases with a view to control the disease.

2. How many cases have been found and how many of them have taken treatment?

In all 1818 cases have been recorded out of which 571 are from this circle. Detail of these 571 are given below:—

Infectious	77	Non-infectious	404
Adults	432	Children	139
Male	362	Female	208

It should be remembered that many advanced non-infectious cases don't need treatment.

3. What do you mean by an advanced non-infectious case and why does he not need any treatment? I thought it is he who should be treated first.

An advanced non-infectious case is the deformed beggar who may be seen on the streets or villages going about begging. Some twenty years back he was one of the early non-infectious cases who laughed at treatment and did not avail of it. Now some of his nerves are destroyed as a result of which he has deformities. No treatment can revive these dead nerves nor can bring back the lost toes and fingers.

4. Don't you think that he should not go about spreading this awful disease?

He does not spread the disease because he does not give out the germs of the disease. There are beggars who might spread the disease but if you find a deformed leper who has the hairs of his eye brows and face growing, you may know that he is quite safe. But people are afraid of the above deformed lepers who also to excite pity expose their ulcers to the public.

5. So you think that the deformed leper need not be isolated. But please tell me what is the need of isolation when you can cure all lepers by injections?

We cannot cure all lepers by injections. In most cases say 60 per cent., all signs may disappear. But there are about 20 per cent. of cases who have the power of giving the disease to others. By treating them we make them less dangerous or devoid of danger but it takes time. During this time they infect those who live close to them specially children. Some years after some of these children may develop the disease and may give it to others. So goes the vicious cycle in spite of our treatment work carried out sincerely. Therefore such highly dangerous cases ought to be isolated as early as possible and need to remain isolated until they are declared to be free from infectivity.

6. But isolation work has been carried out in C. P. in big asylums for about fifty years. Can you tell me if any area or district have been made free of leprosy by this method?

My answer, I am sorry to say, is in the negative. The reason of this failure is due to the fact that some years back the deformed beggar lepers occupied most of the places in asylums. The work was more humanitarian than scientific. These non-infectious cases for a long time swallowed all the government and public charity. Cases who were infectious were left out in villages. The isolation was not selective nor was applied to any particular area.

7. What do you mean by selective isolation and how can it be applied to any particular area?

The taking away of all the infectious cases from an area which has been previously surveyed is called selective isolation as applied to a particular area.

8. Supposing in ten villages you have ten infectious cases and you isolate them, will there be no more leprosy?

There will spring out many new cases. You might root out all the thorny plants in your garden but next year some will again sprout out from the seeds fallen on the ground. Now these surely germinate during the season but seeds of leprosy germinate at indefinite periods extending from one year and even upto twenty years. Therefore if selective isolation has been applied to a particular area the contacts of infectious cases should be watched for at least twenty years. The contacts might have received the seeds in their body and they may develop the disease in future. Therefore they have to watch. If anybody else in the village develops the infectious type he too has to be isolated.

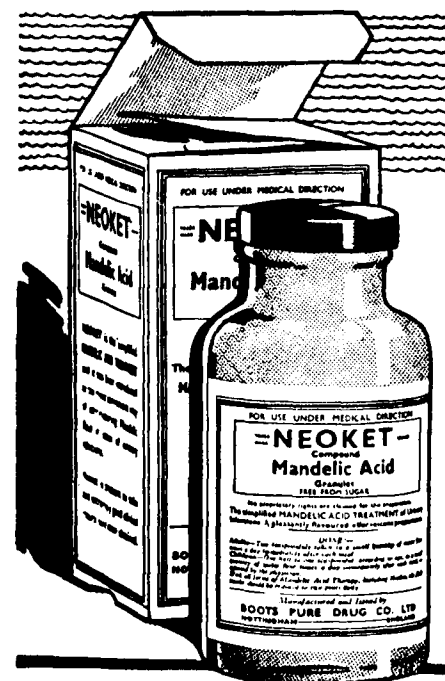
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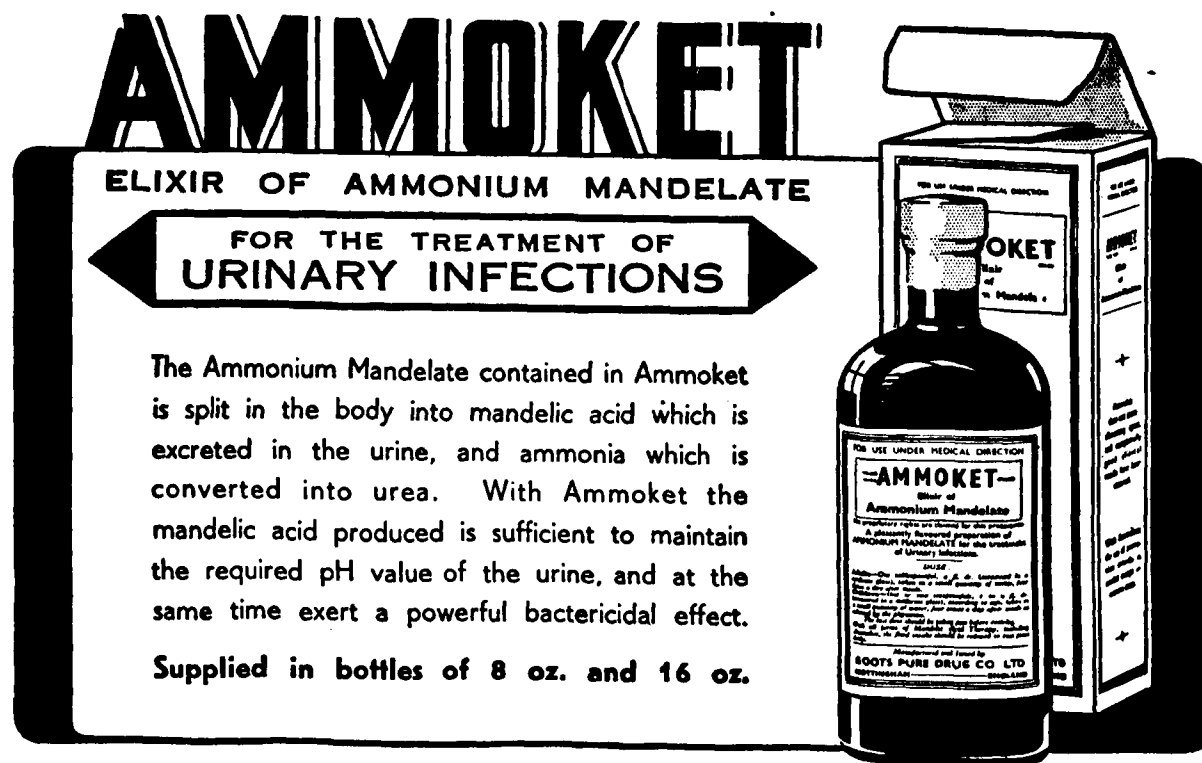
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ABSTRACTS

THE VIRTUES AND VICIES OF SULPHAPYRIDINE :

F. Croxon Deller, M.D., D.A., writes in the *Post-Graduate Med. Jour.*, March 1942 :

" We have here a group of drugs (*i.e.* the sulphanilamide group) which has offered marvellous healing powers . . . however, which possesses a definite, yet poorly understood, power to harm patient as well as organism . . . Considerable care and control in the handling and administration of these drugs is clearly necessary " (Mayer).

Domagk's demonstration, in 1935, of a new azo-dye, called prontosil rubrum, which possessed highly protective powers in the case of experimental streptococcal infections in animals, opened up a great vista of chemotherapeutic agents, the end of which we cannot begin to foresee as yet.

In 1938, Whitby showed that a pyridine derivative of sulphanilamide was active in relatively small doses against pneumococci of Types I, II, III, V, VII, VIII in experimental infections in mice—especially types I, VII and VIII, and that it was active also against the haemolytic streptococcus and the meningococcus.

It was shown by Whitby and McIntosh, that sulphapyridine *per se* did not produce a leucocytosis, or an increase in the opsonin reactions, or in the formation of specific antibodies when mice were fed on this drug alone. Therefore, the drug must exert its influence on the bacteria quite independently of the immunity of the body. Fleming showed that this action, however, was enhanced by the presence of a specific immune serum. Thus, it appears that the drug must act, not as a simple germicidal, but, by neutralising some metabolic or enzymatic function of the bacteria themselves.

The effective dose of the drug is proportional to its absorption, which, in its turn, is proportional to the method of administration.

The *oral route* has its maximum absorption when the drug is given crushed, and dissolved in a large quantity of water, on an empty stomach, with no constipation. Other methods of administration *per oris* are progressively less effective.

The *intramuscular route* is probably the one designed for total maximum absorption, and its only real drawback is the necessity of repeated injections into an ill patient—a factor not to be overlooked in any form of medication.

The *intravenous route*, using a diluted solution of the sodium salt, is certain and rapid, but, because of its extreme alkalinity (pH11), it is liable to cause severe vasomotor and respiratory depression (Nelson, 1941).

The *intrathecal route*, especially of value in the treatment of meningitis, again using a diluted solution, is the subject of some controversy, but, because of Fleming's findings regarding the increased efficacy of the drug when used with an immune serum, it appears better not to use this route for sulphapyridine but to leave the way open for its utilization by the specific immune serum.

Whichever method is used, once absorbed, the drug circulates in the blood, partly as free sulphapyridine, and partly as acetylated-sulphapyridine—the latter being quite inactive. The proportion of these constituents varies greatly from case to case, and it is not known as to what factor or factors this is due.

Excretion of both fractions is performed solely by the kidney. This has a great significance (*vide infra*).

Before considering the therapeutic application of sulphapyridine, it would be well to consider, briefly, some of the more common *toxic manifestations* as shown in the following table taken from Long's Summary :

This is a formidable list of diseases to be caused by a mere physician ! But these diseases should not be dismissed lightly ; four examples of these toxic manifestations have been chosen from the literature to illustrate very briefly the serious disasters that may occur.

9. Now after hearing you I feel that it is a hopeless problem. Who can watch them for twenty years ?

This is not a hopeless problem. It has been tried in other civilized countries and found successful. At one time it was advocated by Manu and was in practice in our country. This is a great sadhana. Don't you know that our Rishis spent whole of their lives in attaining particular objects ? Does not our Shastras testify to it ?

We workers should formulate a definite scheme covering twenty years while our supporters should try to revive this part of our ancient culture and back us for a long period.

10. Don't you think that it is the duty of the Government to do all these ? Can the public alone carry out this tremendous work ?

Is not the will of the people the Government ? Here in Kashikhed we tried to analyse our condition. When we found that we had many lepers we told the Government. The Government at once responded by sending a doctor for survey and treatment work. The Government has given us aid to build a dispensary and land to isolate patients. Even a child cries and reminds the ever watchful mother that it is hungry. So we must realise the situation first and tell the Government in what way it should help us.

11. Then what do you want to do in the way of isolation ?

We have a few patients who have already left their villages and waiting at other places to come into the land kept aside for isolation purpose. We have received a gift of Rs. 250 from Suganchandji Lunaavt, M.L.A. and Rs. 50 from the Amraoti District Council for building houses. We expect to receive more. We have started building a small cottage. The patient who are willing to come will bring their own food-grains. Some who cannot do so can cultivate the land we have or work in the fields of other people. But we hope the public may provide for a few patients and ultimately the Government will give us a capitation grant as they do for patient's asylums.

12. How much do you need for a cottage and for the support of a patient for a year ?

Our people here, because, of the caste system and other reasons do not like to live in a ward. We shall have cottages for single patients with one room, a verandah and a kitchen. Each cottage will have a kitchen garden. The cost of such a cottage is Rs. 50/- A better one with brick work and pucca one will cost Rs. 250/-. The maintenance of a single patient is as follows :—

For the cottage	..	..	Rs. 50
For his food	..	..	50 per annum.
Clothes	..	..	10 "
Medicines	..	..	5 "
	..	..	115 "

13. I am pleased to hear of your scheme. What can I do for you ?

Thank you, Sir. Here is a form of subscription. I shall be very much obliged if you fill it up. Please recommend this to your friends. I shall let you know from time to time of our activities and specially about the patient supported by you.

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TOXIC MANIFESTATIONS

Toxic Manifestation	Incidence	Time of Appearance
Nausea and vomiting	Very frequent	Early (do not give Sod. Bic.)
Dizziness	Common	Early
Cyanosis	Faint, common	Early
Fever	Uncommon	5-9th days usually; may be 1-21st
Rash	Uncommon	5-9th days usually; may be 1-30th
Hepatitis	Rare	Early or late
Hæmaturia	Common	1-10 days
Anuria with azotæmia	Not uncommon	2-14 days. (B.P. & fundi normal)
Acute leukopenia with granulocytopenia	Common especially children	1-10 days (give Vit. C)
Agranulocytic angina	Uncommon	14-25th days
Hyper-leucocytosis	In presence of hæmolytic anæmia	14-40th days
Mild hæmolytic anæmia	Common	Early and late
Acute hæmolytic anæmia	Uncommon	1-5 days

1.—**Fatal Agranulocytosis** after sulphapyridine.—A young woman was admitted to hospital with a severe microcytic anæmia, and sore throat with temperature she was treated with sulphapyridine, and, although there was some improvement of the infection, she gradually relapsed, the anæmia progressed, and she died after a four weeks' illness, during which time she had received 75 grammes of sulphapyridine. The only finding at autopsy was multiple small patches of fatty degeneration in the liver.

2.—**Fatal Anuria** after sulphapyridine in pneumonia.—Male, aged 35, with pneumonia; in all he received 10 grammes of the drug, yet, within 24 hours, he had pain in the lumbar region, with heavily blood-stained urine—two days later the urine contained a heavy crystalline deposit of acetyl-sulphapyridine. The blood urea went up to 155 mg.%. Decapsulation of the kidneys was tried but death ensued.

3.—**Cerebral symptoms** occurring with sulphapyridine therapy. In a series of five cases, two deaths occurred. There was persistence of cerebral symptoms, in spite of intensive treatment. There was a gradual return of the C. S. F. to normal, and yet the patient's symptoms became, either progressively severe, or returned after transient improvement.

4.—**Severe skin reactions.**—Out of 87 cases of gonococcal urethritis, three developed severe exfoliative dermatitis.

Consideration of these brief reports leads us to the conclusion that sulphapyridine is an extremely potent drug; further it appears that when an organ of the body has its function grossly deranged by some other disease process, it may not be able to withstand the assault of such extra toxicity.

The **therapeutic applications** of sulphapyridine can now be considered:—

A. Respiratory system

(1) **Lobar Pneumonia.**—It is in this disease that sulphapyridine has gained its full reputation; and deservedly so. But there are certain reservations to be made:

(a) In the typical lobar pneumonia in a young healthy adult it is probable that, given certain diagnosis and good nursing, aspirin could take the place of sulphapyridine; furthermore if the case was not responding too well, the giving of a specific anti-serum against the particular type of organism is not only sound but scientific in its application; coupled with this fact one is reminded of Fleming's findings on the value of immune serum and sulphapyridine when used together.

(b) It is becoming more evident that following the use of sulphapyridine the post-pneumonic morbidity rate is greater in such cases; e.g. instead of finding thick pus in a

post-pneumonic empyema with its attendant adhesions, one often finds a pale thin fluid without adhesion formation which prevents effective drainage being undertaken; or, there is delayed resolution in the pneumonic lung.

(2) **Other forms of "pneumonia."**—Typical lobar pneumonia is definitely becoming less frequent nowadays and many atypical forms are seen. In these cases sulphapyridine has a definite part to play, provided persistent use of the drug is not allowed because of temperature or cough. If the drug is going to be of value, it will have done its work during the first five days if given in adequate doses.

(3) **Upper Respiratory Tract.**—e.g. common colds and sore throats. There is no evidence of specificity in these diseases and sulphapyridine should not be given expectantly.

(4) **Otitis Media.**—Its use is of great value especially in the early stages.

B. Nervous System

In meningeococcal, pneumococcal and gonococcal meningitis, the use of sulphapyridine is definitely indicated; but there is the risk of overdosage with most unfortunate results (*vide supra*). Therefore, dosage must be controlled by the amount of pus in the C. S. F. as shown by repeated lumbar puncture. That sulphapyridine is not infallible, the following case will show:

Case 1.—A. M. aet. 28—History of bilateral chronic discharging ears since 12. When first seen there was a history of decreasing mental capacity with some vomiting, during the past four days; and earache in left ear. O. E. Temp. 102.4 and pulse 56. Positive Kernig's sign, neck rigidity. No papilloedema. There was no discharge from the ear. Lumbar puncture showed fluid under pressure, which was opalescent. Microscopically pneumococci were present and there were 400 cells per c.c., nearly all polymorphs. In view of vomiting, and pulse rate together, and with history of ear trouble, the diagnosis of pneumococcal meningitis, secondary to cerebral abscess, from the ear, was made. The left ear was explored the next day; some bulging of the dura, but no pus was found. During this time a total of sulphapyridine grammes 15 was given. On the fourth day the C. S. F. appeared more normal and as the patient was vomiting a great deal, the sulphapyridine was stopped. Three days later there was some papilloedema and nystagmus was present; coarse to right, and fine to left. In view of these findings, a second exploratory operation was performed, with no result. All the time his temperature was swinging between 99.4° in morning to 101.4° at night. Gradually the temperature mounted higher and a further course of sulphapyridine was tried (about 20 grammes). The patient began to have rigors, and, after one month's illness he died. At autopsy, in spite of the most intensive search, the only finding was of basal pneumococcal meningitis.

It is interesting to note that there was a persistence of the basal meningitis with a more or less normal C. S. F. towards the latter half of the illness. This is why serum was not used.

C. Urinary System

(1) **Pyelitis and Cystitis.**—There is no doubt that sulphapyridine is of great value in treating these infections, provided the urine is kept alkaline.

(2) **Gonococcal infection.**—Sulphapyridine is most efficacious in the treatment of gonorrhœa in both male and female. The drug can be used in gonococcal meningitis and in other gonococcal manifestations.

Case 2.—Mrs. X. aet. 59; husband has old gonococcal stricture. She complained of a sudden pain in the left elbow which became swollen and tender; and she had temperature, 100°. The surrounding tissues appeared thickened and there was an effusion into the joint. This was aspirated and gonococci were found in the fluid. The immediate exhibition of sulphapyridine plus immobilisation of the part, in plaster of Paris, caused complete subsidence in 10 days, and, now there is a perfect result.

D. Alimentary System

(1) **Peritonitis.**—General or local. It has been found of no value in this type of infection.

(2) **Pneumococcal peritonitis.**—This is one of the major indications for its use. Because the patients are nearly all children, fluid intake must be kept up and in order to prevent agranulocytosis and leukopenia, Vitamin C must be given at the same time.

INDUCTION OF LABOUR AND TRIAL LABOUR:

Aleck Bourne, M.B., F.R.C.S., F.R.C.O.G., writes in the *Post-Graduate Med. Jr.*, Feb. 1942.

It is well that from time to time we should re-examine our accepted ideas and methods in clinical medicine. In most cases we work on the basis of temporarily accepted hypotheses until such time as more evidence is available, either for confirming or destroying these theories. There are relatively few conclusions which are manifestly final, beyond which there can be no advance.

While, for example, the treatment available for a simple inguinal hernia has probably reached finality and is beyond further serious discussion, completely satisfactory curative treatments for most conditions may not be the ultimate that is attainable. Hysterectomy for multiple fibroids causing anæmia is, for certain patients, unquestioned as a satisfactory treatment, but this is only so long as we cannot control the cause and growth of fibroids. There may come a day when their further progress may be prevented and their atrophy induced by a form of endocrine therapy which will render operation unnecessary except in neglected cases.

A large number of accepted ideas can be shaken or shown to be within sight of rejection if subjected to sustained critical examination. Let us take an example from obstetrics.

Induction of labour is widely practised as a treatment for "disproportion." There is some reduction during recent years in the number of women who are treated by this method, but in some clinics and by some individual doctors it is still widely prevalent. The usual indication is the suspicion rather than a certainty, that while the pelvis is not large enough to transmit a full-term child of average weight of 8 lbs., it would offer no obstetric difficulty to a smaller baby, say, from 6 to 7 lbs. On the other hand, the pelvis is not sufficiently contracted to require delivery by Caesarean section. The clinical signs are: the head is high above the brim in a primigravida, and it is impossible to press it down into the brim even by firm pressure. Pelvic measurements are often said to be small, but internal examination of the pelvis is not often given its due weight or even any consideration in appraising its size. These signs may indicate contraction, but much more commonly they do not. For example, the head may be above the brim for a variety of causes. The inclination of the pelvic brim to the horizontal may be steeper than normal, approaching 90°, the head may be unflexed and there may be excess of liquor amnii. The shape of the brim rather than its size is probably operative, though we do not yet know its full value.

Failure to press the head down may be due to disproportion, but only in a few, as proved by the large number of "high heads" which descend quickly or spontaneously early in labour or even before labour. Lastly, external pelvic measurements are of almost no value in diagnosis of contraction, and certainly of no value whatever in estimating the minor degrees which could be treated by induction of labour. There could be no better test of the necessity for, or value of induction of labour, than the results.

If we imagine a condition of disproportion developing as term approaches, by the gradual growth of the head up to and then above the size which can safely be accommodated by the pelvis, there would, theoretically, be a moment when the onset of labour and delivery of the child would be accomplished without difficulty or danger, yielding the maximum weight of the child compatible with such safe delivery. That is the practical moment for induction. If it were delayed beyond this, there would be a mechanical difficulty which would risk the child's head by forceps extraction, if it were done before this moment the child would be unnecessarily small. The actual "moment" must be a period of several days and might well be a fortnight, for there are other factors which enter into the ease of delivery which blunt the sharpness of the "moment" for induction. For example, the force of uterine contractions will entirely alter the outlook for the child. Feeble contractions cannot mould the head and will cause delay, which, beyond a certain point, is dangerous for the child. Varying degrees of ossification of the head will also influence the capacity of the head for moulding. We can illustrate by pointing out that a woman who, on the verge of developing disproportion by January 1st, began labour on that day by induction followed by inertia would have a much more difficult time than the same woman entering labour two weeks later with strong contractions. Even if there were a well-defined optimum moment for induction, I maintain that it is

Case 3.—J. C. aet. 4½—of good and intelligent family—felt slight "tummy-ache" at 11-45 a.m. By 12-30 p.m. she felt sick, but insisted on eating a good lunch. She was put to bed and became flushed. Her mother palpated her abdomen, and, thought she felt some rigidity whilst the child slept. At 4 p.m. the temperature was 99° and the pulse 96, and there was some central abdominal pain. The abdomen felt relaxed, but the patient seemed rather flushed and bright-eyed. At 6 p.m. the pulse was 104 and there appeared to be rigidity in the R. I. F. By 8 p.m. the pulse was 112 but temperature only 99.8°. In view of these findings it was decided to operate on the child at midnight and anaesthesia was induced with paraldehyde p.r. followed by gas and oxygen. The abdomen was opened over the appendix area—this organ was normal, but there was a thin turbid fluid inside the abdomen, which microscopically showed pneumococci. She was given in all grammes 11 of sulphapyridine, and although she became very toxic, this improved on stopping the drug, and she made an uninterrupted recovery. She was also given vitamin C.

(3) **The Dysenteries.**—Sulphapyridine has a definite place in their treatment, especially when the disease has entered into a subacute or chronic stage, and especially in the Sonne type.

Case 4.—R. P. aet. 20. She stayed on a farm during the very hot summer, and drank much water and returned home with a high temperature and diarrhoea. The diarrhoea persisted and a culture showed the Sonne dysentery bacillus to be present. After three weeks of diarrhoea of varying degrees, she was given a total of sulphapyridine grammes 20 over four days. The diarrhoea stopped, and although her colon is irritable to certain things such as iron, she has made a good recovery. It was afterwards proved that the water drunk was infected and that there was a mild outbreak in that district.

E. Cardiovascular System

Sulphapyridine has been tried in subacute bacteria endocarditis but without success.

The **dosage of sulphapyridine** is governed by the necessity of bringing the blood concentration of the drug to its optimum concentration (10 mgs. %) as soon as possible, and, of keeping it there. Therefore, for an adult the usual dose is 2 grammes (4 Tablets), repeated in four hours, and then 1 gramme every four hours for 60 hours, and thereafter 0.5 gramme every four hours as long as necessary.—In this way the effective blood concentration is kept up.

For children the initial dose is 0.5 gramme—1 gramme followed by the maintenance doses as shown in the table.

Age	1-3 months	6-12 months	2-3 years	5 years
Dose in Tablets	½ Tablet 4 hourly	½ Tablet 4 hourly	1 Tablet 6 hourly	1 Tablet 4 hourly

In pneumococcal meningitis an even higher initial dose is recommended (Hodes, Gimbel & Burnett): for example, 1-3 grammes by mouth or nasal tube for young infants, and 6 to 12 grammes for older children or adults.

Whatever the dosage, *the fluid intake is most important.* It must be adequate, not only for the normal requirements of the body (1500 c.c. per day) but allowance must be made for *fluid loss by temperature, etc.*; and especially in children, with their higher basal metabolism, the fluid intake must be greater pro rata. This must be strictly enforced.

Antopol showed that, even with a single large dose of sulphapyridine there was a great danger of causing massive precipitation of free sulphapyridine in the nephrons and so causing great damage to the kidneys. Excess of fluid will help to guard against this danger.

Much stress has been laid upon the toxic manifestations of sulphapyridine—indeed, undue prominence has been given to them in this survey. This has been done deliberately because, firstly, they do constitute a very definite danger; and secondly, only by careful analysis of the results can the subject of chemotherapy be pushed further forward. To give undue praise because of one's enthusiasm for any new drug is to do great disservice to the cause of human suffering. Therefore, let us keep a more balanced view, for, surely, sulphapyridine is only one of the pioneers of its race.

beyond our clinical capacity to determine it on mechanical grounds alone. Nor will modern X-ray pelvimetry give us much help. It is true that the measurements of the various pelvic diameters can be given with considerable accuracy to within fractions of an inch by a skilled technique. Also the shape, which is perhaps more important, the width of the sub-pubic angle and the inclination of the brim can also be determined exactly. It is impossible, however, to make the same exact measurements of the foetal head. A large margin of error is inevitable. There are therefore two factors of major importance, which are unknown, namely, the strength of the uterine contractions and the size of the foetal head, while one factor, the size and shape of the pelvis, can be known fairly exactly. It is these unknown factors which are the reason for the unpredictable results of induction of labour. In the past far too much importance has been given to the size of the pelvis, that is *structure*, and much too little attention has been devoted to *function*, which is the efficiency of the uterine contractions and the adaptability of the foetal head. So long as the function in any forthcoming labour is unknown, so long will induction in a primigravida and most multiparae be an uncertain treatment.

We have been taught for so many years the importance of the size of the pelvis, with relative neglect of the value of the uterine function, that we have regarded delivery as almost purely a mechanical phenomenon. The incursion of radiology into obstetrics has tended to increase emphasis on the consideration of the measurements of pelvic diameters. Unless the deductions by the radiologist can be tempered by the clinical experience of the doctor in charge, as an obstetrician accustomed to watch and study uterine action, there will be an increase in the number of induced labours and Caesarean section.

The results of induction of labour are evidence of my contention. The prevalence of the operation in some maternity hospitals is extraordinary. Of 2,297 admissions during the year, there were no less than 170 cases of induction for "disproportion" and "post-maturity," or, in other words, 7.4 per cent. of all labours were induced. Further, of the 170 cases of induction no less than 136 were followed by normal spontaneous labour, and only thirty-four required forceps. It does not follow that all or even any of the cases of forceps delivery required assistance because of a "tight fit." The more likely reason was feeble contractions when the head was on the perinaeum, ready for extraction. If induction for these patients had been necessary and timed correctly we should have expected not only a greater incidence of forceps, but some actual delay during the second stage for necessary moulding to occur.

But the duration of the second stage is recorded as follows:—

Over 3 hours	..	2 cases	..	2.7%
From 2 to 3 hours	..	15 cases	..	20%
From 1 to 2 hours	..	24 cases	..	32.4%
Less than 1 hour	..	33 cases	..	44.6%

for all labours where the child weighed 7 lbs. or more.

A further fact is that in six cases (8 per cent.) the second stage lasted one quarter hour or less. The experiences clearly show that most of these patients either did not need induction on the date on which it was performed (between thirty-sixth to fortieth weeks) or else not at all. It is common knowledge that nearly every maternity hospital in this country could supply evidence of this kind which shows that nearly all operations for induction of labour for "disproportion" or "post-maturity" in primigravidae are unnecessary.

The results of induction on the mother's condition are usually not harmful. Labour may be some time in beginning after the interference and there may be inertia during labour, but serious after effects, such as infection, are rare. For the baby, it is different. Four of the babies were stillborn or died just after birth (6.7 per cent.). The stillbirth and neo-natal rate for the whole of the cases of normal labour for the year in this hospital was 0.9 per cent., though, owing to the difficulty of eliminating certain possible abnormalities from the records, it may be that this figure is not exact. It is near enough, however, to show that the child suffers a risk up to five times as great when labour is induced.

If, therefore, induction has no place in the treatment of suspected "disproportion" in primigravidae and most multiparae, what are the alternatives?

Where possible, so-called "trial labour" should be allowed. This is nothing more than waiting for the spontaneous onset of labour with arrangements ready, should they be needed, for completing delivery by Caesarean section, if the head is unable

to pass the brim after, say, two hours of good contractions after the membranes have ruptured. Clearly, only doubtful cases are submitted to trial labour. Where there is an obvious obstruction caused by the contracted brim or cavity, Caesarean section is performed as a deliberate operation. But the remarkable result of trial labour in the "doubtful" cases is that the patients deliver themselves normally in nearly every case. It is very seldom that trial labour has to be completed by the Caesarean operation. It seems, then, from this clinical experience, that spontaneous labour can be expected in nearly all doubtful cases of disproportion or, in other words, unless the obstruction is clinically obvious after the thirty-eighth week, normal delivery is almost certain. Some objections have been raised to trial labour. It is impossible to conduct it in a private house. The patient must be in a hospital or well-equipped home where an abdominal operation can be performed, if necessary. But in these days an increasing number of women are delivered in an institution, and it is not disturbing to the woman of to-day that she cannot be confined in her own home. It is also obvious that the doctor in charge must be able to satisfy himself of the prospect of engagement and passage of the head as labour proceeds, and is either competent to operate himself or call upon a surgeon, should it be necessary. Finally a word on the progress of labour in a doubtful case of disproportion.

We will assume that the woman is a primigravida at full term, and that the onset of labour finds the head high above the brim but not truly overlapping the symphysis. The measurements may be normal or reduced, but the internal palpation of the pelvis finds no marked contraction such as a very easily palpated promontory, or palpation of the whole length of the brim from the pubes back to the sacrum. Nor will there be a narrow cavity from side to side, a narrow sub-pubic angle, or an intertuberosity diameter that will take less than four knuckles of the examining hand. The head is probably flexed and the back anterior.

All these are favourable conditions. After the onset of labour the first event of importance is the time of rupture of the membranes. If this happens either at the onset or just after, that is before the os is three fingers dilated, it may mean that the occiput is posterior or that the brim is actually flat—enough to cause difficulty. But early rupture may have no important significance. If the head sinks into and through the brim before rupture of membranes, labour will end spontaneously. But if it remains high until the membranes have ruptured, it does not necessarily follow that there will be obstruction or difficulty. The two hours following rupture are of critical importance. But, again, no opinion can be formed unless the uterine contractions are strong. If they are infrequent, short, irregular and feeble, no force is being exerted on the head and therefore no prognosis of its descent can be made. If, however, contractions are "good," that is regular, frequent, strong and long, then the head should, and probably will, show signs of descent within two hours. The first change to be noted is an increase of flexion of the head. The forehead becomes more prominent and the occiput disappears from the range of abdominal palpation. If this occurs the head will almost certainly pass the brim. Sometimes the change of relation of the head to the brim is so sudden that it sinks almost with the escape of the liquor as the membranes rupture.

If, after two hours following rupture of the membranes, the head has not flexed and sunk into the brim under the influence of strong and regular contractions, then it is unlikely that the head can pass the brim, and labour should be terminated forthwith by a lower segment Caesarean section. It is important to remember that no opinion on the prognosis of a trial labour can be made until after the membranes have ruptured. The change at this point is often dramatically sudden. An apparently hopeless case of disproportion may, and often does, resolve itself into a quick and spontaneous delivery, especially in a multipara. In all cases of trial labour where it is possible that it must be terminated by Caesarean section, it is obvious that vaginal examinations should not be made lest infection be introduced.

Anxiety seldom arises in trial labour on account of real disproportion. The real difficulty is the absence of strong contractions. If, after the membranes rupture, the uterus acts feebly, and irregularly for some hours, there is little chance of the descent of the head, partly because the *vis a tergo* is deficient, partly because the head remains unmoulded.

It is generally true in obstetrics that a woman can safely overcome one handicap, such as minor disproportion; but she

cannot tolerate two handicaps—in this case a minor disproportion plus inertia. If, therefore, during a trial labour the head remains high in the presence of inertia which persists for some hours after the membranes rupture, the lower segment operation should be performed.

ARE PHYSICAL SIGNS WORTH WHILE IN LUNG DISEASE? C. Allan Birch, M.D., M.R.C.P., writes in *The Medical World*, October 31, 1941: I once heard a thoracic surgeon in North America when asked to talk to some students tell them if called to see a chest case to leave their stethoscopes at home. The physician whose clerks they were listening and shuddered at this heresy. But this surgeon's attitude to the stethoscope was shared by some physicians, too, and they could be seen using X-ray films instead of their stethoscopes to make their decisions.

We all agree that a complete report on the lungs cannot be given without an X-ray examination and that in many conditions the X-ray film has pride of place in making the diagnosis. Hence the present-day fashion of decrying the value of the stethoscope in lung disease. Whenever a new instrument arrives and tends to oust an old one the older members of the profession tend naturally to defend the latter and to attribute to it powers which it does not possess. The younger generation, on the other hand, praise the new instrument and try by its use to upset the teachings of the past.

The stethoscope was introduced in 1819 by a Breton physician, René Theophile Hyacinthe Laënnec. His first efforts to establish auscultation were met with much opposition, but he took much trouble to correlate the physical signs he described with actual diseases and eventually the method became very popular. Some stethoscopists were carried away by their enthusiasm and described new signs in addition to those of Laënnec, but without checking them against post-mortem findings as Laënnec had done.

There was a reaction to this, and we find Thomas Addison of Guy's in 1846 writing an essay on "The difficulties and fallacies attending Physical Diagnosis in Diseases of the Chest," in which he says: "Books and essays without number, and of great value, have been written for the purpose of adding favourable testimony to the merits of the stethoscope; to increase its utility and extend its application; whereas, so far as I know, not a single individual has deemed it right or desirable to pursue the opposite course, of expressly publishing to the world the manifold difficulties and fallacies attending its use. The publications alluded to, by the semblance of a too exclusive advocacy, have, according to my humble belief, placed the stethoscope and its pretensions in a false position; they have awakened in the minds of many a vague notion of infallibility; they have led the profession and the public to expect too much, and by suppressing or concealing the real imperfection of a favourite expedient, have put it in the power of hostile parties to inculcate the stethoscope for the errors of the stethoscopist. But if the works of even able and experienced writers have thus done injury to the cause of physical diagnosis and have furnished weapons of attack to its opponents, what shall we say of that very numerous class of persons who, with the most slender experience, mistake zeal for proficiency, and are perpetually falling into grievous and palpable error? The enthusiasm, the rashness, the bigotry and conceit of the exclusive stethoscopist have indeed, most seriously retarded the adoption and vitiated the claims of physical diagnosis, and have done more to discourage the students, to shake the confidence of the profession and to throw ridicule upon the stethoscope itself than the most inveterate hostility could ever have accomplished. They seem to look upon the instrument as all-sufficient; they rush at once to auscultation and percussion; they neglect or disdain to make those careful and minute inquiries which no sound and sensible physician ever fails to do, and thereby convert an invaluable auxiliary into what, in their hands at least, proves but an imperfect and treacherous substitute!"

Between the present-day contempt for the stethoscope in lung disease and the extravagant claims made for it by the physicians of last century there must be a middle path. In the words of Addison, let us "strip the stethoscope of extravagant and meretricious pretensions and admit what it will not as well as what it will do." We will consider also the other physical signs in the lungs in the same way.

Every practitioner ultimately discards some of the physical signs he learned as a student and comes to rely on a few whose value he knows from experience. He was taught to use the four

methods of inspection, palpation, percussion and auscultation. In practice the two latter take up most of the time of examination. Let us consider briefly the points of real value which can be obtained by these methods.

Inspection reveals such things as deformity of the chest, enlarged veins, the position of the apex beat and whether movement is symmetrical or not. Minor alterations in the contour of the chest are not now thought to have the significance formerly attached to them. Thus a careful analysis of the shape of the area above the clavicle in 153 healthy people showed that only 25.4 per cent. showed no depressions and were quite symmetrical. In tuberculous cases it was not found possible to correlate these depressions with the disease. In addition inspection may, of course, show features not directly concerned with the lungs, such as thyroid and lymph gland enlargement.

Palpation serves to confirm deficiencies of movement seen on inspection and will test vocal fremitus. In normal chests movement and fremitus vary in individual cases, but to be normal both should be equal on both sides. Careful palpation where the sternomastoid is inserted into the manubrium sterni may show deviation of the trachea. If present this sign may be of great importance. Thus the trachea and mediastinum may be drawn over to the affected side by fibrosis or pushed over by effusion and pneumothorax.

Some books devote more space to percussion than to all the other signs, and yet it is probably the least valuable procedure, particularly in early or slight disease. X-rays have shown that as a means of delineating organs or consolidated areas it is only moderately accurate, and it has been truly said that faith is necessary for successful percussion. The only finding of real value is dullness compared with the opposite side, but it must be definite dullness. If dullness is so indefinite as to be called "slight" it will probably be of slight value in diagnosis and particularly if it is unaccompanied by other signs. Often direct percussion of the chest with all the fingers of one hand will enable one to cover the lung fields rapidly and detect any gross dullness. One percussion phenomenon is of great value—the coin sound. One coin percussed against another held on the chest wall will show a characteristic "anvil" sound on auscultation when air under tension is present in the pleural space. Its absence, however, does not exclude a pneumothorax.

When we come to auscultation we find that confusion exists in books and in the minds of students because of the over-classification of too many signs. Indeed it has been remarked that there are two kinds of physical signs in the lung—those which fill the books and which exercise the minds of students and those actually used by the doctor in the diagnosis of his patient's condition.

All are agreed that in the normal chest on auscultation breath sounds should be vesicular and equal, vocal resonance equal and adventitious sounds absent. Nevertheless, the normal chest does show variations on auscultation. Thus because of the eparterial bronchus the right apex is relatively "noisy"—i.e., the breath sounds have a slight bronchial quality and vocal resonance is slightly increased. A few transient basal rales may be heard in bedridden patients and are almost a normal phenomenon and do not indicate disease.

The breathing normally heard over most of the lungs is vesicular. Bronchial breathing indicates solid lung tissue with patent bronchi and has as its characteristic that the expiratory sound is as loud and long as the inspiratory sound. The pause between inspiration and expiration is not of great importance. Bronchial breathing can normally be heard over the vertebra prominens and over the temporal and occipital regions of the head. Consolidation near a large bronchus may produce tubular breathing—an exaggerated form of bronchial breathing. When bronchial breathing is of low pitch it is called cavernous. It is usually localized and accompanied by whispering pectoriloquy which was Laënnec's favourite sign and it indicates a cavity.

Two other auscultatory signs are specially useful. An amphoric quality or musical or bell-like intonation added to cavernous breathing indicates a pneumothorax or a large cavity. The Hippocratic succussion splash occurs when air and fluid are present in the pleura or a large cavity (and also in the stomach or a water bed!).

It is in the realm of adventitious sounds that overelaborate classification has led to confusion. Most practising physicians use only four terms: rhonchi, rales, crepitations and the friction rub and some put rales and crepitations under one head simply as "moist sounds".

Rhonchi are wheezes and indicate narrowing of a bronchial tube as by spasm or secretion. If produced in a large tube they are sonorous or low pitched and if in a small tube they are sibilant or high pitched.

Rales are bubbling sounds produced by air passing through fluid.

Crepitations are crackles produced by separation of the walls of alveoli.

This simple classification into wheezes, bubbles and crackles is adequate for all practical purposes and more elaborate ones of historical interest can be discarded in practical medicine.

In some acute diseases of the lungs the value of definite physical signs cannot be gainsaid. In frank lobar consolidation dullness and bronchial breathing may be well marked but all agree that signs are occasionally indefinite and should a large bronchus be blocked by secretion the silence behind it may be misleading. A large pneumothorax will reveal itself through its physical signs by a small localized pneumothorax is usually missed on physical examination. The physical signs produced by a lung abscess may be far from diagnostic and simply indicate that a lesion is present whereas an X-ray film by showing a fluid level may put the diagnosis beyond doubt. A pleural effusion can usually be detected by its signs but after its partial removal any disease in the underlying lung is not easy to eliminate by stethoscopy. While it is true that large cavities may show the classical signs such as cracked-pot note, amphoric breathing and post-tussive suction, these signs should be regarded as medical curiosities and not worth while in deciding on treatment. Cavities should be diagnosed by X-ray examination before they are big enough to produce physical signs.

In acute respiratory disease it will be generally agreed that physical signs are worth while if only because accessory methods such as the X-ray are not usually available. Even so it may be the history and general appearance which point to the diagnosis and not the actual physical signs. Thus a child may show by its general appearance—pyrexia, grunting respiration, and respiratory distress—that it has pneumonia, and yet for a period of twenty-four hours or more definite physical signs may be wanting. Similarly, a patient may describe the typical inspiratory lancinating pain of pleurisy when no pleural rub is heard. This is now known to be because the pain is often due to a tension of the inflamed pleura rather than friction and so the stethoscope cannot be relied upon to produce diagnostic evidence of pleurisy.

It is concerning pulmonary tuberculosis that there is most controversy concerning the value of physical signs. Many of the signs detected by the stethoscope are those of advanced disease. The classical signs of cavitation, for example, are produced by large cavities. At the stage when treatment is likely to be successful cavities can only be detected by X-rays.

The relative value of X-rays and stethoscopy in the diagnosis of pulmonary tuberculosis has been investigated at Trudeau Sanatorium. One thousand cases were studied (264 minimal, 647 moderately advanced and 89 far advanced). When all physical signs were used, including palpation and percussion in addition to auscultation, it was found that physical signs showed as much disease as X-ray in 36 per cent. and less disease in 54 per cent. In only 8 per cent. of cases did the physical signs indicate more extensive disease than the X-ray showed. In 2 per cent. of cases the signs were on the opposite side to disease as shown by X-ray. When the same 1,000 cases were examined from the point of view of rales only versus X-ray the following figures were obtained. Rales showed an equal amount of disease as the X-ray in 14 per cent. and a less amount in 32 per cent. In only 2 per cent. did rales show more disease than X-ray, and in 51 per cent. there were no rales when X-ray showed disease. In $\frac{1}{4}$ per cent. rales were found on the opposite side to the disease as shown by X-ray.

These figures bear out what general experience would lead us to expect. If a patient has symptoms suggestive of pulmonary tuberculosis and no physical signs can be found, it is wrong to say that the symptoms are not due to tuberculosis. It is our duty to have the chest X-rayed. One might almost say that the absence of physical signs in a case suggestive of early pulmonary tuberculosis is a point in favour of the diagnosis being correct. We must learn not to rely on the stethoscope in the diagnosis of pulmonary tuberculosis. If physical signs are present well and good, but their absence must not negative a clinical suspicion of tuberculosis.

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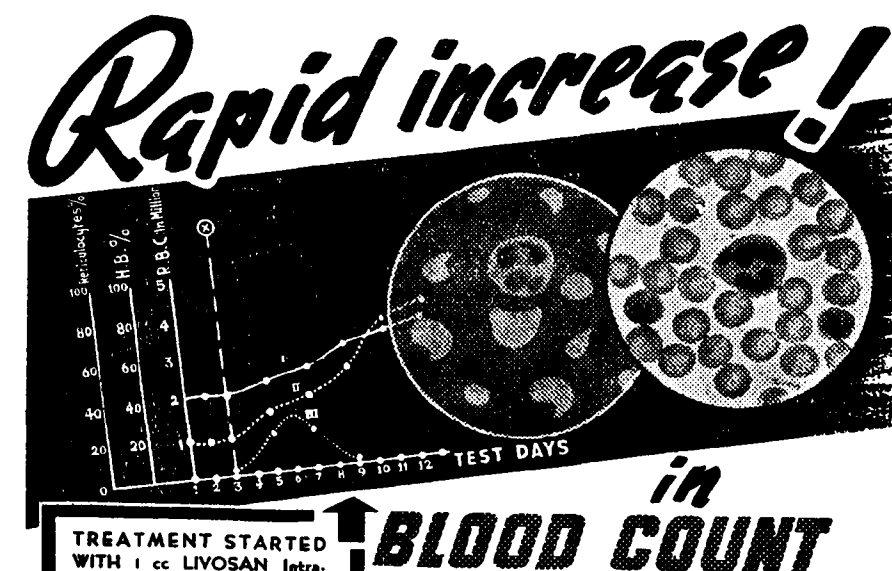
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D.G., I.M.S.

Dated, New Delhi, the 24th July, 1942



Curve i — H. B. %
Curve ii — RBC in million
Curve iii — Reticulocyte %

Note the reticulocyte response curve III in the above clinical chart on a case of Macrocytic Hyperchrome Anaemia. This proves beyond doubt the rapid building up of the blood picture in cases of pernicious anaemia within ten days of starting treatment with oral and injectable Livosan every day.

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The highly concentrated and purified extract of liver for painless intra-muscular and oral administration.

INDICATIONS

All grades of Anaemias especially pernicious anaemias and tropical anaemias.

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INJECTABLE

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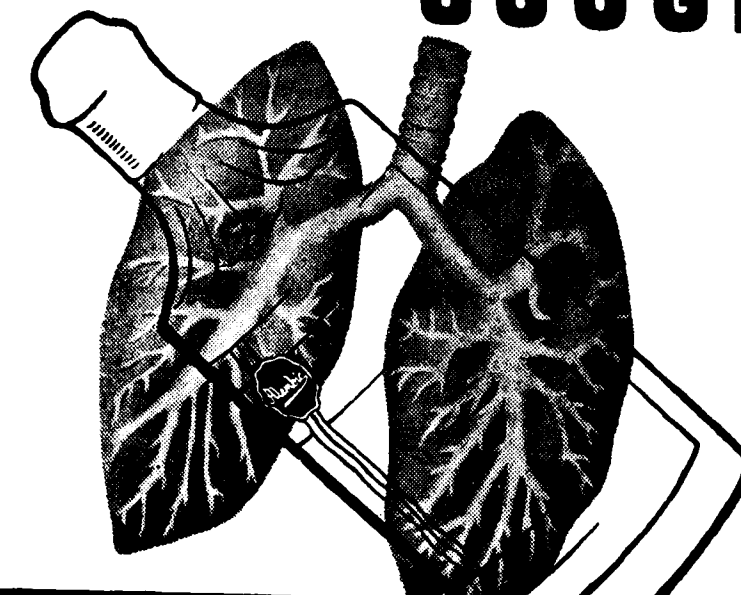
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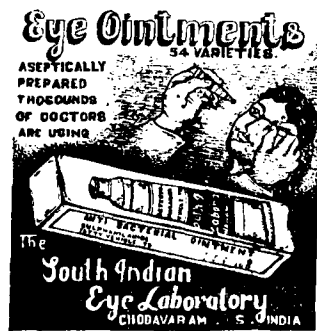
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