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Journal of the All-India Medical Licentiates' Association
(With which THE AGRA MEDICAL CLUB JOURNAL is incorporated)

MEDICAL EMERGENCIES



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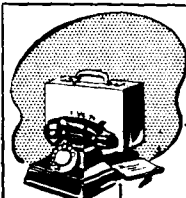
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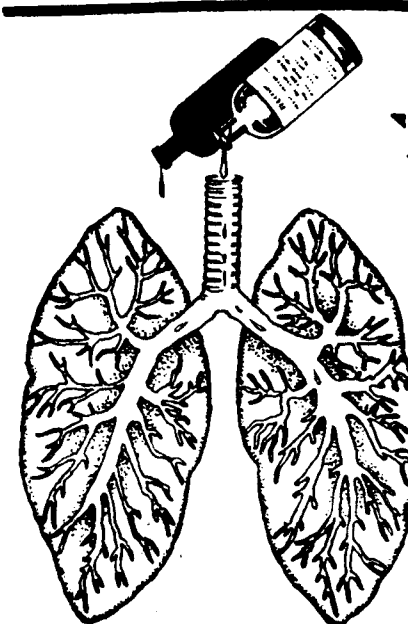
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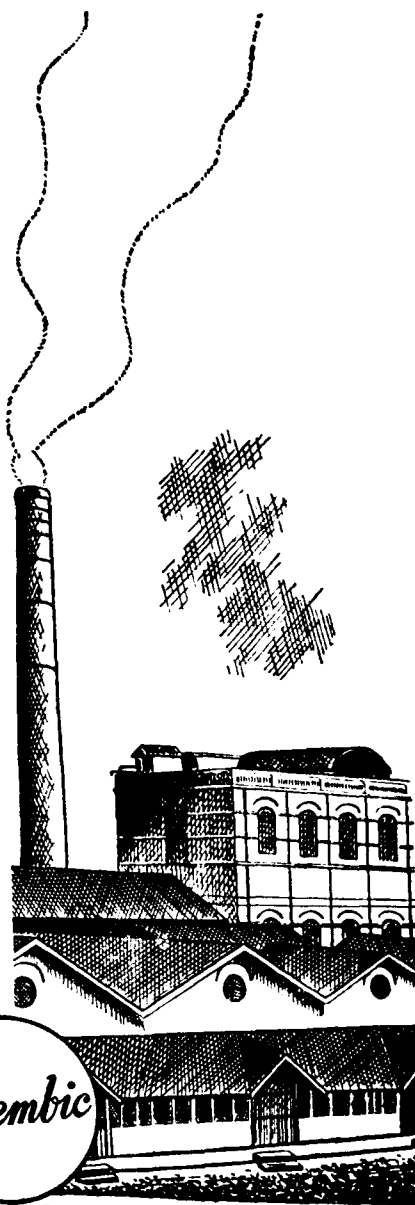
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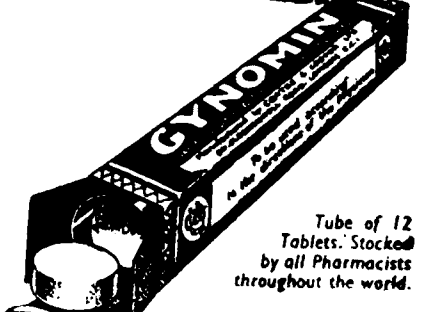
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THE Indian Medical Journal

Vol. 38

MADRAS: July 1941

No. 7

GOOD NEWS

We are indeed very glad to learn that after all the Government of India have decided that in future all the medical licentiates who would be employed in the Indian Medical Department shall be designated as Assistant Surgeons (Indian Cadre). The reasons adduced by the Government for effecting this change are based on right conception and right understanding of the licentiate of today:

"The old name of Sub-Assistant Surgeons was originally given to Hospital Assistants who at the time required far less in the way of educational and other qualifications than the medical licentiates who serve as Sub-Assistant Surgeons in the Indian Medical Department today. The present day Sub-Assistant Surgeon is a well educated and qualified man, and it is felt that there is no reason to retain a title which might suggest that he holds the same subordinate status as his original predecessor."

We hope that the Government would carry this logic a step further by granting the King's Commission to medical licentiates who volunteer for Emergency Medical Service. If, however, this is not possible owing either to financial or statutory reasons let them, without any further delay, enhance their remuneration as suggested by the Association (Rs. 250-15-450) and grant the King's Commission to a select few at least.

We may at once inform the Government as the accredited representative of the medical licentiates of this country that a large number of them are anxious to play their part well and serve India and Great Britain in this hour of great peril. But the remuneration should be such as would enable them to maintain their families at home in reasonable comfort and security, and to maintain their own status and position in the Army befitting their education as medical men. This generosity, which is but a trifle for the Government, would certainly meet with a staggering response from the licentiates in the different parts of our country. It may even enable the Association to undertake a regular campaign of medical recruitment; and the Government to that extent may be relieved of their anxiety to supply the needed medical personnel for this War. Surely, the Government must be aware that the Association can deliver the goods effectively, but the latter must be enabled to approach the licentiates with a message of hope and deliverance that they are no more the hewers of wood and drawers of water in the medical profession of our country.

Medical Emergencies

Treatment of emergencies—Medical, Surgical and Obstetric—usually falls to the lot of general practitioners. It may be said with perfect justification that their success and popularity in practice depend mostly on the efficient and expeditious way in which they deal with emergencies. Hence the *Journal* has ventured to issue three special numbers, each dealing with more important and common types of emergencies under the general classification of Medical, Surgical and Obstetric Emergencies. This Number aims to deal with medical emergencies. The Numbers on Surgical and Obstetric Emergencies would be issued in due course soon after their compilation and editing are completed.

This general classification of emergencies is, of course, quite arbitrary, since many of the more classic emergencies could by no means be put in water-tight compartments. This is equally true with regard to their treatment also. Thus for example, shock and collapse may occur in the course of either a medical, surgical or obstetrical disease; and hæmorrhage occurring in the course of enteric fever may require either a medical or surgical treatment. Therefore, a thorough knowledge of the pathology and treatment of major emergencies is a desideratum which the practitioners should command at a moment's notice.

The most useful equipment in the successful tackling of emergencies is common sense, and the next in importance and utility is the right choice of methods and drugs. These cannot be had by a mere wish except by a prior understanding of the subject and personal experience. The technique of transfusions, what, when and how to give them, should be mastered; the selection of drugs should be done with greatest care and discrimination; the choice of operative methods should be made after due but quick deliberation. Time is the very essence of emergencies, and if it is let slip by indecision due to ignorance or fear, the profession would lose much of its prestige and popularity, and the practitioner the confidence of his patients.

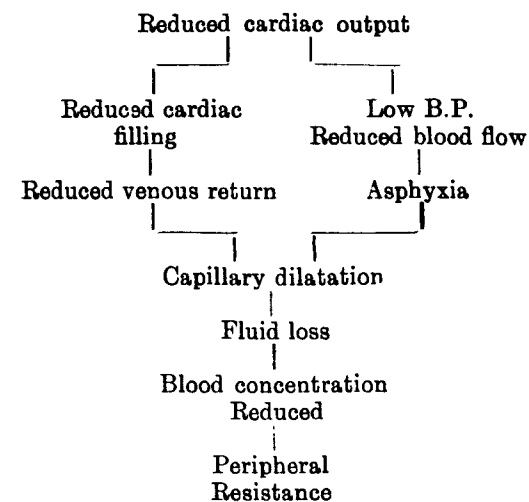
It is the aim of this Number to help the practitioner to have a proper grasp of the underlying pathology of major emergencies and of the modes of their treatment. Emergencies relating to heart disease, dysenteries and typhoid are not included in this Number, since they were fairly exhaustively treated in previous symposia. Such others as are now omitted will be presented in the subsequent special numbers on Surgical and Obstetric Emergencies. We trust that this and other Numbers on Emergencies will be found profitable to the practitioners.

Shock and Collapse

• Dr. A. Viswanathan, Medical Practitioner,
Madras

There is no clear distinction drawn in medical literature between shock and collapse. The writer would suggest to regard collapse as a rapid onset and/or aggravation of shock brought about most commonly and chiefly by accidents or diseases in which there is excessive dehydration either in the form of severe hæmorrhage, internal or external, or profound loss of body fluids as in fulminating attack of Asiatic cholera. If viewed in this sense, the pathology and the treatment of these two imponderables in medicine would become easily understandable to the practitioner and enable him to tackle them with precision and promptitude.

The pathology and treatment of shock have been subject to conflict in facts and theories. In a case of established shock there is a low blood pressure, a rapid heart, a thready pulse, a concentrated blood, and a low temperature. In addition, the capillaries become abnormally permeable and the blood plasma filters into the tissues. This may diagrammatically be represented thus.



This vicious circle may begin from any point, and has been variously suggested to be brought about by vasomotor exhaustion, or reduction of CO₂ in the blood, or diminution of total amount of blood in circulation or poisonous action of a toxin liberated from injured tissues. The last theory holds the ground to-day with slight modifications.

Since histamin poisoning produces many of the symptoms of surgical shock, it is suggested that either the toxin is closely allied to histamine or histamine-like substances or generates excessive histamine at the nerve-endings in the muscles resulting in excessive vasomotor stimulation.

The immediate possible causes of shock, in order of importance are

- (1) Hæmorrhage—open or concealed
- (2) Toxins—local or general

- (3) Excessive Vaso-constriction
- (4) Reflex Vaso-dilatation
- (5) Central exhaustion, injury and CO₂ loss.

These may be brought about by

- (1) Severe injuries, such as extensive burns, external traumatism or surgical operations
- (2) Sudden blows on the abdomen which interfere with sympathetic plexus or on the jaw which produce a disturbance of semi-circular canals.
- (3) General anaesthesia.
- (4) In the course of severe infections, as in typhoid, pneumonia, dysentery and cholera; or in cases of acute abdomen as in strangulated hernia, rupture of tubal pregnancy; or in cases of hæmorrhage before and after delivery.

Shock is divided into two clinical types: primary and secondary. Primary shock is usually of nervous origin, either central or peripheral. There is a reflex stimulation of the vasomotor centres. This in turn causes sudden fall in blood volume and pressure. Primary shock is rarely fatal and spontaneous recovery is the rule.

Secondary shock, as has been detailed earlier, is the result of several factors acting simultaneously or in quick succession resulting in reduction of blood volume and therefore in arterial blood pressure. The conditions of circulation are entirely altered. The larger arteries and veins are relatively empty. The heart is not filled to capacity. Both on account of slow circulation and active dilatation of the minute capillaries there is acute peripheral circulatory failure. In other words, there is capillary stagnation and inevitable exudation of plasma into the tissues. At this stage, the vasomotor system attempts to compensate by an outpouring of adrenaline which does its best for a short time to restore the circulatory balance. Often the offensive action of multiple factors is stronger than the defensive factors resulting in a condition of shock of varying degree and duration. All these are clinically manifested as semi-consciousness, profound pallor, dilated pupils, pinched features, cold sweat and perspiration, irregular breathing, thready pulse, and subnormal temperature. The onset of shock during the course of a surgical operation or anaesthesia could be made out by comparing the pulse rate with systolic blood pressure. "If a patient with a B.P. of 130, at the beginning of an operation has a pulse rate of 80, and at the end of operation has a pulse rate of 100 and a B.P. of 120, it means that a definite amount of shock is already present." (Snowman¹).

Equally obvious are the basic principles of treatment of shock. They are:

- (1) Maintenance of blood circulation in the brain and the restoration thereby of the depressed nerve centres.
- (2) Raising of the blood-pressure and volume to normal.

The therapeutic measures by which these could be attained may now be briefly detailed. Two general

¹ Manual of Emergencies—1936.

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Coma, Its differential Diagnosis and Treatment

• Dr. S. N. Malhotra, M.D., F. C. P. S., Chief Medical Officer and Sanitary Commissioner, Kasauli State, Rajputana.

Coma is a state of unconsciousness from which the patient cannot be roused by ordinary means. This is one of the most important medical emergencies which a doctor is usually called upon to treat both in hospital and private practice. Much depends upon its correct diagnosis and the right line of treatment.

Coma may arise from a variety of causes. The chief causes are:—(1) Head injuries (2) Effect of drugs and alcohol (3) Epilepsy (4) Uræmia (5) Diabetes (6) Cerebral disease including hæmorrhage, thrombosis, embolism, tumour, abscess, meningitis, encephalitis and acidosis. It is also met with as a terminal condition in many infective diseases.

Some cases are easy to diagnose taking into consideration the history and general examination; others require a careful and exhaustive examination before a diagnosis can be made.

In a case of coma always enquire about the previous history as to the presence of diabetes, kidney disease, cardiovascular disease, epilepsy and other nervous diseases, whether the patient had similar attacks before or not, and enquire also about his habits regarding drug addiction like alcohol, opium, cocaine, etc. Also enquire if the patient had headache, giddiness vomiting, twitching or convulsion before the onset of coma.

A comatose case should be rapidly examined as to the presence of head injuries such as fracture, any bleeding from lips as in epilepsy, breathing and pulse be noted, pupillary reaction noted, his heart examined, blood pressure taken: look for the evidence of paralysis and for Babinski's sign; urine be drawn out and examined for sugar and albumin: or ketone bodies; cerebro spinal fluid be examined both as to pressure and contents; ophthalmoscopic examination be done for any evidence of optic neuritis, albuminuric retinitis and hæmorrhages; temperature be taken, whether fever is present or not; and any vomit present should be sent for examination for the presence of any poison.

Differential Diagnosis: Alcoholic Coma:—This is rarely deep pupils are equal and dilated; breathing is deep and temperature is subnormal. The breath may be alcoholic, but this must not be given great importance as alcohol may have been given as a medicine for coma. The face is usually flushed, in the latter stages it is pale, pulse is full and rapid and strong, finally becoming small and feeble.

(2) **Opium poisoning:**—The onset is gradual and is preceded by drowsiness; face is pale; respirations and pulse slow, pupils contracted to pin point, temperature is normal or subnormal and breath may give characteristic odour.

(3) **Carbon Monoxide poisoning:**—It is indicated by the circumstances in which the patient is found. Cyanosis is the main feature and in advanced cases we get peculiar cherry-red colour.

warnings are needed in this connexion: (1) Avoid stimulants, such as strychnine, digitalis and coramine in the early stages of shock, because any attempt to stimulate nerve centres or circulation before recuperation has commenced will only add to their exhaustion. (2) Avoid all surgical interference till the shock is overcome, because that will augment the condition of shock.

Restoration of normal circulation in the Brain:
This can be achieved by

(1) raising the foot of the bed by at least 24 inches, and even more, if necessary

(2) maintaining body heat by hot-water bottles and warm blankets

(3) a hypodermic injection of morphia. This acts as a sedative by cutting off stimuli from the periphery to the centres.

Restoration of normal blood pressure and blood volume:
It has been already mentioned that the two fundamental pathogenic factors in production and maintenance of shock are low blood pressure, and relatively small volume of blood in the arteries. Not only the volume of blood is low but it is viscid also owing to the escape of plasma into the tissues from the dilated and dysfunctional capillary bed. This will explain the need for transfusion of saline or blood plasma or serum in cases of profound shock. Raising of blood pressure by means of drugs is often dangerous and equally futile. The best way of doing it is to add one ounce of adrenalin chloride (1-1000) to 1½ pints of the infusion fluid, and run it in the vein slowly, preferably by drip method, till the blood pressure rises to 130 mm. (Snowman²). Bayliss advocates intravenous infusion of one pint of a 5% solution of gum in normal saline in all cases where blood pressure has fallen below 90 mm. Reginald A. King³ warmly recommends hypertonic saline intravenously, instead of normal saline, since in his view and experience this would effect both restoration of blood volume and blood pressure—in one instance the blood pressure recovered from the low level of 30 mm. Hg. Of late blood-transfusion has come into prominence in the treatment of shock, and wherever facilities for such transfusion are available, saline infusion has been displaced effectively. Either whole blood, plasma or serum is used for this purpose. The latter two are more commonly used because of the difficulty inherent in obtaining compatible blood and in its proper storage. "If measures to restore the blood volume are to prove effective, every effort should be made to apply them early, before B.P. has fallen below 90 mm. Hg., or the pulse rate risen above 120. Moreover, the amount of blood, plasma, or serum transferred should be large enough to overcome the deficit in blood volume: at least 2 pints of blood are required in mild cases, and four in severe cases. To delay transfusion until signs of advanced shock have appeared is to wait until irreversible damage has occurred to blood vessels and central nervous system and no permanent restoration of circulation can be achieved."⁴

² Ibid. ³ B.M.J., Oct. 19, 1940, p. 485.

⁴ Medical Research Council War Memorandum, London, 1940.

(4) *Epilepsy*:—Coma which follows a fit is of short duration. History of convulsion is always forthcoming; tongue is found to be bitten and there is frothy saliva flowing from the mouth; breathing is stertorous and the face congested. There is no paralysis.

N.B.—*Status Epilepticus* should be kept in mind. In this there are repeated convulsions associated with deep coma and there is marked pyrexia present.

(5) *Hysterical coma*:—Other hysterical manifestations are present. The subject is usually a young female. Pupils are equal and react to light. She offers resistance to opening her eyes by the physician.

(6) *Uremic coma*:—The onset may be sudden without warning; but usually its onset is gradual with prodromal symptoms such as persistent headache, increasing drowsiness, nausea or vomiting, muscular twitchings or actual convulsions. Respirations are usually of Cheyne-strokes type. There is history of kidney trouble. If urine can be drawn (usually there is suppression of urine) it contains albumin. Retinoscopic examination will show retinitis.

(7) *Diabetic Coma*:—Onset may be sudden but usually there are prodromal symptoms such as headache, drowsiness, air hunger, anorexia, and vomiting. When coma comes on, respiration is deep and slow, pulse is feeble and rapid, odour of breath is like that of over-ripe apple. Urine examination will demonstrate sugar and ketone bodies. It is to be remembered that if the patient is on insulin, coma may be due to hypoglycaemia.

(8) *Coma from Apoplexy*:—This may result from embolism, thrombosis, or hæmorrhage.

(a) *Cerebral embolism*:—The patient will be suffering from chronic endocarditis or more especially from infective endocarditis. This occurs where there is marked general and cardiac weakness. The onset is sudden and it is not preceded by any cerebral warning symptoms. If a small cerebral artery is affected it may not give rise to coma; but if as usual the middle cerebral artery is affected, coma is present with hemiplegia on the side opposite to the lesion. This is of comparatively shorter duration.

(b) *Cerebral thrombosis*:—It should be suspected in young syphilitic subjects when prodromal symptoms are always present, and in old people when there is a marked debility present. The onset is gradual. It takes place during sleep when an individual is exhausted. In cases where clotting occurs primarily in a main artery onset of symptoms are quite rapid. There is no blood in the cerebrospinal fluid a few hours after the onset of coma.

(c) *Cerebral Hæmorrhage*:—This is the usual cause of apoplexy of sudden onset during some excitement, strain or exertion, in persons predisposed by reason of arteriosclerosis and high blood pressure associated with or apart from chronic renal disease. The presence of blood in quantity in cerebrospinal fluid as proved by lumbar puncture is a certain diagnostic indication of cerebral hæmorrhage. Hæmorrhage is most usually capsular. Lenticulostriate branch of the cerebral artery is the vessel which is most prone to rupture.

The symptoms of apoplexy from whatever cause depends on the site and extent of vascular lesion. Conjugate deviation of the eyes is an almost constant finding, at first during spasm away from the lesion but

in size and may be contracted or widely dilated and later towards the lesion. The pupils are often unequal and inactive to light. The face is usually flushed and congested, pulse is full, blood pressure often high, respirations hurried, noisy and stertorous or of Cheyne-stoke's type. The common finding is paresis or paralysis of face, arm, and leg of the side opposite to the lesion.

Haemorrhage into the pons:—There is bilateral paralysis, pupils contracted to pin point and a marked degree of pyrexia. There may be crossed paralyses present.

Meningeal hæmorrhage:—In this there is history of direct head injury followed by a latent period and the subsequent gradual development of coma.

Cerebellar apoplexy:—It is a rare condition as the result of hæmorrhage usually from the superior cerebellar artery but is more often due to thrombosis of the posterior inferior cerebellar artery. The onset is rapid followed by pain in the back of the head, but coma may not be complete. There is bilateral ataxia, repeated and severe vomiting, rotation to the side of the lesion, skew deviation of the eyes and nystagmus to the side of the lesion.

TREATMENT

In a case of coma treatment naturally depends on the cause in operation. Hence in some cases it is quite simple. I will deal here with the treatment of coma resulting from uræmia, diabetes, and cerebral apoplexy.

(i) *Uremic coma*:—There may or may not be convulsions. If convulsions are present give a few whiffs of chloroform. A venesection and lumbar puncture can be easily carried out. 15 or 20 ounces of blood may be withdrawn from a vein, thus reducing the amount of circulating toxin and it may be considered useful to give a subcutaneous infusion of saline with the object of diluting the toxin still more. The volume of saline should not exceed the volume of blood withdrawn. In cases where there is œdema lumbar puncture is very useful. Free purgation may be secured by a dose of pulv jalap co., followed by saline. In hospital hot wet pack or hot air pack can be given with benefit. In private houses use of guaiacol is indicated.

A solution of guaiacol and olive oil in equal parts is painted over an area of 2 inches square in each axillary region, the parts are covered by jaconet and the whole fixed by a bandage. The patient is wrapped in a hot blanket and free sweating follows in a short time. At the same time dry cupping over the loins followed by the application of hot poulticing will be effective.

Pilocarpine may also be employed to produce sweating. It is a marked cardiac depressant and also stimulates salivary and bronchial secretion. Thus a comatose patient may be drowned in his own bronchial exudate. It is given hypodermically in $\frac{1}{2}$ to $\frac{1}{4}$ gr. doses. Should the patient recover from acute uræmic state further treatment by dieting and diuretics will depend on the nature of underlying cause.

(ii) *Diabetic Coma*:—Give insulin at once and dosage is governed by blood sugar estimation. Generally speaking in a diabetic coma the initial injection should be 20 to 40 units depending on severity, with repeated injections at hourly intervals when no improvement

occurs. In known cases give 20 insulin units right in the beginning. In average cases 60 to 80 units will be required to produce the desired effect.

If blood sugar estimation can be carried out, injections are carried on till it comes down to 0.15. In cases where blood sugar estimation cannot be done urine should be examined after third or fourth hour from the beginning of treatment and the insulin administration should be suitably diminished or stopped when improvement occurs or when glycosuria ceases. In coma due to hypoglycaemia give hypodermic injection of 1 c.c. of adrenaline hydrochloride (1 in 1000 solution).

(iii) *Cerebral apoplexy*:—If due to hæmorrhage, avoid all unnecessary movement of the patient. In the acute stage the patient should be placed in bed with head and shoulders somewhat raised and neck freed of all tight clothing, and not bent, so that there is as little interference as possible with the return of blood from the head. If respiration is impeded and there is marked stertor the patient should be turned to one side to prevent the tongue from falling back and the mouth should be regularly cleaned. Hot water bottles should be applied to the feet and ice cap on the head; when blood pressure is high, give one to two minims of croton oil in butter to be applied on the back of the tongue. If retention occurs draw out urine with a catheter. When pulse is full with distension of cervical veins, cyanosis and stertor, venesection may be carried out with advantage to relieve the pressure and embarrassment. If pulse is weak and rapid, this should not be done. Lumbar puncture should be done and repeated if intracranial pressure remains high.

Meningeal hæmorrhage:—It calls for surgical measures to remove blood clot and for the ligation of the bleeding vessels.

If the patient survives the acute stage, he should be nursed on water bed and great care exercised towards the prevention of bed sores. There is a tendency to hypostatic congestion of lungs which should be avoided by keeping the bed raised. Diet should be light and stimulating. If swelling is difficult, nasal feeding should be resorted to. Paralysed limbs should be kept warm by wrapping in cotton wool and light massage and passive movements should be begun early and carried out daily.

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Pharmacological Basis for the Oxygen Therapy in Pneumonia

● Dr. A. N. BOSE, M.B.

Bengal Immunity Research Laboratory, Calcutta.

The pharmacological basis for the treatment of all diseases depends on the pathological conditions produced, and their proper physiological elucidation. Efficiency of a treatment demands a consideration of the basic etiology, and tackling the whole problem in the light of its adequate analysis. Thus, from a group of complex symptoms, the clinician has got to determine the main factors, which invites his urgent and immediate attention, and the amount of success in treatment he secures will vary in proportion to the efficacy of the steps taken thereafter.

In the light of the above generalisation, the main factors in the whole range of complex symptoms in pneumonia may be summarised to a condition of anoxæmia created by the consolidation of the lungs with inflammatory exudation, and the reaction of diminished circulatory efficiency, heralded by the symptom of cyanosis. These are the two main factors which determine the prognosis; and which, unless taken proper and immediate care of, are sure to launch the clinician in a serious disaster. It is in consideration of these factors that the necessity of oxygen treatment comes in foremost of all the armamentaria used in tackling respiratory diseases especially in the aged and the children. The idea of the utility of oxygen as the last emergency or even as a secondary treatment must be completely shaken off in view of the profound toxicity of the anoxæmic condition which is present from the very start of the disease. But unfortunately, not a large number of clinicians of our country will pay the needful attention to this factor before they have tackled the local inflammatory condition and smoothed the bronchioles.

From the pharmacological point of view, the production of anoxæmia is an interesting problem. According to Barcroft's classification (1920 b), the anoxæmia in pneumonia may be grouped both under the anoxic and the stagnant types.

Studies in the oxygen carrying capacity of blood and its oxygen tension and saturation have definitely proved that under difficult respiratory conditions, the oxygen carrying capacity of blood increases, though the oxygen tension falls, and the amount of saturation of oxygen in the blood diminishes to a very considerable extent. (Barcroft 1920 a). That this factor is always at play in case of pneumonia is definite. In the initial stages of pneumonia when there is little consolidation, and the symptoms only point to a slight or even no dullness with a high or moderate pyrexia and a fairly hurried respiration, the oxygen tension and the saturation index of the blood may give valuable indication regarding the amount of oxygen available for the tissues, and to any possible respiratory distress. The oxygen carrying capacity of blood cannot here be a certain indication in this respect, and act only as an imperfect compensation for the reduction in the oxygen tension of the blood.

Stadie (1919) has definitely shown that in pneumonia the degree of unsaturation with oxygen of the blood expressed in percentage of full saturation increases from the normal figure of 5'0 to 32'0 in case of arterial blood, and from 27'0 to 57'0 in case of venous blood. He has also noted that cyanosis occurred when the venous unsaturation reached a figure of 40 or above. These figures show the high degree of inefficiency to which the whole respiratory system is exposed, and the most deleterious effect of this insufficiency of available oxygen on the circulatory system, the heart and the brain. It is well-known that the heart is readily affected by the slightest scarcity of oxygen, and so also the brain. We can well imagine that the progressive degree of oxygen unsaturation brings about an increasing decrease in the efficiency of the heart and the brain, and if this factor be tackled from the very start, all the paraphernalia of cardiac, respiratory and cerebral stimulants may possibly be dispensed with.

Compensatory phenomenon against the oxygen lack is expressed as a hurried respiratory rate. But this is of no very practical value, if there is moderate or large consolidation of one or both lungs. This can be explained on the basis of the fact that though the blood is coming in contact with the alveolar air more frequently, it is only a portion of it and not the whole; the degree of saturation per minute volume of blood is also kept constant under a fixed oxygen tension of air. But the amount of blood which circulates the consolidated portion of the lungs but cannot come in contact with alveolar air owing to collapse of the alveoli, is prevented from being oxygenated. The result is that the total amount of blood remains deficient in available oxygen, and the demands of the tissues, which are increased rather than decreased in disease, remain unsatisfied. Hence, it can well be surmised that this hurried respiration rate is also an indication for the initiation of the oxygen therapy.

The "stagnant" type of anoxæmia in cases of pneumonia is a secondary factor brought about by the weakness of the heart and the circulatory system, caused by the primary "anoxic" anoxæmia due to hurried respiration, and partial or total consolidation of the lungs. This type brings about a vicious circle; weakness of the heart causing more anoxæmia, and anoxæmia causing increased weakness. A small dose of respiratory and cardiac stimulant, such as atropine at the initial stage, would be able to break the vicious circle and to bring about marked improvement in the condition of the patient.

The belief held by Haldane (1924) that the alveolar epithelium is able to secrete oxygen, during a prolonged fall in alveolar oxygen, to compensate for the reduction of the oxygen tension of the blood, is another factor for consideration. This observation which has neither been confirmed, nor refuted by other workers, has no inherent improbability in it, since fishes are known to secrete oxygen in their swim bladders. Taking the view to be correct to a certain extent, it is logical to conclude that the mass of fibrin and other exudative materials which block the bronchioles and deposit on the cells, will very greatly prevent the said oxygen production. It is the judgment of this factor which will lead the physician towards a slight stimulation of the bronchioles by mild

expectorants, and counter irritation, but only after the initial anoxæmia has been controlled. Otherwise, the very slight physical efforts of expectoration will add to the anoxæmic state already present by further weakening the already weakened heart.

Oxygen therapy.—From all that have been expressed above, it is apparent that oxygen therapy plays a vitally important part in the treatment of pneumonia. If initiated from the very start, it is able to control the cyanosis and the circulatory failure and thereby strengthen the natural defences of the body in overcoming the inflammatory processes with which the lungs are locally affected.

The mode of application of this therapy is all the more important, and success depends on the intimate knowledge of its pharmacological action in combating the rapid onset of anoxæmia.

Oxygen, whenever used, is generally administered by means of a catheter or mask, with a certain fixed conventional rate of flow as determined by the counting of bubbles, and it is at this point that the whole mistake in its administration might be committed. A fevered patient generally breathes 10 litres of air per minute, which contains about 2 or more litres of oxygen, considering that the respiratory diseases, liable to cause lack of oxygen in the tissues, will require more oxygen, it may easily be surmised that at least 3 or more litres of oxygen will be required for the prevention of the fall in the saturation index beyond therapeutically allowable limits. Even if the oxygen is bubbled in a continuous stream, it has been measured that not more than 0'2 litre is available. This amount is practically ineffective, and the neglect of this point, will be the cause of failure of oxygen therapy in so many cases.

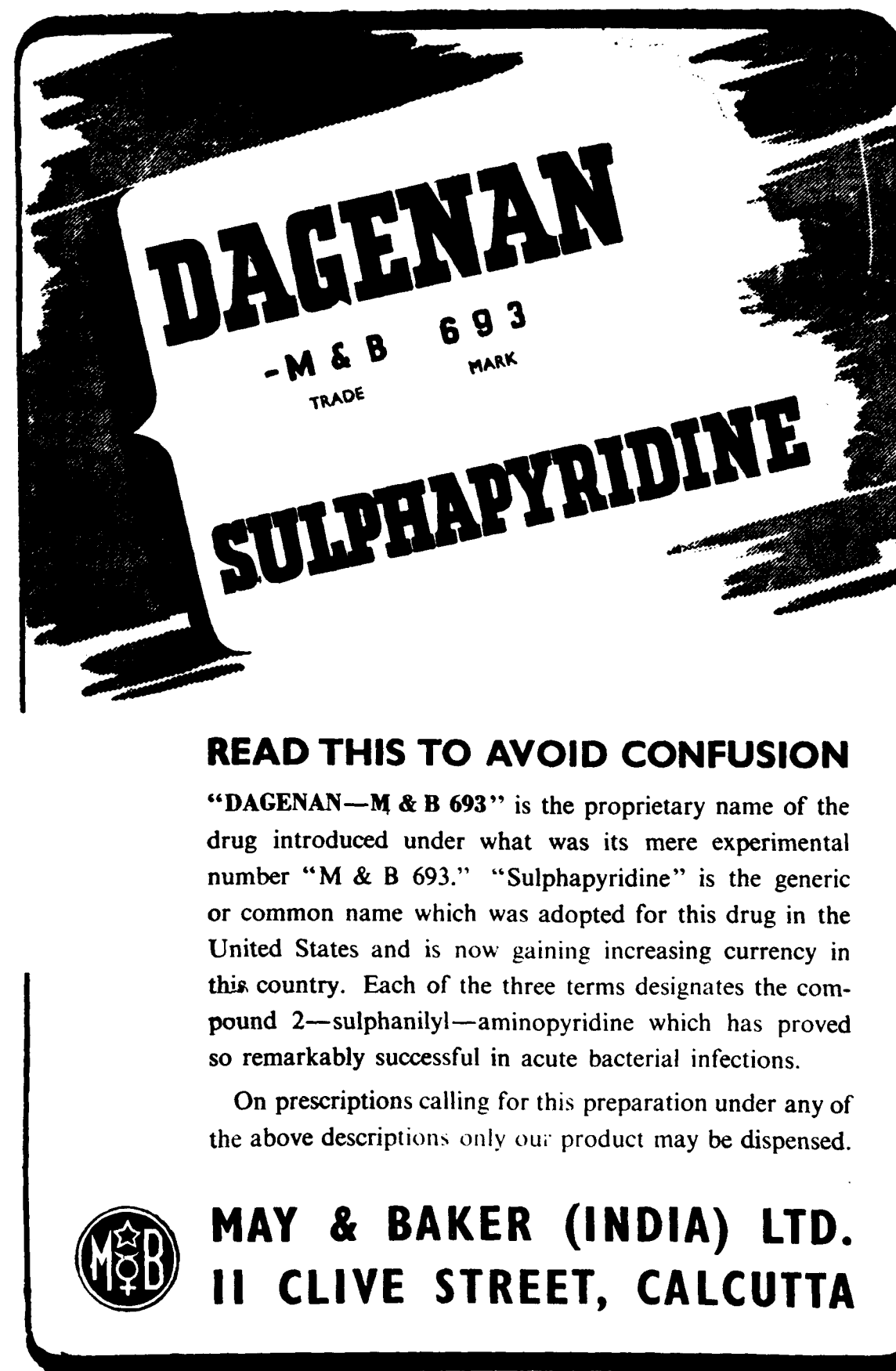
The obvious conclusion, therefore, is that oxygen to be useful, must be supplied in more available form, and it is here that the question of the provision of "Oxygen Chambers" in hospitals comes in. A chamber where the oxygen tension may be regulated according to necessity is the best form of oxygen therapy. In case where this is not available, the physician must administer with a face mask like the anæsthetic one, or better with a gas respirator with ample supply of oxygen. Absence of even these contrivances will lead the physician to utilise a good-fitting glass funnel with large amount of gas.

As mentioned before, the oxygen therapy should be started at once the suspicion of pneumonia or any respiratory trouble is formed. It has been found out by Davies (1927) that once cyanosis had appeared, the tissues and the heart are so much damaged that oxygen would not be much able to counteract the condition.

In conclusion, I would like to remark that the value of oxygen in therapeutics though appreciated only recently, the results, in cases of other diseases, indicate also its utility in the treatment of a large number of circulatory and respiratory disturbances.

REFERENCES

- | | | |
|-------------------|--------------------------------|------------------------|
| Barcroft (1920 a) | <i>Proc. Roy. Soc. Med.</i> 13 | <i>Ther. Pharm.</i> 13 |
| (1920 b) | <i>Brit. Ass. Rep.</i> 152 | |
| Haldane (1924) | <i>Brit. Med. J.</i> ii, 885 | |
| Stadie (1919) | <i>T. Exp. Med.</i> 30, 215 | |
| Davies (1927) | <i>Brit. Med. J.</i> ii, 917 | |



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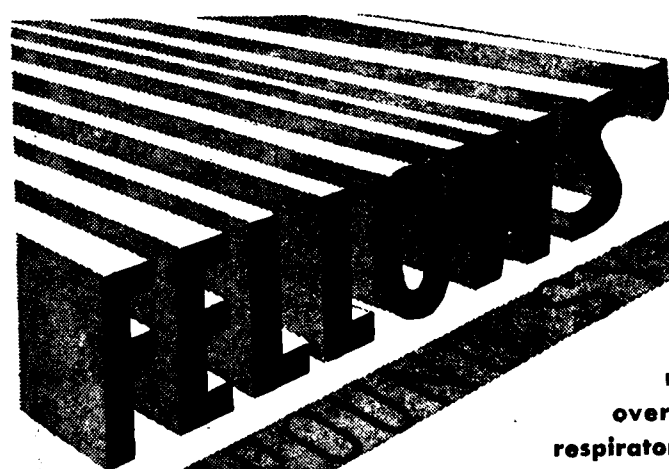
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Technique of Saline transfusion and its Indications

• Dr. D. N. Basak, Dacca.

History:—Saline water was used in old days in acute infectious epidemic disease called *Vishuka* as described by Sushruta (600 B. C.). This *Vishuka* corresponds to Asiatic cholera so far as the signs and symptoms are concerned.

The investigation of saline transfusion did not progress much till the time of Leonard Rogers who popularised it in the treatment of cholera. (vide *Trans. Roy. Soc. Trop. Med & Hyg.* V. 20, p. 14-21, April 1927).

It was also discussed by late Dr. Lal Behary Ganguly (vide *Seventh Congress, British India, V. 1, p. 32-36 Far Eastern Assn. Trop. Med.*).

General Indications:—It is universally used for the replacement of fluid lost.

(a) *In cholera:*—To prevent the loss of water from the system or to replenish the loss already sustained if it be of a severe degree as to endanger life owing to profuse vomiting and purging.

(b) *In Obstetrical and Gynecological Operations:*—Such as, in acute blood loss due to placenta previa, incomplete abortion and in removing utero-ovarian mass, etc.

(c) *In Surgical Cases:*—Such as injuries, accidents during and after major and lengthy operations and post-operative shocks.

(d) *In Certain Diseases:*—Such as hæmophilia, septicæmia, toxæmia, etc.

It may be noted here that the loss of fluid can be determined by

- measuring Sp. Gr. of blood.
- estimating the relative proportion of corpuscles and serum.
- the condition of the pulse and blood pressure.
- loss of salts from the tissues and the blood.

VARIETIES AND COMPOSITION OF SALINE

Normal	Alkaline Isotonic	Hypertonic	Recta
Sodi Chloride Gr. 90	Sodi Chloride Gr. 90	Sodi Chloride Gr. 120	Sodi Chloride Gr. 90
Aqua Distilled pint 1.	„ Bicar. Gr. 160	Pot. Chloride Gr. 6	Sodi Bicar. Gr. 60
	Aqua Distilled pint 1	Cal Chloride Gr. 4	Glucose (5%) oz. 2
	Specially useful to counteract acidosis and uræmia and for cholera cases duration of which is more than 30 hours.	Specially useful for early cases with high Sp. Gr. and bad pulse and for reinforcing blood volume and chloride loss.	

Mode of Administration:—There are several routes of injecting salines:

- Intravenous
- Subcutaneous
- Rectal
- Intra-peritoneal.

1. *Intravenous Saline Transfusions:*—

Indications:

- Sp. Gr. of blood above 1060.
- Presence of severe cramps or cyanosis or restlessness.

- Suppression of urine for more than 24 hours.
- Vomiting and purging profusely.
- Patient is pulseless and Sp. Gr. not below 1054.
- Patient is uræmic and passing very little urine with even low Sp. Gr.
- B. P. is below 50 m.m. Hg. and Sp. Gr. not below 1054.

Contra-indications:—

- Bronchitis.
- Pneumonia or Broncho-pneumonia.
- Oedema of the Lungs.
- Cardiac weakness after beriberi.

If transfusions are required inspite of above contra-indications it may be done after a fair dose of atropine sulph. (Gr. 1/50) hypodermically.

Technique:—There are two methods. (1) Open method (2) Direct puncture method.

(1) *Open Method:*—Select a prominent vein at the bend of the elbow. Tie a rubber tubing or tourniquet round the arm securing it with a slip knot. Make a superficial incision with a sharp scalpel (about 1") after sterilizing the part with Tr. Iodine and absolute alcohol. Take care to draw the skin to one side with the left thumb in such a way that the knife is not directly over the vein. Clear the vein from the surrounding tissues and introduce an aneurism needle under the vein from one side to the other. Thread it with a piece of silk. Pull the needle back leaving the two free ends of the ligature on either side. Cut the loop of the ligature near the needle and withdraw it. Tie tightly the distal part of the dissected vein with one ligature. Put another ligature in the proximal end very loosely and pull it upwards. Cut off obliquely with a fine scissors half of the thickness of the vein in a "V" shaped flap.

Now insert the silver canula with a stop-cock which had been previously connected with a rubber tubing to the nozzle of the bulb containing saline upwards into the vein taking care that no air enters into it. Tighten the loose ligature in such a way that the canula may not slip out of the vein.

Allow the required amount of saline to run in, then withdraw the needle when it is nearly finished. While doing so tighten the ligature obliterating its lumen.

Complete the operation by closing the skin incision by silkworm gut or Mitchell's clip.

Instruments necessary for open method:—(1) Scalpel (2) Dissecting forceps. (3) Artery forceps. (4) Aneurism needle. (5) Blunt pointed scissors. (6) Suturing needle (7) Silk thread. (8) Silkworm Gut. (9) Roger's Canula. (10) A glass graduated bulb. (11) Rubber tubing. (12) Clamp. (13) A tray. (14) Dressings.

2. *Direct puncture method:*—A special direct puncture needle which has been previously connected with a rubber tubing to the nozzle of the bulb containing saline is inserted into the lumen of the vein. Blood is sucked in the syringe and then pushed in, the stopcock is opened and the required amount of saline is allowed to run in.

Dangerous symptoms during intravenous saline injection may be:

- Intense headache.
- Short cough, quick respiration and oppression in the chest.
- Hurried pulse.
- Severe rigor.

- (5) Recurrence of restlessness.
- (6) Feeling of discomfort, dull or apathetic.

Comments: (i)—Temperature of saline should be as many degrees below 98° or colder as rectal temperature is above 98° or *vice versa*.

(ii) *Quantity:*—For each rising unit of Sp. Gr. above 1060 one pint of saline is given. Not more than 4 pints should be given in one sitting.

(iii) *Rate of flow:*—4 oz. per minute for the first pint and 10 minutes for each subsequent pint. If the cardio vascular system is diseased too rapid entry of saline will bring on heart failure. Rate can be regulated with the stop-cock.

(iv) *Selection of vein:*—Adults—Median Basilic vein at the bend of elbow. Children—Long Saphenous vein in thigh or in front of Int. Malleolus.

(v) *Position:*—Dorsal position with arm abducted and fore-arm supinated.

(vi) *B. P. as a guide:*—During injection an increase of below (4 m.m.) pulse pressure over the previous reading implies that it should be stopped.

(vii) Let the canula run a little into the vein in order to avoid all possibilities of introducing air.

(viii) In cases of vasomotor failure or in presence of pulmonary complication small quantities (2-6 oz.) repeatedly at short intervals is helpful.

(ix) In order to prevent uræmic complication the first pint should be given of alkaline isotonic saline followed by hypertonic saline.

(x) For any reaction cold sponging or ice bag over head may be applied to put down the temperature.

2. Subcutaneous Saline:—

Indications:—

- (a) When rapid effect is not essential.
- (b) Mostly serviceable in children.
- (c) When Sp. Gr. of blood is above 1063 with fairly high B. P. (100 m.m. Hg. or more)
- (d) To keep as reserve tank for the system when there is continuous loss.

Technique:—The subcutaneous saline needle, which has been previously connected with a rubber tubing to the bulb containing saline is inserted on the inner wall of the axilla and breasts. As the fluid runs in very slowly and the amount which can be introduced into any area is limited, it is preferable to have needles inserted into separate places. The swelling formed by the accumulating fluid should be very gently massaged so as to distribute it over a wide area but when the overlying skin becomes very much tense the needle must be withdrawn.

3. Rectal Saline Indications:—

- (a) To combat shock.
- (b) When there is insufficient excretion of urine.
- (c) To relieve thirst.

Technique:—There are two methods.

(a) *Murphy's method:*—The apparatus consists of a glass flask graduated in pints and provided with a siphon tube, a thermometer, a stand and a spirit lamp. The rubber tube which conveys the saline solution to the rectum is provided with a clamp, by means of which the flow of the fluid can be regulated. With this arrangement the flow is regulated at the rate of a pint in an hour and a half, and the temperature of the flask is kept about 140° F in order to ensure a temperature of 98° F at the rectum. This arrangement may also be made with a thermoflask.

Technique of Blood Transfusion and its Indications

● Dr. S. A. Subedar, L.C.P.S., R.M.P.,
Kutiyana

Although transfusion of unmodified blood is ideal, the difficulties under ordinary and emergent circumstances are so great that now-a-days citrated blood is employed. The effects however are the same.

One of the difficulties of blood transfusion is the insertion of the needle into the donor and the recipient. If the veins of the recipient are too small, collapsed or hidden by fat it becomes necessary to expose them. The internal saphenous just anterior to the medial malleolus is often accessible. It is usually the best vein to select in cases of young children. The use of anterior fontanelle is unnecessary. After raising a wheal with novocain an incision in the skin at right angle to the vein is made. The incision is $\frac{1}{4}$ inch long. Two ligatures of fine catgut are placed round the vein with aneurysm needle. The distal one is tied. The vein is then cut and the canula inserted. The proximal ligature is tied after the completion of transfusion. When the needle enters the vein of the donor a free flow of blood indicates that there is proper penetration. If the blood only drips, second puncture should be made. Before transfusion sterile mineral oil is pumped through the instrument and then washed with saline. There are simple syringes in the market with valvular arrangement so that the blood from the donor is sucked and injected into the recipient. If the instrument is properly cleansed with oil, clotting of blood does not take place.

Marriot and Kekwick have described closed method of obtaining blood from the donor. A motor tyre foot pump, pressure tubing and a milk bottle form the essentials. By inducing negative pressure in the system

(b) *By drop method:*—This consists of a glass syringe, a glass with special dropper, rubber tubing, a small glass tube, a clamp and a rubber catheter. The glass syringe is filled with saline water which is allowed to drop through the special dropper controlled by a clamp in such a way to count each drop per second.

4. *Intra-peritoneal Saline Transfusion:*—This method is of great value when a large number of cases have to be treated with a small staff. It is easier and three or four pints can be run in about ten minutes, and if the pulse is not too bad the fluid is rapidly absorbed and can be repeated through the same perforation. This consists of a smaller silver plated steel tube with one end sharpened like a cork borer and a flange 2" above it to prevent it slipping in too far. A blunt stilllet suffices for cleaning the tube when necessary. A small incision is made with a thin knife through skin and fascia of the anterior-abdominal wall, just below the naval where the peritoneum is adherent. The tube is inserted into the wound and with a boring movement it can be made to enter the peritoneal cavity without injuring intestines.

Conclusion:—Salines as adjuvant to other modes of treatment have been advocated by modern physicians.

Hundreds of lives are being saved every day by judicious application of salines even when they are in hopeless condition.

the blood can be easily obtained. These authors have reported series of continued drip transfusions carried out at the Middlesex Hospital in 1935. The average time taken was 29 hours, average amount of blood transfused five pints. This method is not free from difficulties and dangers.

The indirect transfusion of citrated blood is the method of choice to-day. In a recent report of twenty years experience with citrated blood, Richard Lewisohn of New York draws attention to the tendency of post transfusion chills. This can be avoided by (1) use of triple distilled water and (2) careful cleansing of all instruments. Another worker has attempted to overcome the disadvantages of transfusion by treating the donor's blood so that it will not coagulate. This is done by injecting the donor intravenously heparin to prolong coagulation time. This does not produce any harmful effect on the donor or the recipient. The transfusion is carried out very simply, the blood being injected by ordinary 50 c.c. syringe after it has been allowed to run from the donor into a sterilized vessel.

Blood Groups and Blood Transfusion.—The basis of successful blood transfusion is uniformity of blood groups of the donor and the recipient. If the blood of the donor and the recipient are incompatible, severe reaction or even death may occur. Group O individuals are called universal donors and are considered suitable for recipients of any group, while group AB persons are universal recipients. It is customary to test the serum of the recipient against donor's cells and *vice versa*. If no agglutination occurs in either test, the bloods are compatible. This is safeguard against errors, the whole business of grouping, matching and selecting suitable donors can be carried out within a short time. At times several donors have to be tested before a compatible blood is found.

Cadaver Blood Transfusion.—Transfusion with post mortem blood has been suggested lately by many writers. The blood is obtained from cadavers who died from angina pectoris, alcoholic poisoning, from suicides or from accidents. The blood is obtained from jugular vein. The canulae are inserted one directed proximally, another distally. The blood may be withdrawn after six or seven hours without danger of infection. In some cases the blood was preserved for 28 days. In most cases the blood transfused was of the same group as that of the patient. Precautions with regard to Wassermann reaction were taken. Yudin of Moscow performed transfusion with cadaver blood in 1930. From 900 c.c. to 3500 c.c. of blood can be obtained. He thinks that cadaver blood can be stored for a long time, and is safer than citrated blood. At one hospital a blood bank of citrated blood preserved by refrigeration has been established. The method of using of cadaver blood is revolting to some.

Placental Blood.—Goodall and others have reported about their experiments in collection and storage of placental blood for transfusion. The average amount of blood from the umbilical cord is 125 c.c. Since the foetal blood contains large amount of red cells, less blood is required for transfusion than adult blood. Before transfusion the foetal blood is heated in a basin of water, shaken and then filtered. The above writers point out that one advantage of stored blood is the disappearance of allergic reactions which occur from a donor shortly after he has had a meal.

Heparinized Blood.—Heparin, now believed to be a powerful anticoagulant, is injected into the donor in a dose of 1 mg. per kilo of body weight within half an hour of transfusion. Sterile 5% Heparin sol. is used. This is harmless to the donor. Favourable reports have come from Germany. This method simplifies transfusion, making it possible to carry out without special operative procedure, apparatus, or trained staff. All that is necessary is venous puncture.

Indications.—In agranulocytic angina transfusion of blood appears to be of best value. In burns blood transfusion will sometimes save the patient, who is toxic and shocked beyond the probability of recovery. In hamophilia the therapeutic measure *par excellence* is the transfusion of blood. Improvement from blood transfusion lasts from two to six days. Some workers have discussed the hamorrhagic tendency in cases of obstructive jaundice and advocate on both theoretical and practical grounds the employment of blood transfusion to lessen this tendency. They believe that blood transfusion has a favourable influence in as much as it diminishes the damage to the liver cells. Lord Monyham advocated blood transfusion before operating on those cases of obstructive jaundice where cholesterol content of the blood was low. H. Seckel has treated 34 cases of malignant diphtheria by blood transfusion from parents in doses of 300 c.c. to 450 c.c. at a time. The indications for this treatment are (1) The child should not be under 5 years of age. (2) There should be no congenital defects. (3) Blood transfusion should be done within first four days. (4) Hamorrhages. (5) Presence of some constitutional disturbances. (6) Absence of severe collapse. The mortality of malignant diphtheria has fallen from 80 p.c. to 40 p.c. Seckel regards this method as the most important progress in the treatment of diphtheria since the introduction of antitoxin. In congenital pyloric stenosis Fraser recommends blood transfusion in amount not greater than 10 c.c. per lb. of body weight. Blood transfusion in large amount is apt to throw undue strain on an already weakened heart. In penetrating wounds of the abdomen before, during or after operation blood transfusion is given. It must not be forgotten that during the last Great War the most valuable restorative measure for shock was blood transfusion. In purpura blood transfusion may stop hamorrhage temporarily. Severe cases of typhoid fever have been treated by blood transfusion, except in cases of intestinal hamorrhage where no venesection was performed direct transfusion of 200 c.c. from a donor was preceded by removal of 150 c.c. of blood. In hamatemesis Taylor considered that the first step in dealing with severe hamorrhage was to institute continuous blood drip transfusion. This applies to cases of chronic ulcers. It is of interest to note that oxygen does little good in reducing cyanosis resulting from administration of sulphanilamide, blood transfusion appears to be the only means of lessening cyanosis in dangerous cases. Many patients with intense cyanosis have recovered. In hamorrhagic disease of the new born blood transfusion is the important measure for saving the life. This should not be unduly delayed. Blood transfusion of 60 to 100 c.c. of compatible blood is given. It is seldom repeated. In future blood transfusion will be used more frequently as the treatment in these cases. Menorrhagia of puberty has been successfully treated by blood transfusion from

a donor who was due to commence her menstrual period in 8 or 9 days. The transfused blood at this time contains progestin which cures. Only two cases have been reported. But the theory is ingenious. In abscess of the lung repeated blood transfusion should be the routine treatment, not only to correct anæmia but for their supportive effect. In black water fever of toxic type, blood transfusion is of distinct value. It counteracts the tendency to development of severe grade of anæmia. In relapsing type of cases the patient feels weak and languid and in such cases small blood transfusions produce striking improvement in general condition. The citrated blood is used. It should be instituted as early as possible. Sterilized tap water is used in preference to distilled water in making the solution. The solution is used in strength of 3'8 p.c. and 10 c.c. is added to every 100 c.c. of blood. Grouping and compatibility tests are essential. Blood is given slowly. The total volume administered at one time is between 350 c.c. to 450 c.c. Reactions are controlled by injections.

Malaria conveyed by transfusion.—It should be remembered that malaria may be conveyed by blood transfusion. Cases are on record. In France, as a rule, the blood of the donor who has stayed in a malarious district is not employed. Many accidents have occurred after giving blood transfusion to a patient suffering from chronic nephritis. At post mortem hæmoglobin casts were found blocking the renal tubules. Urine should always be tested before giving blood transfusion, particularly in elderly patients with damaged kidneys, and enlarged prostate. Saline should be employed instead. When serious condition of the patient is seen after blood transfusion soda bicarbonate solution should be given immediately.

Transmission of syphilis.—Cases have been reported where syphilis was transmitted by means of blood transfusion. Reliable blood tests should be carried out on every donor and for this Kline flocculation test is employed.

Deaths.—Plummer has reported deaths following blood transfusion. Five were due to heart failure although ordinary precautions were taken. Death occurred from 30 minutes to 19 hours after transfusion. The sixth case died owing to incorrect grouping. Death occurred from uræmia. This patient became jaundiced on the following day of the transfusion. Baker discusses in a paper the causes of suppression of urine after blood transfusion. This was due to overheating of the blood. There is no doubt that blood transfusion carries with it risks which indicate that it must be used with discretion only after right application of every precaution.

REFERENCES

Sir Wheeler	Medical Annual	1936
Lambert Rogers	"	1937, 1938, 1939
David Harley	"	1938, 1939
S. C. Dyke	"	1939
Stanley Davidson	"	1936, 1937
J. D. Rolleston	"	1937
John Fraser	"	1937
A. Bendle Short	"	1937
H. L. Tidy	"	1938
C. White	"	1938
R. Miller	"	1938
A. Tudor Edwards	"	1939
Manson Bahr	"	1937, 1939
Hamilton Bailey	"	1937

Snake-bite and its Treatment

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Introductory.—The treatment of snake-bite is not an uncommon medical emergency in rural medical practice in India. This paper embodies the experience of the author of several sub-divisions of Bengal and particularly in one of them where he came across more than half-a-dozen of snake-bite cases every month during the summer and rainy seasons. Even in Calcutta hospitals a good many cases of snake-bite are brought in from the neighbouring districts every year. Within the first fortnight of April this year, one of the largest hospitals in Calcutta entertained about eight snake-bite cases, of which two could secure the snakes that bit them and were sent to the School of Tropical Medicine for identification. As the snakes are usually of nocturnal habits, invariably snake-bite cases occur at night, more so at the first part of the night as men go about more at that period as well as the serpents who move about for prey after resting the whole day in hiding. The usual story of a snake-bite is that the reptile was either trodden upon or kicked in the darkness by the victim before it bit him. Snakes seldom bite unprovoked except the King Cobra (*Naia hannah*) of Bengal, Assam, Burma, etc. and Mamba snake (*Dendraspis angusticeps*) of Africa who are both denizens of deep forest and rarely met with near human habitations.



5.
Method of applying the Sphatist

Classification of Snakes.—There are about two thousand species of snakes in the world of which only about 300 species are poisonous. In India and Burma there are about 330 species of snakes of which about 70 species are poisonous (40 terrestrial snakes and 30 marine snakes). The poisonous ones belong to two families: the Colubridæ and the Viperidæ. All the species of snakes included in the family Viperidæ are known as Vipers and all are highly poisonous. Included in the family Colubridæ there are highly poisonous, mildly poisonous as well as non-poisonous snakes. Besides the two families mentioned above, snakes are divided into seven more families, all of which include only non-poisonous burrowing snakes of small or moderate sizes

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Eighth Session of the Bengal Provincial Conference of The All-India Medical Licentiates' Association

(Held at Dum - Dum on 12-13 April 1941)

Dr. K. K. Dutt, General Secretary, proposes Dr. K. S. Ray, M.A., B.Sc., M.B., CH.B., M.L.A.,
to inaugurate the Conference

Worthy President, Dr. K. S. Ray, Brother Delegates
Ladies and Gentlemen,

It is indeed my proud privilege to extend to all of you a most cordial welcome to the 8th Session of the Bengal Provincial Medical Conference, under the auspices of the 24 Parganas Branch of the All India Medical Licentiates' Association, on behalf of the members of the Reception Committee and the members of the 24 Parganas Branch of the Association. The pleasant and formal duty of proposing Dr. K. S. Ray, the distinguished member of the Indian Medical Council and President of the Indian Medical Association, to inaugurate this Conference has devolved on me. We thank him very sincerely for kindly consenting to inaugurate this session. We feel very proud for having secured his sympathy and we hope the success of the conference is to a great extent ensured, now that it has secured the guidance and advice of a person whose fame and distinction in the field of medical and other social activities is well known all over the country.

Naturally I have every reason to believe that a new leaf of unprecedented achievements and laurels will be written in the records of the history of the Association with this Conference, which is held for the first time under the auspices of the 24 Parganas Branch, at the well-known Messrs B. K. Paul & Co's garden in the suburbs of Calcutta, where it is my good fortune to welcome you all today. I confess to have hesitated to shoulder the responsibility, realising the importance of the task and the shortcomings on our part, for which I crave your indulgence. It must already be known to most of you that the 24 Parganas Branch has recently been organised and as owing to the strain of the formative stage coupled with the repercussions of the present monstrous war, the members of the Branch intended to postpone the Conference to some other better time. I am glad to say that they finally reconsidered their deci-

sion and decided to hold the Conference, in order to vindicate the prestige of the Association and uphold the sense of duty of the members of the Branch at the risk of facing heavy pecuniary liabilities. We happen to meet today under such limitations, but I say very sincerely that though there may not be found manifestation of the pomp and grandeur associated with these functions, yet the sincerity and earnestness of our mission to make the conference a real success as it should be, and to receive you befittingly have always been uppermost in our minds.

Before moving to request Dr. K. S. Ray to kindly inaugurate the conference, I beg leave of you to pardon me, Ladies and Gentlemen, to say a few words more about the conference. Of course I do not propose to bring in all the problems affecting ourselves, since the address of our worthy President, Dr. K. S. Ray and the chairman of the Reception Committee would certainly cover those in detail and the House would dispose them on their merits. I wish only to draw your pointed attention to the fact that the abolition of the dual standard of medical education and qualification is the one and only chief problem in the medical profession of India and of the Licentiates in particular. The problem has become so acute that not a moment's neglect should be made, and the best and honorable remedy is to secure a uniform minimum standard of medical education and qualification at all costs. The situation is serious and unfortunate in Bengal as the Bengal Medical Act and the problem of medical schools of Bengal have not yet been in the least reformed or improved. I fervently hope that this conference will finally and definitely chalk out a suitable scheme so that there will be only one class of medical men in India and the compartmentalism in the medical profession will be done away for good. With these few observations I invite Dr. K. S. Ray to kindly inaugurate the Conference.

Dr. K. S. Ray's Inaugural Address

I do not know why I have been called upon to perform the function of inaugurating your Provincial Conference this afternoon when there are so many abler men in the field who deserve the honour much better than myself. Your choice has been probably due to the fact that I had played a humble part along with many others in the fight against the perpetuation of the caste system in the medical profession in India. The Indian Medical Association which has now been established for nearly thirteen years has been trying to achieve this object and has, therefore, thrown its door wide open so as to embrace within its fold all sections of medical men who practise the Western system of scientific medicine irrespective of whether they are graduates or licentiates. The Indian Medical Association has consistently lent its helping hand towards the demand made by your Association from time to time regarding the raising of the standard of training and for throwing open facilities of post-graduate studies to the members of the licentiate group. If the Indian Medical Association has not yet succeeded in securing all the privileges for which it has joined hands with your Association, it is only due to the fact that it has not yet been able to attain that position in the country which it ought to do. This is probably because there are still many medical men in the country who are keeping aloof and have not yet joined the Association. I have always pleaded for unity in the profession, and I feel that until the medical profession in India can speak with one voice under one banner the individual and sectarian interests cannot be safeguarded nor the problems that face us can be solved. We must act as one solid and united body to achieve this fundamental object.

You will be discussing here many of the problems affecting your vital interest which will be dealt with by your worthy President and the Chairman of the Reception Committee. I need not go into the details of the various problems except remarking on some of the urgent questions which concern not only you but the entire medical profession. First and foremost is the question of the period of training that is necessary for a medical man to whom the lives of fellow human beings can be trusted. It has been urged by various conferences that the existing four years' course should be raised to five to bring it on the lines of the curriculum recommended by the Medical Council of India, so that ultimately one uniform minimum standard of training may be adopted throughout India. One is glad to see that in some of the provinces namely, Madras and the U. P., this has been done, but unfortunately in others no steps have been taken in this connection. In Bengal there is a tendency not only to perpetuate the existing state of affairs but to further increase the number of medical schools. In answer to a question put by me before the Bengal Legislative Council it was stated that during the last 10 years only 10% of the students passed the Final Examination in four years' time, and the remaining 90% could not pass the examination within the specified course of four years. It is most unfortunate indeed that the opinion of the expert body, viz., the Medical Council of Registration in Bengal, which is also unanimous in the matter of abolishing the four years' course, remains unheeded by the authorities.

The question of providing an All-India Register is already accepted by the Medical Council of India and the time is not far distant when the licentiate will find their names also included in the All-India Register.

The existing facilities for post-graduate training are sadly inadequate and there are no arrangements in this province for special postgraduate training and whatever meagre facilities occur elsewhere in this respect are mostly denied to the licentiates' group. The profession has realised the need of specialisation and the various All-India Sectional Congress which are being organised during the last four or five years are ample evidence of this need. These conferences are held

at various times and at various places in India and serve to make up for the deficiencies of facilities for the existing post-graduate training arrangements to some extent. But unfortunately these conferences are held in different parts of India and in different seasons and it is difficult for the general practitioners to take full advantage of these conferences due to the difficulties which they have to encounter in leaving their practice so often to attend these conferences. Besides the travelling expenses come in their way and the full benefit of these conferences so far at least as their educative value on the general practitioners is concerned is thereby to some extent minimised. In order to overcome this difficulty I would humbly suggest that in future attempts should be made to hold all the All-India Sectional Conferences like the Obstetrical and Gynaecological Congress, the Surgical Congress, and the Ophthalmological Congress etc., in the same centre more or less at the same time so as to enable those of the general practitioners who attend besides the specialists to take full advantage of the valuable deliberations which are carried out in the sectional conferences.

The question of unemployment amongst the members of your section is as acute as in any other section of the profession. The reluctance of the public to pay the medical men for consultation is well known. The result is not only harmful to the medical men in depriving them of their legitimate dues but also to the public as it is likely to create an urge to prescribe unnecessarily and thereby try to make some profit out of the sale of their prescriptions. The time has come when the medical men should tell the public openly that in the interest of the medical profession it is necessary that they should be paid their legitimate dues. After all doctors have also got to live. Modern medical education is an expensive affair and if after going through a full course of training they do not get a decent living it is bound to be detrimental to the interest of the medical profession as a whole. I would suggest that the various All-India organisations should fix a particular day and hold meetings simultaneously throughout India urging upon the public to see that no doctors would be consulted free and whatever sum it be some consultation fee should be paid to every practitioner depending upon his rank and standing in the profession. There is further the question of quacks who not only affect the sphere of activities of the medical men but also inflict lot of unnecessary sufferings on the innocent public by maladministration of medical treatment. The time has come when this question of quackery has to be tackled in a proper manner. To me the only remedy seems to be some sort of National Health Insurance Scheme or the adoption of subsidised rural medical relief in this province. In this connection I would urge with all earnestness a fair consideration and a quick decision regarding the scheme submitted by Lt. Col. A. C. Chatterjee, our Director of Public Health. The scheme may have short-comings, but there is no reason why a trial should not be given and modifications made subsequently in the light of experiences of the actual workings of the scheme. This will not only solve the problem of employment amongst the medical profession of the province to some extent but also to provide some sort of rural medical relief which is sadly lacking.

I do not want to dilate on the various other problems but before I finish I should like to urge again a question which has been raised more than once as to whether the time has not come yet for the fusion of the two important organisations of the medical profession in India, namely, the All-India Medical Licentiates' Association and the Indian Medical Association into one amalgamated and solid body and as I said at Vizagapatam "it is a consummation devoutly to be desired. The accession of strength to the amalgamated body would render its influence almost irresistible. No medical men could afford to remain outside its membership, no authority could fail to give it ear. Unfortunately we are burdened with the *demonstrable heriditas* of compartmentalism within our profession that is found in no other country. Of happy augury, how-

ever, would be the fusion of these two Associations into a strong and united body working for the common welfare and highest good of the country. It is for the leaders of both our Associations to consider seriously whether the time for further hesitation has not passed. No one stands to lose by such amalgamation. Moreover, the various problems facing the medical profession as a whole would thereby be brought considerably nearer solution." The unity of the entire profession is further of particular importance in view of the stirring times through which we are now passing due to the war and who knows what fate awaits our country and what sacrifices the profession may have to undergo and what services it may be called upon to render to our fellow countrymen. Let us, therefore, sink our petty jealousies and differences and unite in the service of our motherland. With these words I have now great pleasure in declaring the Conference open.

Address of the Chairman of the Reception Committee Dr. Saratsashi Sirkar.

Revered President, my esteemed Teachers, Sister and Brother Delegates, Ladies and gentlemen,

This is the first time in the history of 24-Parganas, a district in the proximity of Calcutta, the queen city of the East, that we are inaugurating the Eighth Session of the Provincial Conference of the All-India Medical Licentiates' Association. I feel myself elated at having been given the privilege of extending to you a very sincere and hearty welcome on behalf of the Reception Committee, which I do most fervently, although I cannot but be feeling within the core of my heart the short-comings and limitations with which our reception is attended.

HISTORY OF 24-PARGANAS BRANCH

As a natural outcome of the upheaval in the Licentiate Medical Group and smarting under the pains of injustice, wrongs and ignominies heaped upon it since decades ago, this branch of the Association was started, practically at the initiative of Dr. B. M. Paul (now associated with the Tropical School of Medicine, Calcutta), on the 25th June in the year 1933 at the residence of Dr. H. C. Paul of Alambazar (24-Pgs.) our worthy President of the District Branch. The other founder members were only four in number. Dr. Mrs. A. Das Gupta, Dr. K. L. Paul, Dr. J. M. Chatterjee and my humble self. Now I feel gratified when I think how that nucleus has gradually developed into an organisation consisting of over 50 members.

OUR OBJECTS

The objects of the Association are to bring about a sense of solidarity amongst our brethren, so that we can fight out our rights and privileges that have been denied us by the imperialistic policy of divide and rule, and play our parts well in the vital medical problems of our country. We are with a steady pace adding to our strength, and I am confident that day is not far off when this compartmentalism will for good bid good-bye to the medical profession of India. I am a firm believer in united agitation of the right type for a right cause which must, in the long run, have to pay, as is even in our case evidenced by the fact that eminent persons like Dr. B. C. Roy and my revered teacher Dr. K. S. Ray advocate our cause from other platforms.

MEDICAL SCHOOL EDUCATION

Medical School Education came into being during the days of the East India Company, in the year 1822 when the medium of instruction imparted was in Vernacular. In 1895 this medium was changed from Vernacular to English. During the years 1912-18 the Provincial Medical Acts were legislated and the Indian Medical Council Act was introduced

in 1938. Medical Science is undergoing rapid developmental changes. The Indian Medical Council to maintain uniformity with the syllabus prescribed by the General Medical Council of Great Britain and Ireland and other progressive countries of the world, put forth a curriculum for the University Medical Education of all the different provinces of India. But the improvements that have hitherto been done in Medical School Education are by far below par, and can in no way stand the test of the curriculum of the Indian Medical Council. This has all the more widened the gulf of difference between the two classes of medical men, namely, the Licentiates and the Graduates, by non-recognition of the former. In other provinces of India there is a strong agitation for the establishment of a uniform minimum standard of medical education, and Madras and the U. P. have already succeeded in so doing.

But unfortunately for Bengal, which was one day the torch-bearer of medical education in the whole sub-continent, is now retreating instead of going ahead and redressing the mischief that has already been done. The Hon'ble Premier of Bengal is after establishing another medical school in his native district, in addition to the already existing nine in Bengal. These schools are turning out doctors, who are in fact so many unwelcome beings, in the Indian medical profession. This is a very grave concern indeed and should attract the immediate attention of those who are at the helm of developing the medical education of the province. Nowhere else, except in Bengal, this problem is so complicated because of the unhealthy growth in the number of medical schools. This is why we fervently appeal from this platform to the Central and Provincial Governments and to powers-that-be that either this Medical School Education be mended or ended at once. This dual type of Medical Education, a menace to the medico-political problem of India, should not continue for a day more, if possible.

Presidential Address by Rai Saheb Dr. Prabodh Chandra Ray

Doctor Sirkar, Brother Delegates, Ladies and Gentlemen,

Not in a conventional way but with all my heart, I thank you and the branches of our Association in Bengal, for kindly electing me the president of this august assembly this year. I feel, and frankly admit, that I am not quite competent to carry out the duties of this high office. It will be difficult for me to follow my worthy predecessors but I hope and trust your full co-operation will make it possible and your affection for your old friend with grey hairs, will blind you about his shortcomings and limitations. With this hope I have accepted your invitation which was intimated to me in my sick bed and at a very late hour. In the Provincial Conference held at Burdwan, presided over by Surgeon General Tate, my humble self had the honour to occupy the chair which was vacated by the president soon after his presidential address and had to take part in the concluding portion of its deliberations. But this time I felt nervous, as time has changed and we are meeting under the shadow of great and terrible happenings. Many difficult and varied problems which are matters of concern and anxiety have come before the profession. The situation is very grave and the civilised world is at the very edge of a terrible destruction. We have been compelled to feel that we are not far from these arena of devastation. Although the conditions in India are different from those of the countries plunged in war, yet it is not altogether difficult for me to visualize the position in those places. Just before the commencement of this second World War, I had the opportunity of visiting whole of Great Britain and the most part of the Continent as well as some parts of Africa and was glad to watch with great interest the advancement of medical and allied sciences, but now I see that the science, which had built up a sanitary world during the

last few decades, is now attempting to ruin and demolish it with its latest discoveries.

MEDICAL CONFERENCE

From the last Christmas we have had a series of medical conferences—the 30th All-India Medical Licentiates' Conference, presided over by our friend Dr. A. D. Mukherjee, the 17th Indian Medical Conference presided over by Dr. K. S. Roy and the 28th Indian Science Congress the Medical section of which was presided over by Dr. A. C. Ukil. It is a happy incident that all these presidents were from Bengal. There were also conference of the All-India Ophthalmological Society and All-India Pharmaceutical Conference. I am a believer in good effects of conferences. This is the only opportunity when members of medical profession from the different parts of the country get a chance to come in contact with one another and exchange views on medical politics and matters of general professional interest. This year a special situation has been created owing to the war and the medical profession has a heavy responsibility. We must be prepared for the drastic changes in our lives and we must do our part as best as we can. I remember during the last war, besides the medical men in service, the independent medical profession played a great part. But present war is not merely trench warfare with large battalions of soldiers but dropping of aerial bombs and torpedoes destroys the military and civil population alike.

It is a matter of satisfaction that in spite of controversial politics about India's participation in the war efforts, the Medical Associations in India urged on medical men to help the Government in every way they can from the very beginning of the war.

Friends, in all these conferences, the varied and important problems affecting all India matters have been discussed masterly by Dr. Mukherjee, Dr. Roy and Dr. Ukil and it is a happy coincidence that they dealt in a common understanding. I wish all of us to go through very carefully and study these extremely important addresses. We must be thankful to the Editor of our *Journal*, Dr. Viswanathan, for compiling these different addresses in the Conference issue of the *Journal* and for his thoughtful analysis of the same.

I would therefore content myself in touching on those problems which relate particularly to our province of Bengal. We must remember that most of these problems need very careful consideration; some of them have taken definite shape and solution in other sister provinces in India, but Bengal's is still a problem by itself and is in a deplorable condition.

MEDICAL EDUCATION IN BENGAL

Mr. Gokhale once said, "What Bengal thinks today, the whole of India thinks that tomorrow." But the days are changed. It pains me to say that Bengal today is lagging behind particularly in the policy of medical education. It was in Bengal where the seed of medical education in India was sown but the same Province now stands behind the other provinces. The other provinces are closing medical schools with a view to have one standard of medical education recognizable by the Indian Medical Council so that the products of these institutions might not look low before the medical world and die of inferiority complex. The lead was given by Madras and was followed by the United provinces. In our own province, the Government have lent a deaf ear to the recommendations of the Bengal Council of Medical Registration regarding the improvement of education in the medical schools. On the other hand, they are following a retrograde policy by proposing to open another medical school at Barisal. When it is well known that neither the Government nor the public want the products of these schools, why then is this zeal to add another institution to the existing schools which are stated to be below standard and for whose existence there is no justification. The recent proposal of the Government of Bengal to appoint medical graduates in

preference to medical licentiates for the posts of Anaesthetists at the Campbell Hospital, Calcutta, and at the Mitford Hospital, Dacca, which posts had been held by medical licentiates from time immemorial, is an instance to show that products of these medical schools are not wanted now-a-days. Where is then the justification for the existence of these schools? To my mind, it is a crime to create a class of medical men whom the very creator thinks of no worth when the question of giving them office of responsibility comes and it is sheer waste of public money to maintain such institutions. Let us not be misunderstood as selfish people because we want this reformation. We want to bring honour to our nation and build solidarity in our profession by drowning compartmentalism and caste system. Our Government should seriously think that they should not allow the existence of a standard of education which is not recognised by the medical world. The problem of reformation of the medical schools has become more important by the recent recommendations of the Indian Medical Council, which has advised that the present medical school education be abolished by 1947 at the latest, and that the minimum standard laid down by this body should form the basis of obtaining the registrable qualifications in India. We appeal to the Government of Bengal to give effect to the recommendations of the Indian Medical Council at the earliest possible time. My latest information is that this recommendation of the Indian Medical Council has already been placed in the hands of the Central Government with a favourable note from the department. Let not Bengal lag behind while the other provinces are making rapid strides.

Seven Medical Colleges in Bengal

In India there are twelve medical colleges and twenty-seven medical schools. Bengal alone has two medical colleges and nine medical schools. The Government of Bengal will have to close down these medical schools shortly or by 1947 at the latest. My proposal in this direction is that, Campbell Medical School may be converted into a college in no time. The National Medical Institute and Calcutta Medical School may combine to make another college. I understand Dacca Medical School has already been inspected by a committee who has suggested certain modifications which will cost about ten lacs of rupees—a major portion of which has already been subscribed. Two more schools at least, out of those at Bankura, Burdwan, Mymensingh, Chittagong and Jalpaiguri, might be remodelled into medical colleges—thus we may have seven medical colleges in Bengal alone, which may cater to the medical needs of the province by supplying one class of medical men and thereby removing the caste and compartment system also for ever.

PUBLIC HEALTH QUESTION IN BENGAL

The population of Bengal according to the latest census has gone up to about 60 millions. It has.

Districts	...	28
Subdivisions	...	72
Thanas	...	600
Union Boards	...	5084
Villages	...	100,000

Bengal villages, as we know, are hot beds of Malaria, Kala-Azar, Cholera, Small-pox, Tuberculosis and such other diseases which are preventable, but are sucking the life-blood of the villagers.

We understand the Government of Bengal have got a definite scheme this year—(a) to reorganize rural public health services, (b) project for rural water supply (c) a comprehensive scheme towards the control of Malaria, Tuberculosis, Leprosy etc. We have got great promises—and Rs. 51,13,000 as medical grant and Rs. 50,52,000 as public health grant have been sanctioned. It is now high time that these two different sides ought to be amalgamated whereby the Government will save a large portion of the grant, now spent in heads of administration, which is extremely top

heavy. With this money at their disposal, the Government may undertake many constructive works. According to present arrangements in Bengal, each district has a Health Officer and each thana has one Sanitary Inspector, one Health Assistant and one Vaccinator—this staff is expected to look after a population of 60,000, living in 170 villages, spread over an area of 80 square miles! What an inadequate staff to deal with such a large population and extensive area! Think of the situation if an epidemic breaks out and which is an everyday routine in Bengal. The Popular Government which has replaced the Bureaucratic Government must not be in the old grooves but must follow a vigorous health policy and tackle the problems of health and medical aid to serve the nation.

DUTY OF MEDICAL PROFESSION

We have, so far, commented on the Government policy. We the members of the medical profession, a body of serious and responsible persons, have a great part to play—we must help the Government in the problems of medical relief, sanitary improvements and medical education of the province. Medical men must organize themselves as a body, enlighten the people with regard to scientific subjects, specially medicine and public health. They must raise a common voice,—a strong opinion which the Government will be compelled to consult in every legislature concerning medical politics, welfare of the medical profession and public health problems of the province.

LICENTIATE TEACHERS IN MEDICAL SCHOOLS

Question of teachers automatically comes to the mind, when I ponder over the problem of medical education in schools. A good teacher is an asset to any institution. In Europe, it is for the teachers that students flock to a particular institution to which the teacher is attached. But what is the condition in our land? Teachers and demonstrators in whose hands lie the key of education should be recruited from the best students who have passed out of the institution. Educational policy of our Government should be clear and in the matter of appointment of teachers and demonstrators a doctor who has had the training for sometimes should have the preference, or a man having special training for the purpose should be appointed. I cannot understand why the services of sub-assistant surgeons as teachers have been dispensed with. They had gathered ample experience and they should be retained for their experience which counts much in education.

If it is necessary to entail more expenses to keep a good teaching staff, that should be provided for by the Government. Teachers should be given suitable allowances to keep them above want, so that they can devote more time to study.

Our members in service are not generally given study leave for furthering their knowledge. This is essential and I appeal to the Government of Bengal to make provision for study-leave for those of our members who are eager to study further study. State Medical Faculty is a body of nominated members who see to the examination of students of Licentiate course and in it we have no representation though this body is concerned with the education of our class. After repeated representation we have one nominated member from our class for the last two years and though we prayed for more representation nothing has been done to that end. We demand that there should be more representation from the class, as medical licentiates are the only men for whose education the faculty is constituted.

REPRESENTATION IN MEDICAL COUNCIL

We have got only three members in the Bengal Council of Medical Registration. If every constitution is made up

on the basis of population, why not this Medical council? We have got about 10,000 Medical Licentiates in Bengal and let the Medical Council be constituted according to numerical strength of the respective classes of practitioners that are existing at present. In order to do away with caste system amongst us, we pray that election of members of Medical Council be made on the basis of joint electorate and the Medical list be published in accordance with alphabetical order irrespective of qualifications. Madras has already done this and we cannot find cause why this should not be done here. There cannot be reasonable justification for keeping a register of medical men under different heads, such as foreign qualified, graduates and licentiates.

PROMOTION OF MEN IN GOVERNMENT SERVICE

There are instances in Bengal where a constable by dint of merit has risen to the highest position in the police department, there are instances where a clerk has gone to the Executive Council of the Viceroy, there are instances where a Deputy-Magistrate has risen to the post of a Magistrate of a district but instances are rare where a Sub-Asst. Surgeon has been promoted to the highest position, with the exception of a very few. Departmental promotion does not stand in the way of efficiency. Rather it improves efficiency as experienced and meritorious people are put to administration. I appeal to the Government of Bengal to give this matter a serious consideration and fill up a certain percentage of posts of Assistant Surgeons from Sub-Assistant Surgeons by departmental promotion.

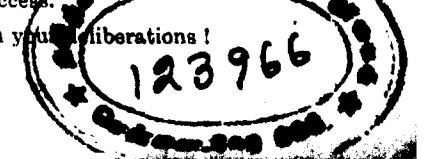
Condition of our members in the service of District Boards and Municipalities is more discouraging. A medical man in District Board is given less than what is paid to a Sanitary Inspector. I draw the attention of District Board authorities to this anomalous condition. Let there be a wide policy for better service condition to invite best people. Friends, I have not launched upon many other topics of great interest, such as Anti-Tuberculosis Campaign, Venereal Clinics, Drugs Manufacture and Drugs Import etc., which are subjects of momentous importance to the public and profession. I would have wearied you if I had gone with these subjects at length and I know you are familiar with these and have been taking interest individually and jointly.

OUR ORGANIZATION

Our Association so long served our cause by representation of our grievances to the authorities for redress. But with the introduction of Provincial Autonomy, much power has come to the popular ministers who are constituted from the majority party in the Legislative Assembly. We can put much pressure on them if we exert influence on the electorate which we can as we have great influence over the electorate. If we strengthen our organization with a network of our branches in every part of our country, we can achieve much. I appeal to all the medical licentiates of Bengal to enroll themselves as members of this Association and strengthen our organization so that existence of our influence may be felt by the members in the Legislature. No body takes notice of the weak. Make our organization strong and representative and I am sure we will be able to do miracles. I cannot claim any pre-eminence in our Association but I have loved it and tried to contribute my humble best and shall continue to serve it till the end of my life.

Ladies and gentlemen, I have detained you too long in presenting to you my own views of things and I crave your indulgence for this. I thank you again for this great honour you have done me by inviting me to preside over this conference. I appeal to you to be united in your voice and wish your conference a great success.

May God guide you in your deliberations!



REPORT OF THE PROVINCIAL SECRETARY ON THE WORKING OF THE BENGAL PROVINCIAL BRANCH OF THE ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION 1940-41 BY DR. A. N. ROY.

I take this opportunity to place before you the report of the work of the Bengal Branch of the All-India Medical Licentiates' Association since I took charge of the office from my worthy predecessor Dr. Ahi Bhushan Mukherji. It was in the seventh provincial conference held last year at Krishnagar during Easter Holidays that you all entrusted me with the heavy responsibility of conducting the work of the Bengal Provincial Branch of the All-India Medical Licentiates' Association.

Our main programme of work was to draw the attention of the leaders of different parties in the Bengal Legislative Assembly and the members of the Cabinet to the various problems for the solution of which our Association has been agitating for a long time. With that end in view we requested the Hon'ble Chief Minister to make an appointment with us so that we could arrange a luncheon party where all the members of the cabinet and the party leaders could be united to participate in a heart to heart talk on the various and very urgent problems on medical education and public health scheme. We regret we have not received the consent of the Hon'ble Chief Minister upto this date. We hope the Chief Minister will not deny us the privilege of meeting the members of his cabinet and the party leaders, as the importance of such meeting cannot be overestimated. In fact all important constructive schemes of any Government in any part of the world are drawn as a result of exchange of views between the Government and non-official organisations. We cannot understand why our popular ministers are silent on our proposal. We yet hope that our invitation will be accepted by the members of the cabinet.

We had two meetings of the Provincial Standing Committee during the year under review and considered the terms of service for recruitment to Emergency Medical Service of I. M. D., and recommended some proposals. It was the unanimous opinion of all the branches that the terms offered by the Government were far short of our expectation. The provincial standing committee made some recommendations in terms of which the general secretary was requested to draw the attention of the Government of India. The Bengal Provincial Branch opined that Medical Licentiates recruited for emergency I. M. D., should be given the start of military Assistant Surgeons' grade and the immediate grant of Viceroy's Commission. Provision for promoting some of these recruits to Kings' Commission was also recommended. The annual conference of our association gave our proposal a serious consideration and formed a sub-committee to deal with this matter. Our President Dr. A. D. Mukherji, the General Secretary Dr. M. L. Kapur and Rai Bahadur Dr. Hari Ram of Delhi, waited on behalf of this sub-committee, upon the Director General, Indian Medical Services, in a deputation and placed the matter very ably before him. We hope the Government will give our proposals the serious consideration which they deserve.

The attention of the Government was drawn to the order No. 1894 medical dated 22nd July 1939 sanctioning compensatory allowance to sub-assistant teachers of Anatomy who were debarred from private practice, when it came to our notice that the order was not given effect to. We now understand that the Government have taken action on the matter.

The Rural Public Health Reorganisation Scheme of Lt. Col. A. C. Chatterjee, I. M. S., Director of Public Health, was discussed in a meeting of the provincial standing committee and the meeting supported the general principles of the scheme but recommended that the pay contemplated to be given to the medical officers attached to health units must be improved as the suggested pay was inadequate. Because the medical officers were debarred from private practice, the pay suggested by our Association was from Rs. 75 to Rs. 200 per month with benefits of provident fund. The attention of the Director of Public Health has been drawn to this resolution. In connection with the recent change of policy regarding appointment of Medical Graduates for posts of anaesthetists at Campbell Hospital, Calcutta and Mitford Hospital, Dacca, in place of Medical Licentiates who held them from time immemorial, there was a great dissatisfaction amongst members of different branches which manifested itself by observance of a protest day on the 6th April 1941. All the branches took the matter very seriously and were of opinion that it was better to close these institutions than deprive the products of these institutions their legitimate right. The attention of the Hon'ble Minister-in-Charge of Public Health has been drawn to this

indignation and a deputation has been prayed for but no reply has yet been received. Reminders have failed to move the Hon'ble Minister. How we wish our popular minister would do the right thing in right time!

In order to gather reliable information on the condition of our members in service and in private practice, a circular letter was issued inviting the branches to supply available information in a tabulated form with suggestion of steps to redress them. With regard to private practice, all branches were emphatically of opinion that legislation was urgently necessary to put a stop to quackery in medical practice as otherwise it was impossible to maintain the ethical standard of medical practice. In fact, this is stated to be the cause which stands in the way of attracting medical practitioners to the villages. Unless the Government stop the running of un-reorganised medical schools by legislation, there is no chance to diminish quackery. It is the duty of the Government to safeguard the interest of the registered medical practitioners. The legislators are requested to make a statistical survey of the number of quacks in this country and devise means to stamp them out for the welfare of the countrymen and the qualified practitioners to serve whom they are returned by the electorate. With regard to the grievances of our members in service, it is given out by the branches that Government of Bengal have at present stopped departmental promotion of the sub-assistant surgeons. They were given charges of Sub-divisional dispensaries formerly and they are now denied these posts. They are not given the allowances when they officiate in the posts of assistant surgeons, neither their services as such are recognised. In view of the fact that economy and efficiency can be maintained, side by side, by engaging the services of the experienced sub-assistant surgeons to be in-charge of sub-divisional dispensaries by promoting them to Assistant Surgeons' Cadre, it is rather unreasonable that the Government should not consider the matter seriously, especially when they are faced with a deficit budget.

Our organisation:—We have got at present sixteen branches in Bengal. Of these some branches are doing very good work. They are alive to the various problems affecting the medical licentiates in particular and the medical profession in general and are in touch with the provincial branch for solution of these problems. After the annual conference of our Association at Bombay in December last, some of the branches have taken up the task of re-organising their branches in right earnest. Special mention in this connection may be made of Calcutta, Mymensingh and Dacca branches. Calcutta branch has made a list of all medical licentiates street by street and a special recruitment committee has been formed with Dr. B. Bose as Convenor. This committee has been entrusted with the task of enrolling members and strengthening the Association. Its work is encouraging as is shown by a great increase in the number of members of Calcutta branch. If our mother Association spends more money for propaganda work, I think Bengal membership may be doubled if not trebled. The Mymensingh and Dacca branches sent printed appeals to all the medical licentiates of the respective districts. Besides, the Mymensingh branch is making personal contact with non-members and their work so far as recruitment of members is concerned is encouraging. Posting of appeal has an educative value and their work in this respect has helped in keeping the medical practitioners informed of the work of the Association. Nadia, Burdwan and Chittagong branches are doing their best to enrol more members but the response so far has not been very hopeful.

With a view to open some more branches, letters were written to some interested doctors at Feni, Bangaon, Hooghly and Budge-Budge. The matter is receiving the attention of the local doctors and we hope in the near future to open some branches of our Association.

The Provincial Standing Committee supported my proposal to send printed appeals to all medical licentiates of Bengal. The proposal was waiting to receive the approval of the mother Association. The General Secretary recently has sanctioned the proposal and the appeal will soon be posted. We propose to make a good drive to organise our Association in a better way so that it may be more representative and prove powerful. We hope the co-operation of our branches in this respect will bring in new members to our fold.

The Provincial Committee has realised the importance of focussing our activity in the Legislature. In order to have the Indian Medical Council Act amended, all our energies should be concentrated at the doors of the Legislative Assembly. Attention of the members of the Bengal Legislative Assembly has to be drawn to many urgent and important improvements in the medical

schools that have become overdue. With that object in view we are trying to meet the party leaders and the members of the Cabinet in a party. Our branch secretaries are also requested to keep in touch with the local members of the Legislative Assembly and influence them to support our cause by drafting bills and raising questions in the Assembly House.

In conclusion I must thank the branch secretaries for the co-operation I have received from them for achieving our object and I am sure if we are united with one common object, no power on earth can check our onward march. But we must be united, we must be sincere and we must be up and doing.

Resolutions passed at the 8th Provincial Medical Conference of the All-India Medical Licentiates' Association, Bengal Branch, held under the auspices of 24 Parganas Branch.

1. This conference records with deep sorrow the sad demise of Drs. Hem Chandra Das Gupta and Nibaran Chandra Ukil and conveys its heartfelt condolence to the members of the bereaved families. Proposed from the chair and passed all standing.

2. A. Being of definite and emphatic opinion that unification of the standard of medical education is imperative for the creation of a homogeneous profession and medical service for the well being not only of the profession but of the public in general, this conference urges upon the Government of Bengal to unify the standard of medical education as had been done in Madras & U. P. and to get the medical schools affiliated to the Provincial Universities without further delay.

B. This conference is constrained to find that notwithstanding the existence of nine medical schools in Bengal, most of which are ill-equipped and inefficient as indicated by the Bengal Council of Medical Registration, the Government of Bengal is going to adopt a retrograde measure in this respect in as much as the foundation stone of another medical school has been laid at Barisal by His Excellency the Governor of Bengal.

C. This conference strongly urges upon the Government of Bengal to adopt and give effect to the policy of introducing a uniform standard of minimum medical education in this province as embodied in the unanimous recommendations of the Government of India conference on Medical School education held in November 1938 and in the joint recommendations submitted by the Bengal Council of Medical Registration and State Medical Faculty of Bengal in 1937.

Proposed by Dr. A. D. Mukherji.

Seconded by Dr. K. K. Sen Gupta.

3. This conference urges upon the Government of Bengal to amend the Bengal Medical Act so as:—

(a) to lay down and establish a uniform minimum standard of medical education.

(b) to make the Bengal Medical Council predominantly an elective body by throwing open the majority of seats for election from amongst the registered practitioners.

(c) to abolish class distinction between different classes of practitioners and by keeping a common register with practitioners' names in alphabetical order as was the practice before.

(d) to provide for an elected president and

(e) to work in collaboration but not in subjection to the Indian Medical Council.

Proposed by Dr. S. K. Dutt.

Seconded by Dr. R. Sen Gupta.

4. Resolved that the Indian Medical Council Act be so amended as to secure

(i) Establishment of a uniform minimum standard of Medical Education throughout India which is the first and foremost function of any statutory Medical Council;

(ii) Establishment of a common medical register made up of all practitioners registered by Provincial Medical Councils, which is the second most important function of a statutory Medical Council;

(iii) Interim recognition of qualifications granted by State Medical Faculties and recognised by the Statutory Provincial Medical Councils till the establishment of a minimum standard within a reasonable time.

(iv) Representation of the Medical Licentiates in the Council by a suitable amendment to section 3 (c) of the Act;

(v) An elected majority of non-official members in its composition by deleting sub-clause (c) of Section 3 so as to obtain two members from each province from among the provincially registered medical practitioners;

(vi) Exercise of its powers of medical inspection (Sections 15 & 16) not directly as now but through and in collaboration with the Provincial Medical Councils, as otherwise the statutory powers of the latter in this respect will become a mere nullity;

(vii) Amendment of Section 14 (which deals with reciprocity) in such a way as to make the Council wholly independent of the General Medical Council of the United Kingdom.

Proposed by Dr. A. D. Mukherji.

Seconded by Dr. B. Choudhuri.

5. While thanking the Government of Bengal for providing Medical Licentiates with a seat in the Governing body of the S.M.F. of Bengal when it was reconstituted in July 1939, this conference requests the Government to reserve at least four seats out of twenty seats in the Governing body to enable the Licentiates to safeguard their interests through this body.

Proposed by Dr. T. N. Chakravarty.

Seconded by Dr. D. Adhikari.

6. This conference records with concern the previous policy of the Bengal Government has been so changed for the worse that medical licentiates in Government service are being denied their dues by way of

(i) negation of promotion to the Assistant Surgeon Cadre in spite of the fact that there are cases recommended by the public Service Commission;

(ii) denying Sub-Assistant Surgeons the recognition as Assistant Surgeons while they officiate as such;

(iii) depriving of senior teaching appointments in Medical Schools, Bengal;

(iv) withdrawal of important mofussil and Calcutta posts from them;

(v) replacement of Sub-Assistant Surgeons from the posts of anaesthetists in Campbell Hospital, Calcutta and Mitford Hospital, Dacca, by medical graduates.

This conference therefore urges upon the Government of Bengal to restore these posts to the Sub-Assistant Surgeons and promote deserving members of the service to the Assistant Surgeon Cadre, as these officers have never failed to give good account of themselves.

Proposed by Dr. K. K. Dutt.

Seconded by Dr. K. L. Pal.

7. This conference endorses the opinion of the standing committee of the All-India Medical Licentiates' Association held on 15th & 16th July 1940 regarding the question of recruitment of medical licentiates to the Emergency Military Medical Service and request the Government of India to give effect to the proposals recently placed before the D.G., I.M.S., by the Emergency Medical Service Sub-Committee of All-India Medical Licentiates' Association represented by Drs. A. D. Mukherji, M. L. Kapur and Rai Bahadur Dr. Hari Ram at Delhi.

Proposed by Dr. A. N. Roy.

Seconded by Dr. K. K. Dutt.

8. This conference records with great concern the rapid growth of quack medical practitioners in towns and villages of Bengal and deplores the apathy of the Government to take measures to check the menacing increase of quackery in Bengal and urges upon the Government of Bengal to put a stop to quack medical practice by means of legislation if needed.

Proposed by A. N. Roy.

Seconded by Dr. J. Majumdar.

9. This conference requests the Provincial Secretary to take up the question of creating public opinion throughout the province regarding the conditions of education prevailing in the medical schools with a view to foster public opinion for improving the same.

Proposed by Dr. T. N. Chakravarty.

Seconded by Dr. S. S. Sarkar.

10. While recognising certain defects in the working details of the Rural Public Health Scheme prepared by Lt. Col. A. C. Chatterjee, I. M. S., Director of Public Health, Bengal, this conference is of opinion that the scheme if introduced will usher in a new era in the rural public health organisation of this province and requests the Government of Bengal to give effect to the scheme immediately after removing the defects pointed out by the Provincial Branch of the All-India Medical Licentiates' Association viz., with a starting pay of Rs. 75/- per month raising to Rs. 200/- with provision for provident fund and 60% of private fees being taken over by the Government.

Proposed by Dr. A. D. Mukherji.

Seconded by Dr. A. N. Roy.

11. This conference learns with concern that an attempt to promote a medical licentiate now working as an Assistant Surgeon in Bengal to the Civil Surgeons' grade is being held in abeyance by the Government. This conference is of opinion that on the analogy of similar promotions being made in the Punjab, United Provinces and Burma, the Bengal Government should promote such officers without further delay.

12. As due to the present international situation a large number of Assistant Surgeons have been called upon to work as Civil Surgeons, this conference requests the Government of Bengal to allow deserving Sub-Assistant Surgeons to work as assistant surgeons in the vacancies caused by the promotion of assistant surgeons.

Proposed by Dr. A. D. Mukherji.
Seconded by Dr. S. K. Dutt.

13. This conference records a vote of thanks to the outgoing President Dr. A. B. Mukherji and Provincial Secretary Dr. Amrita N. Roy for the sincere service rendered by them for the cause of Association.

Proposed by Dr. S. S. Sarkar.
Seconded by Dr. K. K. Dutt.

14. Resolved that a Sub-committee consisting of the following members be formed to consider the grievances of medical licentiates working in Manufacturing Concerns and to devise means to redress them with Dr. S. K. Dutt, Secretary of Calcutta Branch as convenor, Drs. A. D. Mukherji, Samar Roy Choudry, Sailen Chandra Roy, Jyotimoy Mazumdar and Biren Bose as members.

Proposed by Dr. Sailen Ch. Roy.
Seconded by Dr. S. S. Sarkar.

15. This conference records with approval the election of Dr. A. N. Roy by majority of votes to the office of the Provincial Secretary for the year 1941-42.

Proposed by Dr. A. B. Mukherji.
Seconded by Dr. S. K. Dutt.

16. This conference records a vote of thanks to the Chairman and members of Reception Committee of the 8th Bengal Provincial Medical Conference for ably organising this conference.

Resolutions adopted at the XVI Punjab Conference of the All India Medical Licentiates' Association held at Okara on 10-4-1941.

[The Presidential and Reception addresses were published in the previous Supplement. Ed.]

1 Bearing on the subject of recruitment.

2 This conference reiterates its protest against the humiliating and unjust scale of pay of the Sub-Assistant Surgeons in the Punjab i.e., 55-3-100, 115-130 enforced from 1st April 1937, and respectfully requests the Government to reintroduce the old scale of pay.

3 This conference reiterates its resolution No. 5 adopted at the XV Annual Conference held at Delhi on the 30th April, 1938 and again requests the Government to kindly increase the posts reserved for promotion from amongst the Sub-Assistant Surgeons to the Assistant Surgeons cadre and the number should not be less than 10% of the P. C. M. S. Cadre.

4 Resolved that the Rural Medical Officers throughout the Province be allowed to do medical legal work.

5 Resolved that a Sub-committee consisting of the following medical officers be appointed to enquire into the grievances of the rural medical officers, and to report to the Provl. Secretary before 1st July 1941, who will invite the opinion of the Working Committee, for further action in the matter.

(1) Dr. Dal Singh (2) Dr. S. L. Rawal (3) Dr. Barkat Ali

6 Resolved that the Punjab Government be requested to allot four seats to the medical licentiates on the Punjab Medical Council as recommended by the aforesaid council at its meeting held on 16-11-40.

7 While appreciating the decision of the Punjab Government to stop all recruiting to the Provincial Service, including the civil medical service, and to reserve these posts to be filled by persons with War services to their credit, this conference respectfully suggests that the vacancies occurring in the P. C. M. S. cadre be filled from amongst the S. A. S. thereby effecting a monthly saving of about Rs. 400/- for each such vacancy.

8 This conference respectfully requests the Punjab Government to kindly raise the Amritsar Medical School to a standard of college affiliated to the University.

9 Resolved that this conference requests the Punjab Government to kindly appoint Sub-Assistant Surgeon as Personal Assistant to the I. G. C. H. Punjab in the interest of a large body of Medical Licentiates in service.

10 This Conference protests against the orders of the Chief Medical and Health Officer, N. W. Ry. in debarring Ry. S. A. Surgeon from private practice. In case this step is thought essential they be granted a compensatory allowance of Rs. 25/- P. M.

11 Resolved that the Medical Licentiates when recruited in Government service should be designated as Assistant Surgeons, because the old designation S. A. S. is a misnomer.

12 This conference views with grave concern the orders of the Punjab Government regarding the position of the S. A. S. in subcharge, at the district headquarter. The Civil Surgeon is the Medical Suptd. i/c of the headquarter hospital, therefore the Assistant Surgeon, and the Sub-Assistant Surgeons in various duties should be directly under the orders of the Civil Surgeon.

13 Resolved that the fees fixed for the medico-legal examination by the S. A. S. is meagre and should be enhanced to the previous rate and to an equal level as allowed to Assistant Surgeons, in view of the fact that such certificates granted by members of these two service are of equal value in court of law.

14 Resolved that the Punjab Government be respectfully requested to stop recruitment of new men in S. A. S. cadre and fill the vacancies from time to time from amongst rural medical officers, giving preference to senior men, and be given the same pay, which was being drawn before in the District Board Service.

15 Resolved that this conference requests the Punjab Government to afford facilities to the sons of medical men, when seeking admission in Medical School or College, or when applying for an appointment in medical service, as were already in force. This procedure will be in consonance with the practice prevailing in other departments, viz., Police, Rly, etc.

16 Resolved that this conference conveys its thanks to the Hon'ble Minister of Education for his kindly opening the Conference.

17 Resolved that a vote of thanks be conveyed to the Civil Surgeon and District Medical officer of Health, Montgomery, for their kindly presiding over the Scientific Session, and to the president Municipal Committee for placing the hall of the local high school and the Municipal Shamiana at the disposal of the conference.

18 Resolved that suitable standard type quarters be provided for women S. A. S. in the hospitals, where they do not exist.

19 Resolved that vote of thanks be conveyed to the retiring office-bearers.

20 This conference learns with regret the sad demise of Dr. Rustam Ali and conveys its heartfelt sympathy to the family in this sad bereavement.

21 The following office-bearers were elected.

President:—Rai Bahadur Dr. Mathra Das Pahwa, Lahore.
Vice-President:—Dr. Cahabildas and Dr. Ali Hassan.
Provincial Secretary:—Dr. Dal Singh, I. C. P. S., (Bombay) (M. O. Talwan, District Jullundur.)
Joint Secretaries:—Dr. Bihari Lal R. M. O. Ukalana Dist. Hissar and Dr. S. A. Bukharey, Hojra Dispensary, Montgomery Dist.

WORKING COMMITTEE

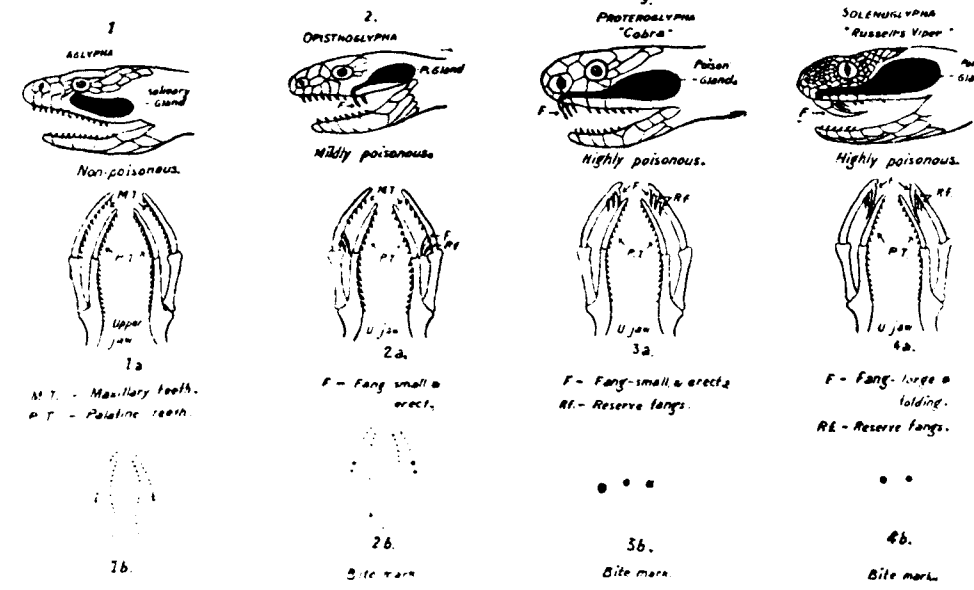
- No. 1 to 7 office-bearers.
8 Dr. G. C. Blaggana.
9 „ Noor Mohammad Amritsar.
10 „ Kishore Chand Amritsar.
11 „ Dr. S. M. Najmud-Din Khanna.
12 „ Dr. S. L. Rawl.
13 „ R. B. Dr. Hari Ram Delhi.
14 „ Jai Gopal Okara.
15 „ Tulsi Das Mehtani Kabirwala.
16 „ Raja Ram P. C. M. S.
17 „ Syed Ali Hassan.
18 „ Manohar Lal Kapoor.
19 „ Mohd Usaf Khan.
20 „ Khan Chand Wohra.

except the family Boidae which includes very large serpents such as Pythons and Boas. Though the Pythons and Boas are absolutely non-poisonous, they can kill within a few minutes small animals and even a man, by constricting the thorax of the victim with powerful coils and thus stopping the heart.

Dentition of Snakes and bite marks.—It is possible in many cases to ascertain the nature of the snake, whether poisonous or not, by the marks of teeth left after bite on the body of the victim. The Colubrine snakes are divided into three series according to the arrangement of their teeth.

Series A—*Aglypha*—These are non-poisonous Colubrines with four rows of solid recurved teeth on the upper jaw; laterally two maxillary rows, medially two palatine rows. (Figs 1, 1a). They have no grooved teeth or fangs. Fig. 1b represents the teeth marks left after their bite.

Series B—*Opisthoglypha* or Posterior-fanged Colubrines—There are four rows of teeth as in the previous



series; in addition they have the hindmost teeth in either maxillary row replaced by a small poison fang (Figs. 2, 2a) communicating with a small poison gland on either side. Fig. 2b. represents the teeth mark left after their bite. They are poisonous to small animals, but only mildly poisonous to man producing only local symptoms.

Series C—*Proteroglypha* or Anterior-fanged Colubrines. They have two rows of solid palatine teeth but the maxillary rows of teeth are replaced by 3 or 4 large grooved teeth or poison fangs on either side situated anteriorly (Fig. 3a). The foremost of them is the main fang which is permanently erect and communicated with large poison gland situated in the temporal region, (Fig. 3) the rest are reserve fangs which take the function of the main fang if it is accidentally broken. Fig. 3b represents the fang marks left after the bite. They are all highly venomous and included in this series are the common Cobra (*Naia tripudians*), the King Cobra (*Naia hannah*), the common Krait (*Bungarus caudatus*), the banded Krait (*Bungarus fasciatus*) and the Coral Snakes. All the sea snakes, which are very abundant in the Indian Ocean, are included in this series and are highly

venomous. They are easily distinguished from land snakes as they possess flat oar-shaped tail unlike land-snakes who all have round cylindrical tail.

The family Viperidae, which is divided into two sub-families—Viperinae or pitless or true vipers and Crotalinae or Pit vipers (they have a depression or pit between the nose and the eye), is included in the series.

Solenoglypha.—Two common Pitless vipers of India are the Russell's viper (*Daboia russellii*) and the Sawscaled viper or Phooras (*Echis carinatus*). Of the Pit vipers the green pit viper (*Lachesis gramineus*) and the Himalayan pit vipers (*Ancistrodon himalayanus*) are commonly met with. The notorious rattle snakes and copperheads of America are pit vipers. The arrangement of teeth of Solenoglypha is like that of a Proteroglypha, but the poison fangs are very large and lie concealed in a mucous fold. The fangs can be folded back against the roof of the mouth when not in use (Fig. 4, 4a) unlike those of Proteroglypha which are much shorter and permanently erect. The fang marks left

after bite are two deep punctures half an inch apart (Fig. 4b).

Toxic principles in snake venom.—The venom glands of poisonous snakes are specialised salivary glands and the venom secreted by them possesses toxic principles, which help in killing the prey, and enzymes which help in preparing the body of the prey for digestion in the stomach, which is so perfect that except the nails, hairs or feathers of the victim everything is digested. The venom of Colubrine and Viperine snakes widely differ from each other in their chemical nature as well as their toxic principles. Even the toxic principles of venom of different species of the same family differ. The common Cobra (*Naia tripudians*) and the Russell's vipers (*Daboia russellii*) are the two common poisonous snakes in India and the composition of their venom is given below. Snake venom contains coagulable* proteins (albumins, globulins, pseudoglobulins), non-coagulable proteins (albumoses and proteoses) proteolytic enzymes and salts, ash and water. The coagulable and non-

* Coagulable by heat.

coagulable proteins and enzymes contain the toxic principles.

In the cobra venom, the coagulable proteins are of the nature "hæmolyisin" and "anticoagulin". They represent about 38 to 40% of the total toxicity of the venom. As the names imply "hæmolyisin" hæmolyses blood corpuscles and "anticoagulin" prevents coagulation. The non-coagulable proteins of cobra venom are of the nature of "neurotoxin" which acts on the nervous system. They represent 50% of the total toxicity. The proteolytic enzymes of cobra venom contain about 10 to 12% of the total toxicity and are of the nature of "kinasis".

The coagulable proteins of Russell's viper venom contain "hæmorrhagin" which destroy the endothelial lining of the capillaries and thus produce hæmorrhages. They represent about 70 to 75% of the total toxicity. The non-coagulable proteins contain (1) "cytolysin" which mainly acts on the cells of the liver and kidneys; (2) "thrombase"† which produces intravascular thrombosis and (3) a "cardiac depressor". They represent about 20 to 25% of the total toxicity. The proteolytic enzymes are also of the nature of "kinases", and represent about 3% of the total toxicity of the Russell's viper venom.

Minimal lethal dose of venom.—The M. L. D. of venom for man in different snakes vary widely. Fifteen milligrammes or about quarter of a grain of dried cobra venom kills a man. On an average a cobra pours about 200 to 300 mgms. of venom per bite, i.e., about 12 to 20 times the M. L. D. About 40 mgms. or 3/5th of a grain of Russels Viper's venom is the M. L. D. for man and on an average 80 to 100 mgms. is injected with each bite. Krait venom is fifteen times more toxic than cobra venom, i.e., about one milligramme or 1/60th gr. kills a man and it injects only about 5 mgms. per bite. The M. L. D. for Echis venom is about 5 mgm. and only about 10 mgms. is injected with each bite.

Symptoms after snake bite.—As the nature of toxic principles differ in Colubrine and Viperine snakes, the symptoms produced on the victim after bite are also different.

Symptoms after cobra bite.—(Colubrine-Proteroglypha). **Local.**—Immediately after the bite there is burning sensation at the site which passes off in a few minutes, followed by loss of sensation and paralysis of area and around, where a moderate amount of œdema supervenes. There is oozing of blood from the fang punctures as the blood does not coagulate due to the action of "hæmolyisin" and "anticoagulin".

General.—The "neurotoxin" acts on the motor end plates of muscles, on the respiratory centre and the centres of the 9th, 10th, 11th, and 12th nerves. The symptoms produced in order of sequence are as follows: drooping of the eyelids, unsteady gait, incoordination of speech, slight difficulty in respiration. An uncontrollable desire to lie down follows. Paralysis starts from the lower extremities irrespective of the site of bite except the bitten area, gradually mounting upwards. With the complete paralysis of all the voluntary muscles there is drooping of the head, and difficulty in deglutition.

† The presence of thrombosis in viper venom is taken advantage of in the treatment of hæmorrhages caused by extraction of teeth, epistaxis etc., with local application of such preparations as "stypven" or by injection such as "viproxyl".

Asphyxial symptoms supervene, breathing becomes shallow and rapid and the face becomes blue. There is profuse salivation. Later convulsions start and there is vomiting and involuntary passage of urine and fæces. Finally the victim dies of respiratory failure. The pulse is not much affected except due to symptoms of shock as a result of fright. The heart continues to beat after the respiration has failed. Consciousness is retained almost to the last stage. Death takes place in untreated cases from one to six hours.

The symptoms after Krait bite are similar to those of Cobra-bite, with an additional symptom of violent abdominal pain, due to hæmorrhages in the stomach and the intestines. Authentic cases of sea-snake-bite is rare. The symptoms produced after their bite are similar to those after cobra-bite.

Symptoms after the bite of a viper "solenoglypha"—**Local.**—Immediately after the bite there is a intense burning pain which persists along with the incessant oozing of blood from fang punctures. There is also marked œdema and redness of the area. There is no loss of sensation or paralysis of the bitten part.

General.—The "hæmorrhagin" destroys the endothelial cells of the finer capillaries and blood escapes through them. In consequence there is evidence of external as well as internal hæmorrhages. There is epistaxis, hæmaturia, hæmoptysis, hæmatemesis, malaena, sub-conjunctival hæmorrhages and extensive petichia. Convulsions may supervene early due to hæmorrhages inside the brain and there may be loss of consciousness. Nausea and frequent vomiting is the rule. The pulse is feeble and rapid due to initial shock as an effect of fright, and then there is gradual fall of blood pressure due to secondary shock or collapse which invariably supervenes in fatal case of viper bites. Secondary shock comes on gradually and persistently unlike the secondary shocks after traumatic or obstetrical hæmorrhages or after extensive burns which are rather sudden. Four factors come into play in the causation of collapse in viper bite:—(1) loss of fluid due to extensive hæmorrhages; (2) loss of peripheral resistance; (3) direct depressant action of the venom on the vasomotor centre and (4) on the cardiac musculature. Death takes place in two to six days. The above symptoms are produced if a moderate quantity of venom is injected. If on the other hand a large of quantity of venom is injected with the bite death supervenes in a few hours due to acute cardiac and vasomotor failure, or if by any chance the venom is introduced directly into a vein death follows within a few minutes due to intravascular and intracardiac coagulation, but this occurrence is very rare in human beings. Whereas death after Russell's viper bite usually occurs due to vasomotor paralysis or by septic absorption from the extensive local gangrene, Echis bite causes death due to multiple hæmorrhages.

Symptoms after a bite of a non-poisonous snake—**Local.**—There is no appreciable swelling or redness, neither there is any loss of sensation or paralysis. The teeth marks if present are superficial and there is no oozing of blood from the bitten area.

General.—The very fact that he has been bitten by a snake frightens a man so much that, even if the snake happens to be non-poisonous, varying symptoms may follow depending upon the mental make-up of the victim. In a strong nerved individual or in children

there is no symptom but in a nervous individual symptoms of primary shock due to fright set in very quickly. The symptoms are pallid face, shallow breathing, feeble rapid pulse, almost inaudible heart beat, low blood-pressure, cold and clammy skin. Later faintness may supervene. Cases are on record where death due to shock has taken place after the bite of a non-poisonous snake. The author came across a case like this in Behala, a suburb of Calcutta.

Diagnosis.—The additional symptoms of primary shock obscures the picture so markedly that in many cases it is very difficult to differentiate the symptoms of poisoning after Colubrine or Viperine bite until at a later stage when treatment is of no avail. Fortunately, recently introduced polyvalent antivenene which is effective both against Colubrine and Viperine poisoning solves to a great extent the question of differential diagnosis. To differentiate a non-poisonous from a poisonous bite, local symptoms and absence of fang marks will help. General symptoms which may simulate poisoning symptoms due to psychological fright may lead to difficulty in diagnosis. When the snake is available examination of the teeth will disclose whether it is poisonous or not.

Prognosis.—The prognosis depends upon the quantity and quality of the venom injected, the body weight of the victim, the site of the bite, first aid measures adopted before the arrival of the doctor and the availability of proper quantities of specific antivenene.

Post mortem signs.—It is not uncommon for a Medical Officer in charge of a station to conduct a post-mortem examination on the dead bodies suspected to have died of snake bites. The following post-mortem signs are expected.

Colubrine bite.—Two punctured wounds about 1/2 to 3/4" apart with surrounding œdema will be found at the site of bite (Fig. 7). Deep incisions locally will reveal hæmolysed blood and little necrosis. The lungs and the abdominal organs will be normal except for the hæmolytic condition of the liver and kidneys. Bright red blood will be found in the chambers of the heart and in all the blood vessels, especially those of the cerebrum. There may be hæmolytic pericarditis.

Viperine bite.—Two punctured wounds will be similar to Colubrine bite but much deeper (Fig. 4b). Locally there will be intense swelling and the part will be blue due to extravasation of blood. On incising the bitten area, both hæmolysed and clotted blood will be found and the local blood vessels will be found thrombosed. Due to necrosis, the local tissues will be jelly like in consistency and red in appearance. Signs of intense like in consistency and red in appearance. Signs of intense congestion and hæmorrhage will be found in the lungs, stomach, intestines, pancreas, liver, kidneys and spleen. The last organ will be found definitely enlarged. There will be intense congestion of all vessels of the body especially the mesenteric vessels. Thrombosis of portal veins and its tributaries is common. Blood may be found inside the pericardium, thorax and abdomen. Intracardiac thrombi involving the cavities of the right auricle and the ventricle are almost invariably present when a large quantity of venom is responsible for the death.

Treatment.—The treatment of snake-bite is divided into two heads, viz., (A) local treatment: (B) general treatment. (A) *Local treatment* consists of (1) localising

the venom by proper ligatures to prevent the passage of venom into the general circulation; (2) neutralising the venom at the bitten area or (3) eliminating the venom from the site of bite or (4) amputation. (B) *General treatment* consists of (1) neutralising the venom in the general circulation by injection of antivenene, and (2) combating various symptoms, complications and sequelae.

(A) *Local treatment.*—(1) *Localising the venom by proper ligatures.* Majority of snake bites are in the limbs and an effective ligature tied within a few minutes after snake bite goes a longway in saving the life of the victim. A rubber tourniquet is not always available, but a thick strip from the margin of a cloth which is always handy may be loosely knotted round the limb, a few inches proximal to the bitten area, and a stick is then inserted between the limb and the ligature and is twisted to tighten the ligature which stops all circulation. This procedure is very painful but have to be resorted to. The stick is then fixed to prevent unwinding (Fig. 5). A similar ligature must be applied around the thigh or arm where there is a single bone. The ligatures are loosened, every half to one hour for a minute only, to flush the limb with blood after which the ligatures are tightened as before. The ligatures should on no account be taken away altogether unless the requisite quantity of antivenene has been injected, or the venom has been neutralised or eliminated from the site of bite. In this respect the snake-charmers, "Rojas," etc., are notorious culprits because invariably they untie the ligature and apply their indigenous remedies and chant mantras with the result that the victim stands no chance of survival even after proper medical treatment.

(2) *Neutralising the venom locally.*—Infiltration of some chemicals which destroys the venom locally have been advocated by many authorities. Any one of the following may be tried:—1 to 2% solution of potassium permanganate; 1 to 5% solution of gold chloride; 1 to 3% solution of bleaching powder; hydrogen peroxide, etc. Pot. permanganate is always available and 10 to 20 c.c. of 1 to 2% solution is injected around the bitten area till the solution oozes out of the fang punctures. Powdered gold chloride is available in 15 gr. ampoules and by dissolving the powder in 20 c.cm. of distilled water about 3% solution is available, which must be infiltrated around bitten area. The area sloughs out within a few days after gold chloride injection, and as sometimes uncontrollable secondary hæmorrhages occur so this drug is not very safe to use. The area should not be incised if gold chloride is injected. Some authorities advocate the injection of antivenene locally to neutralise the venom.

(3) *Elimination of venom from the site.*—If pot. permanganate has been infiltrated, after waiting of about an hour to allow it to neutralise locally as much venom as possible, the fang punctures as well as the surrounding area must be incised deeply and freely to let out the poisoned blood. Bleeding should be encouraged by squeezing the area around with gloved hands. Suction, by means of a breast pump where possible may be tried. Venesection below the ligature is also helpful in eliminating the poison. Crystals of pot. permanganate is introduced forcibly inside the incised wounds to further neutralise the venom. If the bite, instead of being on the limbs, is on the trunk or head where application of

ligature is not possible, early free incision and even excision of the area is advised.

(4) *Amputation*.—If the bite is on a finger or a toe immediate ligature and subsequent amputation often saves the life of the victim.

B. *General treatment*.—(1) *Neutralising venom in the general circulation* :—

The only specific treatment against snake-bite is the early administration by the intravenous route of large quantities of antivenom serum or antivenene. The dose of antivenene required depends upon the time elapsed after the bite. It has been calculated that one c.cm. of concentrated antivenene can neutralize 0.1 mgm. of dried cobra venom when the serum is given subcutaneously or intramuscularly and 0.4 mgm. when given intravenously, and neutralises 0.3 mgm. and 0.8 mgm. of dried Russell's viper venom when the serum is given subcutaneously and intravenously respectively. From the average amount of venom injected after a bite mentioned elsewhere the dosage of antivenene can be calculated. In India it is not before several hours after snake bite that the help of a doctor is requisitioned. So on an average 100 to 150 cc. of concentrated antivenene is required in cases of cobra bite and about 40 to 50 cc. in case of Russell's viper bite. Such large doses of intravenous serum injection may cause anaphylactic shock which should be guarded by subcutaneous injection of 0.5 cc. or 1 cc. of adrenalin solution. The author has given 50 cc. of concentrated antivenene intravenously diluted with 50 cc. of 25% glucose solution at the beginning and then the rest of the dose slowly by diluting with a pint of 5% glucose in normal saline. There were no ill effects on the patients. After the requisite quantity of antivenene has been given, which is rarely possible in a moffusil, the ligatures may be done away with; but if the dose of antivenene is insufficient, the ligatures are loosened for a few minutes and again tightened and local and symptomatic treatment should be continued. It has been possible to save patients after Russell's viper bite by vigorous local and symptomatic treatment even when the dose of antivenene is inadequate but it is seldom possible to save a patient after an effective cobra bite when adequate dose of antivenene is not available. Antivenene against Krait and Echis

† Antivenene is produced by giving repeated subcutaneous injections of snake venom into horses, commencing with much below the subminimal lethal dose for horses, and gradually working up the dose to several times the M.L.D. within the course of several months. The horse is then bled in three sittings to a total quantity of about 20 litres. The serum is separated and then concentrated by the ammonium sulphate method. As the venom of snakes differ from each other in toxic principles which are the antigens, they produce different antibodies in the body of the horse. Consequently antivenene produced from the venom of snakes of one country is not effective against the venom of snakes of another country even if the snakes belong to the same family. Similarly antivenene against cobra venom (Colubrine snake) is not effective against Russell's viper venom (Viperine snake). To surmount this difficulty the Central Research Institute, Kasauli (Punjab) where antivenene is produced in India issues concentrated polyvalent antivenene in 10 c. cm. ampoules which is effective against both cobra and Russell's viper venom. The serum is concentrated four times so that 10 cc. equals 40 cc. of unconcentrated serum. It is available from the Director, Central Research Institute, Kasauli (Punjab) at a cost of about Four rupees per ampoule. Antivenene serum deteriorates on keeping like other antisera, so each ampoule is dated, and after that date there is loss of potency. Sometimes there may be some flocculation at the bottom of the ampoule due to keeping which does not affect potency. The flocculant mass should be filtered or strained off before using the serum.

venom is not available in sufficient quantities as both the snakes do not survive captivity and thus sufficient quantity of venom cannot be collected to produce antivenene horses. Krait bite is rare but invariably ends fatally.

(2) *Treatment of symptoms, complications and sequelae*. (a) *Respiratory failure*.—Cobra bite produces gradual respiratory failure. To combat this artificial respiration has to be started early. Where an iron lung (electrically driven artificial respirator) is available, the administration of artificial respiration is very easy. Injections of Coramine, Icoral, Cardiazol and other respiratory stimulants should be given.

(b) *Hæmorrhage*.—For multiple hæmorrhages after Viper bite, injections of calcium salts, congo red solution, Vitamin C, such as 'Redoxon,' and hæmostatic serum etc., are effective. If possible blood transfusion should be done. It is helpful both in hæmorrhage and collapse.

(c) *Primary shock*.—A cup of strong tea or coffee or a dose of spt. amon aromat is given first. Administration of alcohol is to be depreciated. The patient should be laid down flat, reassured and calmed. Injections of Adrenalin, Pituitrin, Cardiazol, Veritol may be given. Veritol is a very effective peripheral stimulant. Strychine and morphine are contra-indicated.

(d) *Secondary shock and collapse*.—Hæmorrhages and vasomotor failure may lead to collapse which should be combated by repeated intravenous injections of normal saline with 5 to 10% glucose, one to two pints at a time, or if possible by continuous saline injection intravenously by drip method. As already stated blood transfusion should always be given wherever it is possible. Some authorities advice intravenous injection of gum-saline where blood transfusion cannot be arranged.

(e) *Sepsis*.—Septic absorption from the site of bite after viper bite is common. Early administration of anti-streptococcal serum, or better, sulphonamide group of drugs prevents this complication.

(f) *Gangrene*.—"Thrombase" of viper venom produces thrombosis of vessels near the bitten area and consequent gangrene. Early local administration of antivenene and frequent hot fermentations prevent gangrene. But once it supervenes amputation of the part is the only remedy.

(g) *Hæmarthrosis*.—Hæmopericardium, hæmothorax, pyæmia and nephritis are some of the sequelæ which follow survival after viper bite. Each of these requires special line of treatment.

Prevention of snake-bite.—In a snake infested country like India lanterns and torches should be used while going out at night. Use of shoes prevents to some extent the chance of snake bite. It is always unsafe to put hands in dark corners, below wooden logs or rat holes. People should not sleep on the floor of the room but always on charpoi with mosquito curtain.

CONCLUSION

It has been estimated that about 20,000 people die of snake-bite in India every year. The majority of which is caused by cobra-bite as common cobra is ubiquitous all over India and lives near human habitations. Next to Cobra, Russell's Viper is responsible for a large number of fatal cases. It is also a fact that

thousands of people survive every year after cobra, viper or other poisonous snake-bites because snakes on many an occasion cannot inject a lethal amount of venom either due to defective bite or due to previous expenditure of the venom in killing and digesting a prey or a portion of the venom might have been absorbed in the garment of the victim through which the snake might have bitten. These cases, as well as thousands of bites from non-poisonous snakes, are claimed to be cured by quacks, snake-charmers and "Rojas" with the help of hundreds of indigenous herbs, potions, snuffs, inhalations etc. Mhaskar and Caius of Bombay and Chopra of Calcutta School of Tropical Medicine have tested more than 500 different specimens of indigenous snake-bite remedies to save the life of experimental animals injected with lethal doses of snake venom. Unfortunately not a single indigenous remedy have been found to possess any antidotal value against snake venom.

BIBLIOGRAPHY

- Acton H. W. (1921) *The practice of Medicine in the Tropics*. Edited by Byam, W. and Archibald R. G. Henry Frowde and Hodder and Stoughton, 1-2, Bedford St. London.
- Basu, U. P. (1938) *Proc. 25th Indian Science Congress*, Med Sec. p. 235.
- Boulenger, G. A. (1890) *The Fauna of British India including Ceylon, & Burma. Reptiles and Batrachia*. Taylor and Francis, Red Lion Court, Fleet Street, London.
- Chopra, R. N. (1938) *Indigenous Drugs of India*. The Art Press, 20, British Indian St., Calcutta.
- Chopra, R. N. (1936) *A Hand Book of Tropical Therapeutics*. The Art Press, 20, British Indian St Calcutta.
- Chopra, R. N. (1935) *Cal. Med. Journ.* Vol. XXIX, p. 459.
- Chopra, R. N. and Chowhan, J. S. (1938) *Ind. Med. Gaz.* Vol. LXXIV, p. 422.
- Chowhan J. S. (1938) *Antiseptic* Vol. XXXV, p. 544.
- Curran, C. H. (1937) *Snakes and Their Ways*. Harper & Brothers, New York and London.
- Ditmars, B. L. (1931) *Snakes of the World*. The Macmillan Company, New York.
- Fayrer, F. (1874) *The Thanatophidia of India* J & A. Churchill, New Burlington St. London.
- Fitzsimons, F. W. (1932) *Snakes and Treatment of Snake-bite*. The Speciality Press, Cape Town.
- Ghapurey, K. G. (1937) *The Snakes of India*. The Popular Book Depot, Bombay.
- Hamilton, Fairly N. (1936) *The British Encyclopedia of Medical Practice*. Vol. II. Butterworth & Co., (Publishers) Ltd., Bell Yard, Temple Bar, London.
- Hamilton Fairly N. (1929) *Bulletin of the Antivenen Institute of America*, Vol. III, p. 65. Glenolden Pa., U. S. A.
- Kinghorn, J. R. and Longman Herber A. (1939) *Snakes of Australia*. Angus & Robertson Ltd., 89, Castlereagh St., Sydney.
- Mhaskar K. S. and Caius J. F. (1931) *Indian Med. Res. Mem.* No. 19, Thacker Spink & Co., Ltd., Calcutta (1938).
- Wall, F. (1918) *The Poisonous Terrestrial Snakes of Our British Indian Dominions*. Bombay Natural History Society.
- Roy, A. C. & Chopra, R. N. (1938) *Some Biochemical Characters of Snake Venom*. *Ind. Jour. Med. Res.*, 26, 1 July, 1938.
- Majumdar, A. R. (1940) *Certain Observations on Snake-bite*. *Transactions of the Calcutta Medical College Re-Union* (1940-41)

Treatment of Cerebral and Algid Malaria*

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In a simple case of malaria treatment consists in giving sufficient dose of quinine in some form or other, but in complicated and atypical cases e.g., cerebral and algid, treatment resolves itself into two parts. (1) Treatment of malaria infection and (2) treatment of symptoms.

Cerebral types of malaria are of various kinds: hyperpyretic, meningitic, comatose, paralytic etc.

In most of these cases, oral administration of quinine is often difficult and slow in its action. So either intramuscular or intravenous routes are to be adopted. It is believed that treatment by both these routes are of equal value because the time taken by quinine to go into the circulation is about the same in both. But intravenous quinine has the disadvantage that it is depressant to heart and that the excretion is rapid.

In all cases of cerebral malaria due care should be taken to clear the bowels by soap water and castor oil enema at the very onset and by calomel and saline purge when oral administration is possible.

In all hyperpyretic cases the idea should be to reduce the high temperature first. Hydrotherapy in the form of cold water douching on head, ice-bag on head, cold sponging of the whole body and cold packing is useful. A dose of aspirin and phenacetin may be tried also.

In cases with convulsion in children which are commonly found here, the impending cardiac failure requires foremost attention. Injection of strychnine and digitalin every 2 to 3 hours for the first 12 hours is useful. Oral brandy or adrenalin under the tongue is also recommended. In suitable cases glucose solution (25% in 10 cc. dosage) given intravenously is both cardiac tonic and nourishing. In cases with violent delirium, nervous sedatives e.g., bromide and chloral hydras, may be tried cautiously besides intravenous glucose and hydrotherapy.

Another drug recommended in all cerebral cases is hexamine. It is said to act by loosening the embolism of cerebral arterioles by malarial parasites, which is supposed to be the cause of cerebral symptoms.

Where oral administration is possible, a dose of alkaline mixture given $\frac{1}{2}$ hour before each dose of quinine as advocated by Col. Sinton, is a good mode of treatment.

Algid type of malaria may be again of various forms e.g., gastric, choleraic, dysenteric and hæmorrhagic.

In all algid types, injection is the best method of giving quinine as absorption from intestines is hindered. In such cases symptomatic treatment is necessary, besides anti-malarial drugs.

In choleraic type, the diagnosis is often marked by cholera-like symptoms. Hence blood-film examination is essential. The patient is usually admitted in collapsed condition with sub-normal temperature but if

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Cerebral Malaria

• H. C. Das, L. M. F., A. M. O., Keyhung T.E., Assam.

The literature regarding cerebral malaria is already full and I do not feel competent to speak dogmatically on the subject but the present paper is based on my personal experience of the complaint in tea gardens in Assam where, unfortunately, it is all too common.

Definition.—The term is applied to cases of malaria, usually of the subtertian variety, in which the cerebrum is affected and cerebral symptoms appear.

Etiology.—Red blood cells which have become parasitized develop the property of "stickiness" and tend to adhere together and to the walls of the blood vessels containing them. The more severe the infection, the more likely will it be that this property will result in thrombosis and embolus formation and it is obvious that such thrombosis and embolus formation can occur in the blood vessels of the brain just as much as anywhere else.

Pathology.—The pathological changes found in the brain are those always associated with malaria, namely, degeneration and oedema following blockage of capillaries together with pigmentation.

Course.—The principal symptoms seen are hyperpyrexia, convulsions, coma, aphasia, paralysis, and meningism. The picture will vary according to the portion of the brain affected. In some cases the capillary blockage may extend to the bulbar area with ensuing cardiac or respiratory failure and a fatal termination. In my opinion some of the deaths in cases of convulsive type are due to this cause.

In those cases where the temperature-regulating centre is affected the disease takes a hyperpyrexial form, the temperature rising to 104° and up to 107° F. In these cases intense headache and acute delirium are noted.

The type most often seen in tea garden practice is the convulsive type, usually in young children. It is probable that in these cases, in addition to the capillary blockage, there is also irritation of the nerve tissue by toxins liberated from the malaria parasites. It is likely that the frequency with which this type is found in children is due to the fact that the undeveloped brain of the child is more susceptible to irritation. While the temperature is rising, the patient suddenly develops slow clonic movements of the limbs followed by tonic contractions. The neck muscles become stiff, the hands are firmly clenched, the body becomes arched and the patient becomes unconscious. After an indefinite period relaxation occurs and consciousness returns. The whole process may be repeated an indefinite number of times and possibly in rapid succession until permanent unconsciousness supervenes and death occurs unless treatment is energetic and efficient.

In certain cases the onset is abrupt with intense headache, delirium and stupor which rapidly deepens into coma. An initial chill may not have been noticed.

The fever is usually high but in some cases the temperature is subnormal and there are symptoms of collapse. In these cases death is apt to occur before consciousness is regained.

In my personal experience aphasic, paralytic and meningitic cases are very rare.

Prognosis.—Probably at least half the deaths from malaria in India occur in cerebral cases. The main difficulty is that there is little time available for therapeutic measures but if the case is seen early the prognosis is not unfavourable. In those cases, however, where coma is already deep and where there is co-existing anaemia the prognosis is grave. Cerebral malaria must be considered one of the most important of medical emergencies, at any rate, in Assam.

Diagnosis.—The only certain diagnosis is by finding parasites in the peripheral blood. Cerebral malaria must be distinguished from alcoholic poisoning, heat-stroke, meningitis, epilepsy and convulsions due to worms, rickets and other causes.

Treatment.—The treatment of choice is combined intravenous and intramuscular quinine supplemented by adrenaline. An intravenous injection of quinine bihydrochloride grs. 10 in 5 to 8 cc. of distilled water or normal saline is followed by 1 cc. of adrenaline chloride intramuscularly or subcutaneously. A further twenty grains of quinine bihydrochloride is given in two doses by injection into the gluteal muscles during the day. It is not necessary to repeat the intravenous medication, but so long as there is mental dullness or inability to swallow intramuscular injections should be continued. As soon as the patient is able to swallow, the quinine should be given orally and treatment should be continued until a total of 200 grains have been given but the daily dose should never exceed 30 grains. On the completion of the course of quinine I like to give two days' treatment with plasmoquine. Needless to say in the case of children the above doses are adjusted for age.

In all cases the bowels should be opened immediately by soap or glycerine enemata and cases with hyperpyrexia must be also given hydrotherapy e.g., cold water douching or the application of an ice bag to the head. The heart must be watched carefully and adrenaline, strychnine or digitaline given as may be necessary. Especially in comatose cases and those where it is clear that gross cerebral embolism has occurred rectal or subcutaneous saline may be given. A warning regarding the intravenous injection of quinine may be given here. This form of therapy is apt to be followed by a sudden fall in blood pressure and collapse unless the injection is made very slowly. At times when I am treating a large number of cases, I reserve intravenous injection for those cases where the condition is already very urgent and those which do not respond quickly to intramuscular injection although the diagnosis has been established microscopically. Finally I should like to remind my colleagues that children tolerate quinine well and adequate doses should always be given. Many disappointing results have been due, simply and solely, to the use of inadequate doses.

Choleraic Diarrhoea

• S. C. Dutta, L. M. P., Itakhooli, T. E. Kheto, Assam

Choleraic diarrhoea, though not a very common disease like malaria and dysentery, is yet one of the most fatal diseases found in the tea estates of Assam, its prognosis being no better than that of true cholera.

It is a disease characterised by severe purging, vomiting, cramps, collapse and anuria, ending fatally in untreated cases.

The etiology of the disease is not fully known. So far, there has not been any extensive observation on the disease. It is endemic in the tea garden areas of Assam. Some local doctors believe that these are cases of fulminating dysentery due to the Flexner group of infection. Others are of opinion that these are sporadic cases of cholera proper, while some attribute the cases to food poisoning. It is difficult to say which view is correct or whether it is an infection apart from any of these.

Choleraic diarrhoea is never found to occur in epidemic form though in a certain time of the year it occurs in fairly large numbers. Even then cases come from widely distant coolie lines and from people of different castes. No common source e.g., water supply or foodstuff, could, in my experience, be traced though particular care was taken to find it out.

It is seldom that more than one member of the same family or a member of a neighbouring house is attacked at the same time or soon afterwards. Small epidemics of bacillary dysentery occur in some years but not necessarily is there any accompanying rise in the number of cases of choleraic diarrhoea. It is often found that all the other members of the family from which a case is admitted have partaken of the same food or drink and escaped, while a robust young man or woman amongst them is attacked.

These are some of the points which appear to rule out the above three theories. Besides, microscopic examinations have not been suggestive of these cases being dysentery or cholera. Of course advanced laboratory techniques e.g., cultivation and agglutination, were not tried.

The following observations on the etiology of the disease are based on 70 cases of choleraic diarrhoea occurring in the above tea estate during the last five calendar years.

Age.—It is found in the age group of 20 to 40 years. In childhood and old age it is rare.

Sex.—Both the sexes are equally affected and people of robust health are equally so as the sickly individuals.

Season.—The incidence is highest from May to October, the period corresponding to the highest rainfall and highest atmospheric temperature.

Predisposing factors.—Choleraic diarrhoea is commonly found in people of dirty and intemperate habits. In tea estates, particularly the coolie-class people suffer. Most of the cases come in at the weekend when the labourers get their payments and indulge in excesses of food and drink. Many cases give a history of having drunk freely of 'harhia' (home brewed rice-beer) or of having eaten sweets from the bazar or meat of pig or goat taken ill-cooked.

Cases are common on a hot sunny day when the labourers, busy in their work, take a good deal of cold water when thirsty.

Clinical picture.—The onset is very sudden and collapse supervenes after two or three attacks of purging and/or vomiting. Hence when the cases are admitted in the hospital almost all are in the collapse stage. Vomiting and purging may set in together or one may precede the other. Some are admitted with incessant vomiting only, purging setting in later on. Vomiting is projectile and not preceded by nausea. The vomit is watery and whey-coloured and does not necessarily contain any decomposed food stuff. Purging is violent and not accompanied by griping. The stool is watery, white and profuse in quantity. Gradually it changes to a pinkish colour. On standing, white granular deposits and later on mucus flakes are found at the bottom. After collapse sets in, purging is not so frequent as before.

Cramp of the calf muscles is a distressing symptom. The patient is restless and thirsty. The eyes and cheeks are sunken; finger tips and toe-tips are wrinkled; the tongue is dry and the voice is husky. The pulse is feeble or imperceptible and respiration is shallow and hurried. The consciousness is perfectly retained even to the end. The axillary temperature is subnormal and the urine is scanty or suppressed.

Treatment.—The treatment generally adopted in the group of tea gardens with which I am associated for choleraic diarrhoea is the 'acid and cresol' treatment* advocated by Col. Palmer together with intravenous saline transfusion where necessary.

I use the following plan of treatment which is a slight modification of the original treatment. The brand of cresol recommended is 'sanitol', a preparation by Frank Ross & Co.

A dose of chlorodyne m. x. is given immediately on admission of the patient.

A bottle of sanitol mixture containing sanitol m. v. per ounce of water and another bottle of aromatic mixture containing acid sulphuric aromaticum xv. per ounce of water is kept ready. One ounce of each mixture is taken in a measure glass and administered every 15 minutes upto 12 doses. This takes 3 hours. Then the treatment is stopped for the day and if necessary symptomatic treatment is given.

The only untoward affect of this treatment is that it may aggravate vomiting. This is probably due to the acid. In such cases another dose of chlorodyne m. x. after an hour of the first dose may be tried or if necessary acid may be stopped and only sanitol mixture diluted with an ounce of water continued. If vomiting still persists a drachm-dose of sodi-bicarb may be tried.

On the second day, sanitol mixture is given every ½ hour up to 10 doses, next day every 1 hour up to 8 doses and so on for about a week. Acid mixture is added every alternate day. Purging and vomiting are completely controlled generally within three days. If the bowels become very constipated sanitol mixture is stopped completely and a dose of sodi-sulph cum mag-sulph mixture is given for the movement of the bowels.

In the early cases of choleraic diarrhoea only 'acid and cresol' treatment is sufficient. But almost all the cases are admitted in the hospital in the collapse

* Indian Medical Gazette, March 1934.

stage, so saline transfusion is also necessary in all these cases. Roger's hypertonic saline is given intravenously by venesection. The quantity used is three to five pints at a time according to the degree of collapse, repeated if necessary when signs of dehydration reappear. If urine is suppressed 6% glucose is added to the saline solution.

The response to treatment is almost immediate. After the saline transfusion is completed, the patient looks better, the cheeks are filled up, he is no longer restless and the pulse reappears. The purging and vomiting are lessened and the character of the stool is faecal, the consistency becoming thicker. The reaction due to saline transfusion occurs with rigor and rise of temperature which subsides in a few hours.

Effect of treatment on prognosis:—Out of 63 cases of choleraic diarrhoea treated in this hospital during the last five years, there were 7 deaths, the percentage mortality being 11.1. During this period seven cases died in the "lines" before treatment could be instituted. In these cases the attack was generally at night and it was so severe that relatives of the patients could hardly get time to arrange to bring them to the hospital from distant lines. There is no possibility of any case of choleraic diarrhoea getting cured of itself and remaining unreported in the midst of these controlled people. So we may say that the death-rate in untreated cases is 100 percent.

In two of these cases which ended fatally in the hospital attempts at saline transfusion met with failure, probably due to intravascular thrombosis. Out of the remaining five, three were children in whom also intravenous saline transfusion was not possible. The remaining two ultimately collapsed inspite of full treatment.

Hence we may conclude that the above plan of treatment is really very effective in this fatal disease.

The 'acid and cresol' treatment is also recommended in all cases of bacillary dysentery. In fulminating cases it is combined with saline transfusion. The treatment tides the patient over the algid stage and if the stool later on shows definite presence of blood and mucus, injection of anti-dysenteric serum may follow. But it has been found that if the sanitol-treatment is continued patiently this alone is sufficient to cure the disease. In cases of bacillary dysentery other than fulminating type, the improvement is rather slower. The purging is controlled within three days. If the stool is viscid and still contains much blood and mucus and if the patient complains of pain in the abdomen, sanitol mixture may be stopped for a day or two and saline mixture containing dr. 1 of sodi. sulph. and mag. sulph. each in one dose, substituted. When the stool becomes loose again after sufficient elimination, sanitol mixture is resumed and continued until complete convalescence.

I have found that sanitol mixture acts better when the stool is loose.

By this method of treatment the necessity of the use of costly anti-dysenteric serum is greatly minimised with little difference in the rate of mortality.

The above treatment has been very successful in the hands of the tea garden assistant medical officers of this circle, probably because they could pick up the proper technique of treatment by personal contact with Col. Palmer for a pretty long period.

INDIAN MEDICAL NEWS

OUR GENERAL LETTER

CHEMOTHERAPY IN PLAGUE

Researches into the chemotherapy of plague by the Director of the Haffkine Institute, Bombay, have yielded very important results, and particularly sulphathiazole was found to show a remarkable therapeutic action. 115 cases of septicemic plague were treated with case mortality as follows:

Treatment	Number of cases	Number of deaths	Case mortality percent
Anti-plague serum	33	20	60.6
M & B. 693	80	18	43.8
Sulphathiazole	12	5	41.8
Iodine Sol. intravenously	40	38	95.0

SUPPLIES FOR MEDICAL SERVICE

Glass slides for microscopes are now being manufactured in India. Specimens have been tested and found satisfactory for all-round bacteriological work, except that they are too thick to be used for dark ground examinations. The firm has been asked by the Director-General, Indian Medical Service, whether it can remedy the defect. Gas bags for administration of Nitrous oxide have hitherto been imported from England. A rubber factory in Northern India has been able to produce samples which have been sent for test. Glass tubing hitherto imported from England has been produced by a firm in Northern India. A sample has been tested and found to be suitable.

STEP-MOTHERLY TREATMENT

In connection with reports about the Government of India placing orders for three years' stock of medical supplies from England on behalf of certain Provincial Governments, the Indian Chemical Manufacturers' Association has addressed a communication to the Government to ascertain from the Indian manufacturers about items that they can supply at present or in near future before orders in England are placed. The Association regrets that the Government of India that although the suggestion for ordering three years' supplies to Provincial Governments was made by the Government of India sometime back, the indigenous industry was not consulted as to the items that it can supply. It is pointed out that India produces almost all the standard medicines conforming to the B. P. and several patent medicines, etc. The proposed step of the Government of India in placing long term order would, therefore, prove detrimental to the industry and would also put a stop to new ventures. The Association further points out that in placing orders in India for medical supplies the Government of India have been giving short period orders. It is suggested that instead of placing long period orders in England the Government should help the progress of the indigenous industry by placing at its disposal and assure the market for a long period.

The Association has also addressed letters to all the Provincial Governments enquiring as to whether they have agreed to the suggestion of the Government of India in this matter and in that case also requesting the Governments to enquire from the Association as to whether the items for which orders are proposed to be placed are available in this country.

CINCHONA CULTIVATION IN ASSAM

A question of great importance, not merely to Assam but to India as a whole, was discussed in the Assam Legislative Assembly on Tuesday, the 18th March last, when Mr. Baidyanath Mookerjee moved a cut motion in the House under the demand for grants for forests to criticize Government for not adopting necessary steps for cultivation of cinchona in the Province.

It is understood that Mr. Wilson, the expert on cinchona cultivation, who visited Assam also, had expressed the

opinion that many areas in Assam were suitable for cinchona cultivation. This shows that if this cultivation had been taken up not only Assam would not have to import cinchona products from outside the province but probably Assam could supply this commodity to other parts of India.

Mr. Baidyanath Mookerjee in moving his motion said that on many occasions they had raised this point and Government gave their customary reply that 'this matter was receiving their serious attention'. He pointed out that the Hon'ble Premier gave such a reply last year during the budget session when Mr. Nirendra Chandra Dev raised this question. But this year nothing has been provided in the budget for cinchona cultivation. Bengal Government, he pointed out, had tried this near about Darjeeling and they found it quite profitable, but Assam Government was still waiting. He was told that though Assam Government's experiment at Nongpoh had proved successful, yet it was still in the experimental stage and nothing had been done to increase the area and thereby to save money and to increase the resources of the province. On the other hand Government had budgeted for 15,000 lb. of quinine from Java through the India Government, over and above their usual requirement of quinine.

JADAVPUR TUBERCULOSIS HOSPITAL, CALCUTTA

Her Excellency Lady Linlithgow opened a new block, which has been named after her, at the Jadavpur Tuberculosis Hospital, the largest hospital of its kind in Bengal at the commencement of this year.

Built at a cost of Rs. 80,000 through the generosity of Sri Parijat Devi and Mr. Sushil Chandra Sen, Solicitor to the Central Government, the new block holds twelve beds as well as a small operating theatre and accommodation for a medical assistant. The first occupants of the block entered their respective wards shortly after the opening ceremony.

Mr. Sushil Chandra Sen, welcoming Her Excellency, said that the erection of the block was intended to commemorate Her Excellency's great work in initiating a large-scale attack on tuberculosis in India, and as a mark of their respectful admiration of her successful efforts in this connection, they had named the new block after her.

Her Excellency, in reply, expressed her appreciation of this gesture, and said that she hoped that the construction of this block would shortly be followed by the provision of more free beds at the hospital. She added that she had received hundreds of letters from indigent sufferers from tuberculosis asking her to arrange free treatment for them. "You can imagine what it is like," she said, "to have to refuse them. For many, it is their death-knell."

Her Excellency made particular mention of the agitation that is sometimes conducted by residents of populous areas where it is proposed to erect a tuberculosis sanatorium. This agitation, she emphasised, was based on unjustified apprehension. She had consulted the most eminent expert on the subject in India and he had confirmed her opinion that the presence of a tuberculosis sanatorium involved absolutely no danger to those living in the neighbourhood. Rather, it was a safeguard; for in those areas where there was a sanatorium, the sufferers from tuberculosis were segregated and proper measures were taken to prevent their spreading the infection.

Dr. K. S. Ray, the doctor in charge, who has been mainly responsible for the growth of the hospital, announced that Rs. 12,000 had been donated on the occasion for the purposes of the hospital.

PUNJAB CIVIL SURGEONS' CONFERENCE

The scheme for settling subsidised medical practitioners in villages was an important landmark in the history of medical expansion in the province, said Mian Abdul Hayee, Education Minister, inaugurating the third Punjab Civil Surgeons' Conference held in the first week of April.

Characterising it as the first serious and systematic attempt, after the Rural Dispensary Scheme of 1925, to carry modern scientific medicine to the vast population of the rural areas, the Minister observed that the scheme was based on State help, local initiative and co-operative activity. The day was not far off, he added, when every big village in the province would have a subsidised medical practitioner catering for the needs of the sick, and serving as an important link in the elaborate chain of medical relief.

Col. Barucha, Inspector-General of Civil Hospitals, in Punjab, in the course of his address, said that there were three outstanding achievements which stood to the credit of the civil surgeons and others who worked with them and guided them, namely, the intensive work in Red Cross St. John Ambulance Divisions, help in extending medical relief directly and indirectly to the Punjab villages as a result of touring by dispensary doctors and the establishment within the incredibly short period of about five months of 59 subsidised dispensaries.

Health visitors, social and uplift workers, missionaries and educationists attended the Conference.

His Excellency the Governor of the Punjab and the Premier sent messages of success to the Conference.

OUR BOMBAY LETTER

ADMISSION OF L. C. P. S. FOR THE M.B., B.S. BOMBAY
After all the Bombay University has shown the way, what it may consider in self satisfaction as having offered a great bounty, to the Licentiates intending to go up for the M.B., B.S. The new rules permit a Licentiate with I.Sc. qualification to appear for the junior subjects and appear at the Final M.B., B.S. after undergoing training in any of the two colleges of the City for 2½ years. In spite of these hurdles in their path, some of the ambitious licentiates are prepared to rough it through and prove to the powers-that-be, their real stuff and worth. So far so good. But, lo! they are faced with another bolt from the blue. Now it is the turn of the Colleges to shut of their doors against these poor creatures. As far as I understand, the G. S. Medical college (under the control of the Municipality, with the well-known Dr. Jivraj Mehta as the Dean) cannot admit them, till the K. E. M. Hospital extension scheme is completed and the corporation votes funds for the maintenance of the new wards!

The G. S. Medical College admits 80 new students annually and the Grant Medical, 120. It seems that about a dozen L. C. P. S. have applied for admission but only three will be admitted in the Grant Medical College. This is really a sorrowful state of affairs and both the Government and the Municipality should do all that is in their power and see that all the twelve are admitted, even by reducing the number of new admissions, if necessary. There cannot be any excuse in this matter except unwillingness to do some little justice to the much maligned class of Licentiates.

AYURVEDIC COLLEGE FOR BOMBAY

The Rambhaskar Anandilal Polar Ayurvedic College will commence its first year classes for the study of Ayurvedic Medicine by the end of June. There is provision for 24 students, the preliminary qualifications for admission being the Matriculation standard of the Bombay University with English and Sanskrit as compulsory subjects. The fee will be about Rs. 100 per annum.

FAKED MEDICINES

There has been a heavy demand for German proprietary products in the local market which are being sold at fancy prices.

Eukodal, for example, fetches Rs. 3 to 5 per ampoule! Primarily, one feels that the medical man is to be blamed for this criminal and reckless waste of the patients' money, or else why should one prescribe the German products when equally efficient substitutes of Indian, British and other makes are available? The recent United Press message from Calcutta should prove to be an eye opener to those suffering from Germano-phobia. It stated that a sample of Eukodal sold in the Calcutta market was tested at the Biochemical Standardization Laboratory, and was found to be a "Faked sample without any pain relieving property whatsoever". The message further stated that spurious imitations of Atebrin, Evipan Sodium, Prontosil etc., are also sold in the market. Hence practitioners should beware of this new "Faked-medicines-supplying agency" menace.

I. G. C. H. BIHAR

Lt. Col. W. C. Spackman, Professor of Midwifery and Gynaecology in the Grant Medical College, Bombay, has been appointed Inspector General of Civil Hospitals, Bihar. Entering the I. M. S. in 1913 Col. Spackman, after a few months' service in India, proceeded to Mesopotamia on field service with the 48th pioneers, remaining with them throughout the campaign. He was mentioned twice in despatches for gallant conduct. He was taken prisoner when Kut fell. Coming to Bombay in 1924, he held charge as Civil Surgeon for 3 years in various places and then joined services in Bombay City. He was connected with the St. George's Hospital and various other medical institutions of the place and commanded a great popularity and good practice. While Bombay will lose his services, Bihar will be benefitted by his ripe experience.

MEDICAL EXAMINATION RESULTS

One hundred students passed the first M. B. B. S. examination out of 224 (44.64%). In the second, 17 out of 20 (85%) and in the Final 91 out of 241 (37.76%) got through. In the first L.C.P.S. 66 (69%) out of 169 and the Final 86 (38.07%) out of 260 came out successful.

(Continued from page 169)

he can tide over the collapsed stage, there is a rise of temperature afterwards.

Intravenous transfusion of hypertonic saline and warmth on the body in the form of hot water bottles or hot compress are necessary to combat collapse. Quinine may advantageously be given by a special technique. After intravenous saline is started, 10 grs. of quinine dissolved in 10 c.c. of water is injected into the rubber tubing, attached to the saline cannula which goes into the vein. This technique minimises the trouble of a separate injection and risk of shock.

In all cases of malaria requiring vigorous treatment injection of atabrin for two consecutive days is recommended. But as a rule atabrin is slower in its action than quinine. In some cases atabrin or quinacrine may be judiciously combined with quinine for better results.

To prevent relapse in a case of malaria, plasmoquin or praequine is essential.

For complications e.g., debility and anaemia, proper treatment should be given. Easton syrup is very good for debility after malaria.

REPORTS AND REVIEWS

The Punjab Public Health Report for 1939.

The three chief items of work which the report embodies are: (1) the Public Health work in connection with Hissar famine, (2) the working of the Health Bureau and (3) the epidemiological investigations. We have read through the report very carefully and certainly the Public Health Department deserves the full meed of praise for the keen and efficient way in which it discharged its duties, in co-operation with the public as well as the Government.

The famine-stricken district was divided into 50 Health units each in charge of a medical officer, and the measures taken to mitigate the effects of famine were: (1) reduction of task for workers by 50 percent (2) increased gratuitous relief (3) domiciliary medical attendance (4) prophylactic inoculation and (5) maintenance of the nutrition of the people, chiefly by the distribution of germinating grain, and the Indian goose-berry (amla).

The Assam Public Health Report for 1939.

The report for the period shows a good record of work. It is interesting to note that there is a large decrease in the number of deaths under head "cholera".

Orissa Hospital's Report for 1939.

The number of hospitals was 174; the number of medical officers 228 (I. M. S. 3; A. S. 28; I. M. D. 1; S. A. S. 182; Woman M. O. S. 11).

The report points out that the experiment of appointing doctor-teachers in some high schools as part of the permanent staff of those schools has become very popular, and it is hoped to extend this scheme to all the high schools in the province.

Report of the Scientific Advisory Board, Indian Research Fund Association for the year 1940. Price Re. 1. Obtainable from the Secretary, Governing Body, Indian Research Fund Assn., Secretariat, New Delhi.

This is indeed a very useful publication epitomising the research work done under the auspices of the Indian Research Fund Association. It shows that the Medical and Public Health researches in our country are fairly well advanced. The report should be read by every medical practitioner in our country so that he may keep himself informed about the researches in medicine and allied subjects which are likely to help him even in his ordinary practice.

Report of the Tuberculosis Survey Sub-Committee of the Indian Research Fund Assn., July 1940.

This report deals with the broad principles of Tuberculosis Survey and details the methods by which this could be done effectively. Besides this it also gives detailed notes of great practical value on (1) the technique and interpretation of tuberculin skin test, (2) classification of pulmonary tuberculosis, (3) blood and sputum examination and (4) the taking and interpretation of X-ray photographs.

The report is both brief and lucid and we like it immensely. Selections from this report will be published in the subsequent issues of the *Journal*.

Sulphonamides in General Practice by Dr. M. L. Gujral, M.B., M.R.C.P. First Edition 1941. 1, Curzon Road, New Delhi.

We think this is the first book of the kind in our country, and its publication is quite timely in as much as this most useful drug is being used so indiscriminately as to bring it into an undeserving disrepute. The author gives an exhaustive account of the pharmacology of the drug and its various combinations and the clinical uses to which this group of synthetic drugs are put to by prominent medical men, here and abroad. The printing and get up is excellent, and we warmly recommend the book to our readers.



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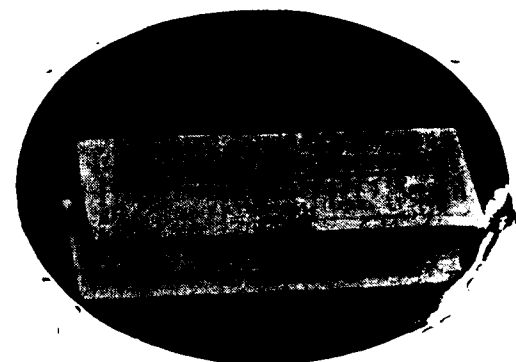
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Materia Medica of Pharmaceutical Combinations and Specialities by Dr. U. B. Narayana Rao, L. C. P. S. (Bom.), Second Edition 1941, published by the *Medical digest*, Girgaum, Bombay 4.

The first edition of this deservedly popular book was published in 1932, followed by a Supplement in 1937. Since then, new drugs and new methods have accumulated so greatly as to need a second revised and enlarged edition. This work is obviously a difficult one involving much time and great labour, and we warmly congratulate the author in the publication of this type of *Materia Medica* so necessary for frequent reference by general practitioners and specialists alike. We wish this second edition a great success as indeed it was when its first edition was published nine years ago.

EPITOME

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(1) The author classifies surgical complications of filariasis as follows:	

1. INFLAMMATORY:

Acute:	Chronic:
(i) Lymphangitis	(i) Focal spots
(ii) Elephantoid fever	(ii) Fibro-myositis
(iii) Funiculitis and epididymo-orchitis	(iii) Epididymo-orchitis
(iv) Lymphadenitis	(iv) Haemato-spermia
(v) Cellulitis and abscess	(v) Sterility

2. OBSTRUCTIVE:

- Elephantiasis of limbs
- Hydrocele, chylocele, and haematocele
- Lymphatic varix of the cord
- Varicose lymphatic glands, inguinal lymph varix and lymphatic varix of broad ligament.
- Elephantiasis of penis and scrotum, and vulva.
- Chyluria
- Lymph-scrotum

3. ALLERGIC

- Urticaria
- Pruritus
- Filarial fever

As for treatment he outlines the following:

(i) *General treatment*: This consists of complete rest in bed, elimination of fat from the diet, aperients and elevation of the foot end of the bed. This simple treatment may abort an attack if promptly carried out. There are some practitioners who prefer to give an additional amount of fat in the diet in order to compensate for its loss in chyluria.

(ii) *Operative cystoscopy and ureteral diathermy*: Operative cystoscopy and fulguration are successful when the leakage is slight. If clots are present, a previous bladder irrigation with 1/2,000 silver nitrate solution would be useful. Ureteral diathermy is successful in a small percentage of cases of chyluria of renal origin.

(iii) *Other measures*: A successful lymphatico-venous anastomosis would provide a satisfactory short-circuit for the obstruction to the cisterna chyli or the thoracic duct but has not been a surgical success.

(e) *Inguinal and supermatic lymph varices*: The lymphatic varix of the cord is often mistaken for either a bubonocoele or a hernia, and generally excised during the operation. Occasionally an intractable chylous fistula may develop. In some cases injection of a 10 per cent solution of sodium morrhuate gives excellent results. The same treatment is preferable in varicose lymphatic glands.

(f) *Elephantiasis of limbs*: The surgical treatment of this condition has not proved to be satisfactory owing to the difficulty of establishing an efficient alternative lymphatic drainage.

Treatment: Non-operative: In milder cases elastic bandages and supports, elevation of the limb, e.g., resting the leg upon a chair at frequent intervals, vibro-massage and faradic currents, separately or in suitable combinations, are found to be fairly satisfactory. Pyrotherapy and medicinal treatment have already been discussed, and in early cases these have proved to be of value.

Operative: The main surgical problem is the relief of serious lymphatic obstruction.

(i) *Modified Auchincloss operation* is a plastic operation, involving removal of infected areas and blubbery tissues. In the first place, an attempt is made to remove areas that the patient has come to recognize as the starting point of painful attacks. Calcified dead worms and other 'focal spots' are also removed by means of elliptical incisions. This operation requires very delicate technique. The raising of the flap of skin demands great care and experience. The location of the diseased areas, in spite of previous skiagraphy, is not always easy.

Gluteal-femoral plastic operations: This operation involves a very delicate technique into which we need not now digress. A large flap of skin is raised from the gluteal region containing a generous supply of fatty tissues and, if necessary, part of the deep or gluteal fascia. A similar flap is raised from the femoral region. The gluteal flap is brought round and planted into the femoral bed and the latter flap is grafted into the gluteal region. The object is to divert the lymphatic trunks of the lower limb into the gluteal region and develop an efficient anastomosis for the drainage of lymph via the axillary and neighbouring lymph channels.

In many cases a combination of these two operations is likely to give satisfactory results, but further experience is necessary.

(iii) *Kondoleon's operation*: This has not proved to be successful and the relief obtained is rarely permanent.

(iv) *Lymphatico-venous anastomosis*: Attempts have been made from time to time to make a lymphatico-venous anastomosis. Transplantation of dilated lymphatics into a neighbouring vein of a large size has been suggested, but surgically it is seldom feasible. Anastomosis between a varicose lymphatic vessel and its companion vein has not been a surgical success.

Drug prophylaxis: No drug has yet been obtained which will satisfy the following requirements: (1) harmless to the host, (2) effective and selective parasiticide and (3) excreted into the lymphatic system.

(2) The authors write that while searching among the indigenous species of the Cassia family for a substitute for *Cassia bearens* which is now being extensively used in the treatment of black-water fever, it was found that a therapeutically active extract could be prepared from the root-bark of *Cassia fistula*.

The extract is prepared by exhausting the powdered root-bark with cold 60 per cent alcohol by the reserved percolate process, the finished product containing 10 per cent by volume of glycerine and representing in every millilitre one gramme of the root-bark.

Out of the series of cases of black-water fever treated with the extract thus prepared, the percentage of cures worked out at 96.3. The urine cleared invariably in 3 to 4 days after the administration of a total quantity of 12 to 16 fluid

drachms, the dose given being generally $\frac{1}{4}$ to 1 fluid drachm, repeated every four hours.

JR. OF THE I. M. A., APRIL 1941

- (8) Management of breech presentation by external version by Mehta ... 299
Bronchiectasis by Misra ... 303
A clinical study of nephritis by Venkatesam ... 309

(3) Mehta is of the view that the best time for external version to correct the breech presentation is between the 30th and 32nd week, and that, in his series of 1066 consecutive confinements, there has been a considerable fall in percentage of premature children and foetal mortality as a result of external version.

PATNA JR. OF MED., APRIL, 1941

- (4) Vitamin Conutrition in rheumatic disease by Hai ... 55
Effects of supplementary feeding with limed mira (sweet toddy) on growth by Mitra and Mitra ... 60
Incidence of hook-worm infestation in Bihar by B. N. Singh ... 57
Intravenous use of T. A. B. vaccines in different diseases by Varma ... 87

(4) The author writes that most of his rheumatic patients were treated with fairly large doses of salicylates and alkalies. Heart failure was treated with cardiac tonics (eg. digitalis). In addition these patients were given plenty of vitamin C in shape of oranges, lemons, guava and tomatoes. The author is of the view that those patients who received sufficient amount of vitamin C in addition to routine treatment were much better off than patients who received routine treatment alone.

SIND MD. JR., MAR. 1941

- Rectal installation of cod liver oil in the treatment of ulcerative colitis by Spiegel ... 129
Certain aspects of nutrition and public health by Datta ... 134
Effect of the visible light upon the secretion of milk by Menju ... 137

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- Prognosis in tuberculosis by Patel ... 345
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- Typhoid complications and their treatment by Malhotra ... 115
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- Pulmonary embolism by Sen Gupta ... 173
Artificial fever therapy in gonorrhoea by Sachin Bose, M. B. ... 191

IND. JR. OF MED. RES., APL. 1941

Menon, writing about staphylococci in vaccine lymph states that batches of lymph containing strains of *S aureus* which produce exotoxin should not be issued for field use. Bose and others record their observations on the preparation and use of sulphamethyl thiazole in pneumonia, and are of the view that it is equally effective as sulphapyridine, besides being easier in preparing it. Datta and others prove by investigations that the action of hexamine as a biliary anti-septic is due to bacteriostasis which it induces in the biliary fluid. Niyogi and others write that fish (Bombay) dried or fresh, constitute a cheap source of animal proteins and essential minerals as Ca, P and Fe, but observe that though the liver oils of some of these fish were found to be several times richer in vitamin A content than ordinary cod liver oil

yet their body fats do not contain vitamin A in appreciable amounts. Patwardhan and others state that there is no difference in basal metabolism rate, among Indians, between vegetarians and non-vegetarians, and that the lower B. M. R. in Indians is more racial than the result of dietetic, climatic and other factors. There are also other contributions of great value which are worth perusal and study.

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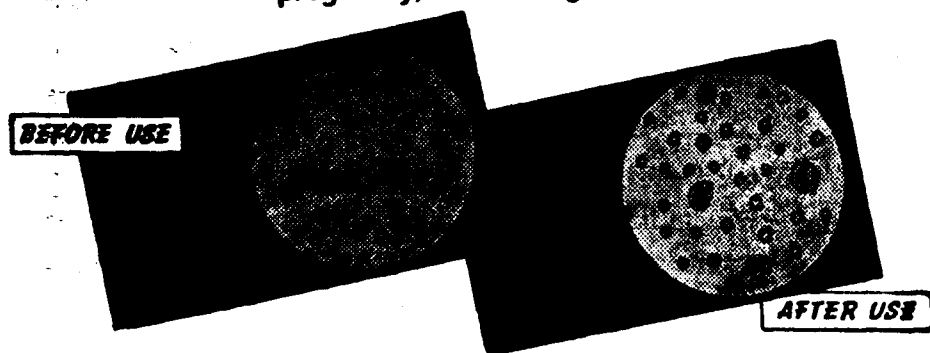
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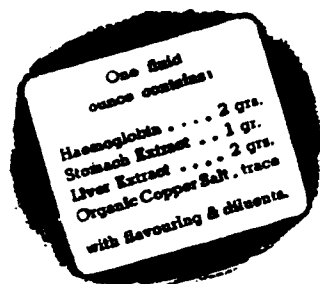
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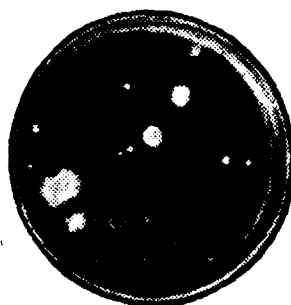
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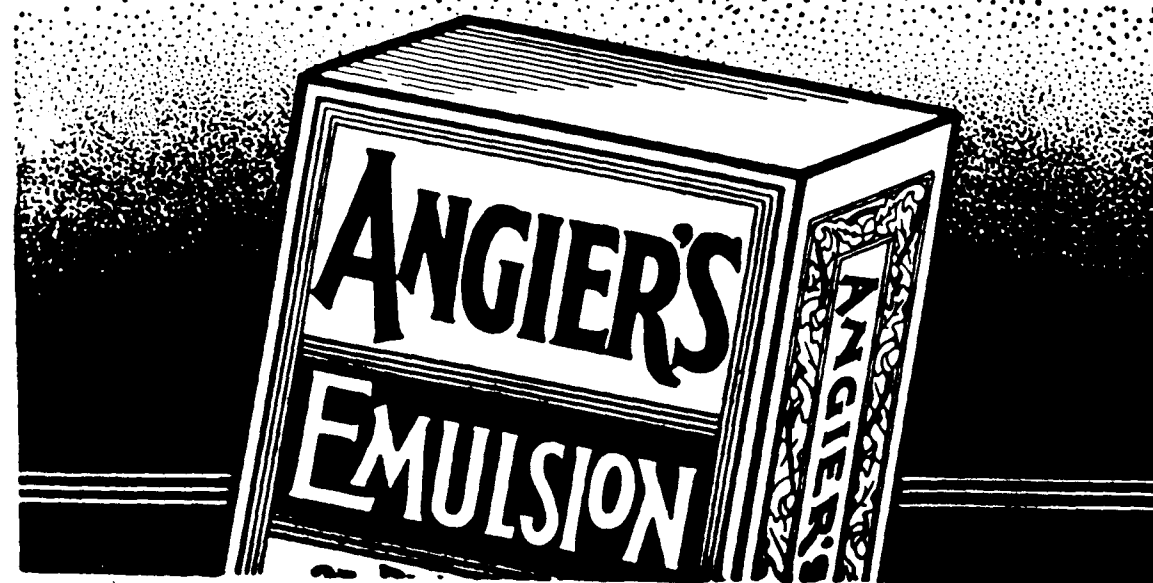
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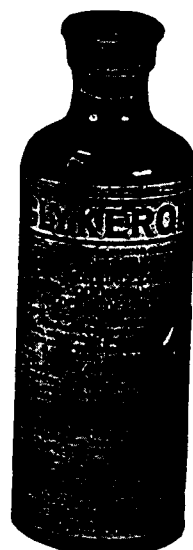
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