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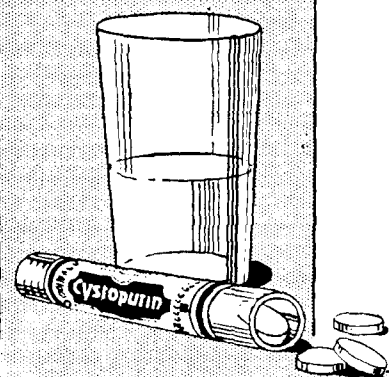
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(Med. Welt, Vol. 11, No. 24)



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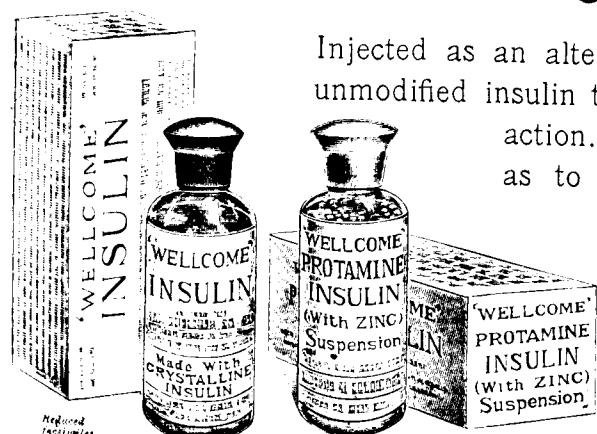
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ADDRESSES AND ARTICLES

Infra Red in Ray Therapy

- Dr. P. M. Mehta, M.D. M.S., F.C.P.S.,
Chief Medical Officer, Nawanagar
State

The Science of Radiology is still in its infancy. The properties of radiations which it makes use of are imperfectly known. The classification of the unlimited variety of radiations into about seven groups each consisting of thousands of rays with varying wavelengths shows how rough it is. The classification is based on certain known effects of the radiations such as visibility, chemical and biological actions and penetrability. As we know more of the action of different radiations the classification will go on expanding; but the field is very vast and requires an army of workers. Besides the pure physicists who study the subject from a general point of view, there should be others who apply deductions of the physicists to their special branch of knowledge. The radiologist has to be both a physicist and a physician. He must have full knowledge of the materials he handles. He will use them more intelligently and will combine research with practice. His contribution, however humble, is sure to add to the progress of the science.

At the commencement of ray therapy, for some years ultra violet rays were mainly used. The infra red rays remained in the background. This was because the ultra violet rays lent themselves to easy experimentations and recording of observations in the laboratory and their use for clinical purposes was facilitated by suitable apparatus being available for their production. It is interesting however to note that infra red rays have been used by men for the relief of aches and pains since the earliest times. When the savage exposed his wound or abscess for healing to the Sun he was making use of infra red rays mainly. So did his more civilised descendants when they used artificial means for applying heat to the body. Of course they were not aware of the existence of infra red rays or their properties. This was to come at a very late stage. Even now we are only on the threshold of that stage. Heating, which is the main effect of infra red rays, was much too common a thing for creating a sensation. The ultra violet rays captured the imagination of the people and

the profession by their novelty and the undoubtedly marvellous results obtained in some diseases. The glamour of ultra violet rays is now subsiding. The neglected infra red ray is gradually coming into its own.

The infra red were first isolated from the visible rays by Herschel in 1800. In 1835 Ampere explained that the infra red were similar in nature to the visible rays, only differing from them in wavelength. The first therapeutic use of infra red as such was made in 1883 when Finsen used them in the treatment of lupus. Finsen may be called the father of ray therapy. Although he used infra red rays he and the early workers in the field focussed their attention on ultra violet rays, and infra red rays were neglected. Whatever progress has been made in infra red therapy has been made in the last ten years. The manufacturer of a generator which produced infra red rays alone has greatly assisted this progress. It has been found that in all the apparatus used for ultra violet irradiation, there is a large infra red emission. This fact naturally led some workers to think that the infra red rays were at least to some extent responsible for the results obtained. By differentiation it was found that in many cases the elimination of ultra violet rays did not affect the result. In this way the therapeutic value of infra red rays was unmistakably demonstrated and led to further exploration of the field with greater confidence.

The infra red rays occupy the portion of the electro magnetic spectrum next to that occupied by the visible red rays. As this left end of the visible spectrum is called the lower end, the rays coming after the red rays are called infra red i.e., below red. Their wavelength ranges from 7000 Å to 5 lacs Å. Beyond that the wavelengths are those of Hertzian waves, the shorter varieties of which are used for wireless transmission. For the detection of the infra red rays special instruments are needed. The Bolometer is the oldest instrument to record infra red rays. Radiometer is an ingenious apparatus in which the slightest variation in temperature is shown by revolving wanes. Thermopile with a sensitive galvanometer is the simplest instrument for practical purposes. A special type of spectroscope with a fluorite prism is used in research work. The photo electric reaction is produced by a small range of wavelengths up to 12000 Å. This coincides with the range which has a therapeutic interest.

The term infra red is the name given to the whole group of rays comprised within the range 7000 to 5 lacs, and more. They have

been variously classified by different authors. Luckiesh divides them into three regions:

Near 7000 to 20000 Å.
Middle 20000 to 500000.
Extreme 500000 to upwards.

Saidman divides them into nine regions or octaves of which the first three are therapeutically useful.

1. Extreme Near 7500 — 15000.
2. " Middle 15000 — 30000.
3. " far remote 30000 — 60000.

For clinical purposes this division is preferable as it comprises all the rays for which there is evidence of their being therapeutically useful. The rest of the infra red region may be ignored.

It must be noted that out of the total radiations emitted by the Sun and by artificial sources the largest proportion is that of infra red rays. The following table will make this clear:—

	Ultra Violet.	Visible.	Infra Red.
Sunlight.	7%	13%	80%
Carbon arc.	5%	10%	85%
Mercury Arc.	28%	20%	52%
Tungsten arc.	16%	16%	68%

So far as our present knowledge goes infra red rays derive their usefulness in therapeutics from two main properties. 1. Their heating power, and 2. Their penetration to a particular depth. The infra red rays penetrate the horny layers of skin and reach the dermis and subcutaneous tissues containing masses of fat cells, sweat glands and blood vessels. On absorption in this area they are converted into thermal energy which brings about vasodilatation of subcutaneous blood vessels and marked erythema of the skin leading to an increased outflow of lymph. On account of the increased blood supply there is a speeding up of local metabolism. Thus infra red rays have a stimulating action on the skin and the organs which are embedded in its various layers. There is no other agent known at present which can convey heat to these near skin areas. In case of ordinary heating appliances, the heat is absorbed by the superficial layers of the skin. Diathermy and Short Hertzienne waves heat the body through and through while infra red rays by their limited penetrating power seem to be specially designed to act on the skin and subcutaneous area. This gives them a unique position in heat and ray therapy.

Even if we ignore the other properties of infra red rays the action of heating at a specific depth is sufficient to give them a first-rate position in therapeutics. Maintenance of the normal temperature in the body is such a vital function that variation of even 5 degrees

on either side will cause cessation of life or serious impairment of bodily functions. The skin, the sweat glands and subcutaneous blood vessels play an important part in the maintenance of the body temperature. Infra red rays are the only means known at present which have specific action on these organs. Besides this important action, heating of skin and near skin area, hyperemia of subcutaneous vessels and stimulation of sweat glands have each of them got their own special utility.

1. *Heating.*—Heat is the panacea for most of the ailments of the body. It soothes nerve terminals and by this analgesic effect relieves pain. Any agent which can give desired amount of heat at a particular site without affecting the adjacent parts will be a great boon to the therapist. Infra red rays are absorbed and converted into heat in the dermis and the subcutaneous area with all its arborisation of blood capillaries and nerve endings. This naturally brings about relief of tension and pain.

2. *Hyperemia of skin and subcutaneous vessels* has got manifold uses. It helps the draining of absorption of exudates resulting from trauma or inflammation. It hastens and stimulates the inflammatory reactions when they are abortive, defective or chronic. This hyperemia accelerates the action of massage or of other methods of physio-therapy or of other kind of radiant energy such as ultra violet or visible rays and of medications rubbed on the skin for absorption.

3. *Diaphoresis.*—The possibilities in this direction of infra red rays which stimulate two million sweat glands are great, though at present their use is restricted to two conditions, mainly renal insufficiency and obesity.

Other known properties of infra red though of little therapeutic utility are as follows:—

1. They have no bactericidal action. In fact they help the growth of life.
2. They counteract the effects of overdoses of X-ray and Ultra Violet rays.
3. They bring about a marked decrease in the number of white blood corpuscles (Leucopenia). This action indicates its use in Leukemia.

4. Erythema is produced immediately.

I have given above the actions of infra red rays which have been tested scientifically and confirmed. That something wonderful will be discovered about them is the feeling of some enthusiasts of these rays on the ground that our radiant environment is mainly consisting of infra red rays and which therefore must

have more intimate influence on life than what we know at present.

All hot bodies give out infra red rays but all of them have not the same results. This is due to the fact that all infra red rays do not penetrate equally. Dr. Saidman's classification is based on the penetration power of the rays. The penetration is highest for 7500 Å to 15000 Å, becomes less for 15000 Å to 30000 Å and much less up to 60000 Å, after which it diminishes still further. The thermal effects are produced at different depths of the dermis and sub-dermal tissue according to the level where the rays are absorbed. It becomes necessary therefore to know the quality of radiations emitted by different sources and the depth at which each of them are absorbed.

First we must know the emission spectrum of the radiator. The emission factor is the property of matter to emit radiations when raised to a known temperature. This varies with different substances. Next we should know the maxima of the radiation. Every substance has got a temperature point which when reached results in the greatest output of radiation possible for that substance. If the temperature is increased beyond this the substance disintegrates or burns up. The maxima varies with different substances. The output of near infra red rays is greatest from generators which have the highest maxima.

After ascertaining the kinds of wavelengths produced by the radiator the next step is to have a clear conception of the depths to which each of them can penetrate. This part of the subject is more difficult. Laboratory experiments show that if a given thickness of water absorbs 10% of 12000 Å it will absorb 40% of 14000 Å and 100% of 22000 Å. The absorption at various levels of skin of infra red rays produced by Tungsten whose radiations are between 8000 Å and 14000 Å and by iron whose radiations are between 12000 Å to 40000 Å are as follows:—

34% are reflected by the skin and the remaining 66% penetrate the skin.

Taking the average thickness of skin to be about 2 mm. 5 mm. would be thickness of stratum corneum and stratum lucidum. This portion will absorb 20% of tungsten and 59% of iron radiations. For the heating of this layer therefore iron radiation is better than tungsten. Next 5 mm. will be thickness of stratum granulosum, mucosum and germinativum. This would absorb 16% of tungsten and 6% of iron. Tungsten would be more efficient for heating this layer. The next 1 mm. would include the corium. 19% of tungsten and 06% of iron are absorbed in this

layer. These radiations can produce thermal effects upon the nerves, blood vessels and papilla located in the corium. Tungsten is the best for producing heat in this layer. 11% of tungsten and 0% from iron penetrate further into the layer of muscle and fat. Tungsten radiations can pierce up to 10 mm. of thickness. Thus tungsten and iron provide us with two extreme types of generators, first one a high temperature generator with a predominance of near visible Infra red and the other low temperature generator with predominance of long wave infra red; carbon filament lamp strikes a middle course between these two extreme types.

After selecting the radiator the dose must be determined. It depends upon the following factors:—

1. Intensity which depends upon area of radiating surface.
2. Distance. Intensity varies inversely as the square of the distance.
3. Area of skin exposed.
4. Time of exposure.
5. Skin sensibility of the patient which varies with each individual; this is not so important as it is in ultra violet treatment as the harmful effects are observed immediately and overdose prevented.

I need not emphasise the need of directing the rays perpendicularly. The dose must be carefully determined as overdosage has local or general harmful effects. Overdosage would cause locally blistering and burns and in the general system shock and heat stroke which may result in sleeplessness, rise in temperature and pulse, and severe headache or fainting.

The sources of infra red rays commonly used at present are as follows:—

1. Sun light with special infra-red filter, which give red and near infra red rays.
2. Non luminous generators which give long wave infra red rays.
3. Luminous radiators, incandescent filament lamp, tungsten or carbon which would give visible and near infra red rays.

Special advantages of infra red irradiation in the Solarium.

1. The infra red rays from the Sun are mostly of the short wave type which have the greatest penetrating power.
2. Constant measurement of infra red rays taken.
3. Special arrangement to direct the rays perpendicularly on the patient.
4. Special contrivance to concentrate the infra red rays two to three times on the irradiated area.

5. Arrangement of special filters which cut off all other rays; and thus make it possible to give prolonged exposures of infra red rays.

On account of the actions described above the infra red rays are indicated in the following conditions.

Specific action of infra red rays on the heat regulating function of the skin makes it more or less specific for rheumatic conditions. Heat regulation of the body is the principal function of the skin. When it is healthy and functioning properly it keeps the temperature of the body constant at 98.4 whatever the outside temperature. Whenever there is something wrong with this function the body may either take in or give out more heat than is necessary to maintain it in normal health. In cold weather skin whose heat regulating function has become deficient allows more heat from the body to pass to the surrounding cooler atmosphere. The body, however, is not completely at the mercy of the skin; with a little lowering of the head in the body, the peripheral capillaries contract, thus diminishing the blood flow to the skin surface where it is liable to lose some more of its heat. If the contraction of these superficial vessels continue for a long time the vessels behind them will dilate and increased intravascular pressure will first exude serum and then leucocytes in the surrounding zones. Pain, stiffness and limitation of movement of local parts, are the symptoms produced which are known as rheumatic conditions. The origin of the rheumatic condition has been thus traced so far to the derangement of the skin's heat regulating function.

Due to contraction of superficial vessels the skin becomes dry, nonsecretive and anæmic. A vicious circle is set up. The anæmic condition of the skin vessels further lower the skin's capacity to perform its functions. All medications used at present to cure rheumatic conditions act by dilating the peripheral vessels. Dilatation of these vessels give a temporary sense of relief by relieving the intravascular tension. But this relief is sure to bring more depression as dilated vessels would lose more heat through defective skin. Infra red acts on all the organs of the heat regulating mechanism; it stimulates the skin and sweat glands and dilates the peripheral vessels. Thus specific action of infra red rays makes it the treatment of choice for all rheumatic conditions.

Rheumatic conditions include a wide range of complaints due to pains, aches, stiffness and swelling which may be in joints, muscles, tendons, ligaments, nerve sheaths, fibrous

capsules, bursal walls, etc. In all these conditions infra red ray is indicated.

The next important action of infra red rays is thermal. Heat relieves all pain and the analgesic effect on the nerve endings in the skin has been utilised in various painful conditions of skin and subcutaneous region—pruritis and neuralgia, tooth-ache, earache and tic douloureux. Heating property becomes helpful in frost-bite and chilblain.

Action of hyperæmia is utilised in acute and chronic trauma, in various skin diseases. It hastens the inflammatory processes in boils, carbuncles, abscesses, whitlows and furuncles.

Diaphoretic action is utilised in obesity and elephantiasis and in uræmia.

Action of diminishing white blood corpuscles makes infra red rays useful in leukaemia.

Its antagonism to other radiation indicates its use in effects of overdoses of ultra violet and X-ray.

THE FOLLOWING TABLE GIVES THE NUMBER OF CASES TREATED IN THE SOLARIUM WITH INFRA RED RAYS. THE RESULTS ARE DEFINITELY ENCOURAGING IN ALL CASES WHERE TREATMENT HAS BEEN TAKEN FOR A SUFFICIENTLY LONG PERIOD

Diseases.	Total treated.	Cured.	Relieved.	Discharged otherwise.
1. Rheumatism and allied conditions	975	571	252	152
2. PAINS.				
1. Neuralgia	517	361	85	71
2. Sciatica	125	64	32	29
3. Herpes Zoster	1	2	1	1
4. Tic Douloureux	5	0	3	2
	651	427	121	103
3. INJURIES.				
1. Trauma	46	23	11	12
2. Sprain	103	89	8	6
3. Fracture	38	...	34	4
1. Hematoma	2	1	1	...
2. Ankylosis (Fibrous)	15	7	1	1
	201	120	58	26
4. INFLAMMATION.				
1. Abscess	83	34	40	9
2. Boils	579	404	150	25
3. Whitlows	12	8	3	1
4. Carbuncles	3	0	2	1
5. Furunculosis	147	110	21	16
6. Chronic Otorrhœa	373	113	188	72
7. Mastoiditis	13	...	6	7
	1210	669	410	131
5. SKIN DISEASES.				
1. Pruritis	14	9	5	...
2. Eczema	586	315	178	93
3. Dermatitis	53	32	10	11
	653	356	193	104
6. Elephantiasis	119	29	67	23
Pseudo Elephantiasis and Lymphangitis	15	7	5	3
	134	36	72	26

(Continued at foot of next page)

Clinical Types of Asthma and their treatment

• Dr. Anirudha D. Mastakar,
L. C. P. & S. Bombay

Definition.—A neurosis characterized by more or less severe paroxysmal dyspnoea, due to spasmodic narrowing of bronchial lumen, alternating with spasm of the muscles of the thorax.

Forms of Asthma.—(1) Bronchial, (2) Cardiac (3) Uremic.

(1) In bronchial asthma the patient rises to reach the window for air, retaining his sense of direction and co-ordination. He seizes the back of a chair with both hands and he clings to it, his shoulder raised and his body stooping forward.

(2) In cardiac asthma the patient is much weaker during an attack. He sinks into a chair or sits on the side of his bed—immoveable, dumb, anxious, supporting himself with the chair or bed beside him.

(3) In uremic asthma the patient exhibits a lack of energy to rise, but he is much agitated and tosses his arms and legs about, the convulsive agitation sometimes passing into a rapid fatal depression.

Etiology.—Hereditry shows itself in about 50% of cases. Rheumatism, gout, migraine are predisposing factors. It is more frequent in males than in females. The wealthy are more prone to it than the poor owing to the dietetic errors and sedentary habits. Excessive dampness in the air may bring on a paroxysm. Asthma sometimes appears during pregnancy due to the enlargement of thyroid during gestation.

Symptoms.—Premonitory symptoms: Uneasiness about the chest, pallor, or feeling of suffocation usually warn the patient that an attack is impending. Repeated sneezing, stridulous laryngitis, dyspepsia, and copious urination have been observed as prodromata of a paroxysm. Or it may be preceded by sudden depressive mental states, moroseness, irritability, drowsiness, headache and vertigo in adults.

(Continued from previous page)

7. Obesity	13	...	5	8
8. PARALYSIS.				
1. Infantile Paralysis	20	6	8	6
2. Facial "	30	18	8	4
3. Spastic "	15	3	7	5
	65	27	23	15

A feeling of constriction of the chest and more or less marked suffocation, referred to the sternal region, are experienced. The dyspnoea in bad cases almost reaches the stage of apnoea. The suffering of such cases is intense, the patient assumes various positions to assist respiration. There is prominence of eye-balls, distension of the superficial vessels of the neck, blueness of the lips, and clammy skin covered with sweat. The number of respirations per minute is usually reduced and the expirations are very much prolonged. The chest remains expanded, often barrel shaped owing to the patient's inability to contract it and expel the air.

Percussion.—Gives drumlike, somewhat high pitched note, over the area of the chest where the distension of the alveoli by imprisoned air is most marked. The area of cardiac and hepatic dullness becomes narrow and occasionally obliterated by the over-lying inflamed lung.

Auscultation.—It reveals sibilant rhonchi of varying pitch and intensity following the rhythm of the respiration. This is followed or accompanied by mucous rales. The pulse is usually slow and weak and the temperature is normal in majority of cases. Urine is generally very copious, of low specific gravity and light coloured.

Complications.—The most important complication is emphysema. The pulmonary circulation is interfered with and dilatation of the heart and œdema may occur.

Diagnosis.—Bronchitis: In all forms of bronchitis there is absence of periodicity, greater amount of expectoration, marked number of respirations, free chest motion, and more or less fever.

Emphysema: The dyspnoea is continuous. The dyspnoea of emphysema mostly appears on exertion.

Heart-Disease: Dyspnoea usually follows exercise or becomes greatly aggravated by it in cardiac disorders. In advanced cases, the dyspnoea is continuous and the cardiac lesions are easily recognized. The attacks occur in cases of mitral insufficiency with loss of compensation, and in cases of advanced arteriosclerosis with cardiac dilatation, myocarditis and renal insufficiency.

Spasm of the Diaphragm: There are sudden spasmodic expulsive efforts, frequently accompanied by hiccough.

Renal Disease and Uremia:—The presence of renal disease may be determined by examination of urine in which casts are present.

Prognosis.—The prognosis depends upon the nature of the underlying cause. It is good

in young subjects with well formed chests and in whom direct heredity cannot be traced. In all others, however, the chances of recovery are very limited. Death rarely ensues from spasmodic asthma, but its complications may prove fatal.

Treatment:—The treatment of asthma consists of: (1) Arrest of the paroxysm (2) Prevention of paroxysm (3) Removal of the pathological conditions forming the basis of the paroxysm.

(1) *The arrest of paroxysm:* Before instituting measures calculated to arrest an attack, the nature of the disorder giving rise to dyspnoea as a symptom must be carefully determined.

When the presence of true asthma is ascertained, the object should be to relieve suffering by antispasmodics and narcotics. The best and reliable antispasmodics are:—Tr. lobelia atheris, Ext. grindelia liq., Tr. stramonium, amyl. nitrate, Tr. hyoscyamus, ether, and chloroform. I generally prescribe the following with good results:—

R/	
Pot. Iodide	gr. xv.
Amoni. Chloride	dr. $\frac{1}{2}$
Vin. Ipecac	dr. $\frac{1}{2}$
Tr. Scillae	dr. $\frac{1}{2}$
Tr. Lobelia atheris	dr. $\frac{1}{2}$
Pot. Bromide	dr. $\frac{1}{2}$
Syp. Tolu	dr. 2
Aqua	oz. 4
Mft. $\frac{1}{4}$ part every 3 hours.	

or

R/	
Pot. Bicarb	dr. 1.
Sodi. Nitrates	gr. 2.
Codein. Phosphas	gr. 2.
Tr. Hyoscyamus	dr. 2.
Liq. Trinitrini	m. iv.
Ext. Grindeliae Robusta liq.	dr. $1\frac{1}{2}$
Ext. Glyceriza Liq.	dr. 2.
Aqua Anici	oz. 4.
Mft. $\frac{1}{4}$ part every 3 hours.	

I have tried "Felsol" with great success in very obstinate cases.

It is made up of Phenazon 0.25, Antipyrine 0.4, Todopyrine 0.25, Caffein 0.1, Susc. Alba 0.01, and Extr. Brachycladi 0.01.

Lobelin-Ingetheim: It is the isolated hydrochloride of the principle alkaloid of the Lobelia Inflata, a plant indigenous to North America. When injected subcutaneously or intravenously it stimulates respiratory centre where the respiratory paralysis is threatening. It is used with great success in asphyxia neonatorum.

All the narcotics give rise to drug habit and a sufficiently large dose is required to pro-

duce physiological effects to give satisfactory results. Small doses of morphine sulphate given hypodermically are the most certain agents when rapid effects are necessary. Atropine (not more than 1/120 gr.) may be given in any case. Morphine combined with atropine is injected to arrest an attack. There are certain dangers in using morphine or codeine if Bright's disease is present. As held by Bruggemann, Asthma is the result of irritation of the respiratory centre. He advocates the inhalation of an atropine spray. This has frequently arrested an attack of asthma, so also painting the nasal mucosa with atropine-cocaine solution. The special areas where their solution exerts its action seem to be restricted to the region behind the uvula, the tonsils and their vicinity.

Caffeine valerian gr. 4, or theobromine sodium salicylate gr. 8, when taken at the onset, gives relief. It should be repeated if necessary. If the attack of asthma is induced by bronchial catarrh iodine preparations do good service. Catarrhal Vaccine yields good results when the paroxysm is accompanied with bronchitis. The initial doses should be very small and then they should be increased upto 1 c. c. according to the reaction. Epinephrin, or adrenalin, is very effective. The best effects are obtained by injecting 5 to 10 ms. of the 1:1000 solution intramuscularly. Chloroform proves rapidly effective in some cases. Fifteen drops in a half-tumblerful of water to which a teaspoonful of syrup of orange-peel is added make an elegant preparation. Chloroform anaesthesia will also arrest the paroxysm, but it is not to be recommended unless other methods have failed. Smoke obtained from antispasmodic remedies like nitre, stramonium, hyoscyamus and belladonna is often efficacious in cases in which emphysema is not marked.

2. Prevention of Paroxysm: Phenomena observed in the chest walls and lungs may be due to reflex action, the primary factor of which may be located in the naso-pharyngeal tract, the ear, the digestive tract or the genital organs. Careful examination of all these organs becomes, therefore, imperative. The nose and the stomach are, doubtless, most frequently at fault. In the majority of cases nasal lesions such as polypus, deflected septum and turbinal hypertrophy are frequently met with. The sinuses including the antrum may also, when diseased, cause asthma reflexly. Disorders of digestion very frequently act as starting points of paroxysms. The asthmatic individuals should take easily digestible food and finish their evening meal early. Alcoholic

beverages should be avoided as far as possible owing to their inhibitory influence over the various digestive processes. Meat, greasy soups, coffee, sweets and other substances tending to the formation of urea are contra-indicated. Milk, fish, eggs and vegetables should form the patient's diet. Pituitary, corpus luteum and thyroid gland preparation produce their effects by stimulating the formation of antibodies.

3. Curative Measures: The removal of whatever organic disorder that may be present, whether located in the nasal cavities, stomach, genital tract etc., is the very essence of radical treatment. Diathetic affections such as syphilis and other conditions should be attended to. Underlying varieties of primary disorders may be classed as complications. The most prominent of these are:—(1) General neurosis of chronic type. (2) Inflammatory lesions of the bronchial tract. (3) The malformation of the thorax,—"the barrel-chest"—due to excessive distension.

When bronchial lesions are present potassium iodide in increasing doses from 5 gr. to 30 gr. should be given. Fowler's Solution, 3 minims three times a day, generally counteracts the rashes and other unpleasant effects of potassium iodide. Hydro-therapy in the form of cervical or spinal cord douches has also been advocated. The sudden application of a jet of cold water to the back of the neck often controls an attack of asthma. Strychnine gives nutrition and tone to these muscles. Massage to the intercostal and deltoid is beneficial in such cases. Vaccines, particularly autogenous, have proved effective.

"In asthma occurring during the menopause, ovarian substance (corpus luteum) relieves the dyspnoea along with the other symptoms of menopause."—*Medical & Surgical Journal* 1918.)

When asthma occurs in connection with pregnancy, viburnum prunifolium is a valuable remedy. If there should be any indication of abortion, chloral hydrate may be administered simultaneously.

"Large doses of sodium bicarbonate or sodium citrate augments an asthmatic attack. The dose should be continued only until the reaction of urine is blue to litmus paper. While urine is kept alkaline, soamin gr. 1. may be injected subcutaneously or intramuscularly. After four days the dose should be increased to $1\frac{1}{2}$ gr. till the maximum dose of gr. 5. is reached"—(*Calcutta Medical Journal*, June, 1918.)

Observations on Cerebro-Spinal Fever in and around Delhi*

• Dr. Dalip Singh, L.M.P., L.T.M. (Cal.),
Nangloi, Delhi Province

Cerebro-spinal Meningitis is an acute inflammation of the meninges of the brain and spinal cord due to the invasion of N. Meningitidis and is characterised clinically by sudden fever, contractions of muscles, nervous shock, cutaneous eruptions, various nervous and other complications.

Etiology.—This disease seems to be more common during the months of March and April, but since the last epidemic sporadic cases are occurring all the year round.

This disease is contagious. Most of the cases come from the congested and mill areas of the town.

The incriminating micro-organism is N. Meningitidis, which can be recovered from the throat and spinal fluid. It looks smaller than N. Catarrhalis and larger than N. Gonorrhoea. It produces bacteremia, and it has special affinity for the meninges.

Symptoms.—(a) Symptoms which are due to septicaemia: high temperature, headache not relieved by A. P. C. powder, dry tongue, hoarse voice, diarrhoea, vomiting, dry skin and aching all over the body. Muscles are painful and tender on pressure.

(b) Then the meningeal symptoms when the infection is localised in the meninges: retraction of the neck, Kernig's sign, photophobia, paralysis of eye muscles especially external rectus and pupils, and no reaction to light. The patient may pass on to the 3rd stage or the chronic stage, or resolution may occur with complete recovery with slight hearing or speech defects.

(c) Then the 3rd stage is of coma, low muttering delirium and exhaustion, and opisthotonos due to irritation of the anterior roots. This is the course in a typical case.

Abortive case may occur. The patient gets only slight temperature and stiffness in the neck, and he may recover. In the fulminating cases death may occur within 24 hours.

*A paper read at the 15th Punjab Provincial Conference of the A.I.M.L. Association on 1st May 1938.

Climate.—Climate is thought to bear considerable influence in the prevention of asthmatic paroxysms. Removal of the patient from cold and damp climate to a warm and dry one may prove of lasting benefit.

Chronic form.—The patient can linger on upto 5 months often with fatal results.

There are relapsing cases just like typhoid, but the temperature curve is continuous and the relapse may last about a month. The relapse can occur after 2 or 3 years without any diagnosis being made as these cases are typical cases of bacteremia and not of meningitis, but meningococci and pus cells can be found in the C. S. fluid of these cases if the doctor takes care to examine it.

Diagnosis.—Fever, headache, retraction of the neck, rigidity of the muscles, presence of Kernig's sign are the clinical diagnostic features. Lumbar puncture would confirm the diagnosis, and should be done.

(a) *Examination of Blood.*—Marked leucocytosis (polymorphonuclear) 40,000 to 60,000 per c. mm., and from a blood culture the meningococci can be grown.

(b) *Examination of the C. S. fluid.*—Normally it runs by drops but in meningitis it runs like a stream and under pressure. The fluid is turbid, purulent, yellow and sometimes drops of pus come out generally, but if it is under high pressure and clear it should be centrifuged and the sediment examined as it remains clear till the concentration of the polymorphos reaches 500 per c.mm. In cachectic patient the C. S. fluid may not be under pressure but is always slightly turbid.

The C. S. fluid should be examined quite fresh and in warm condition microscopically as *N. meningitidis* has a tendency towards autolysis.

(c) *Cultural examination:* It should be done either with C. S. fluid or with nasopharyngeal swab. It is done usually in pigeon's blood agar.

Treatment:—Prevention.—At once the case should be notified and isolated. No visitor should be allowed to go near him. Sputum and excreta should be disinfected. Cinema halls should be well ventilated and exhaust fans should be working in full speed. The seats should be wide apart, and if possible the doors should be opened during the show.

All the contacts should be given prophylactic vaccine. Mouth and nose may be kept clean by antiseptic gargles and sprays.

Curative.—(a) The general treatment consists of: keeping the temperature down by sponging, making the patient restful by giving chloral hydrate and pot. bromide and nursing; bowels should be opened once a day by enemata. One must keep an eye for retention of urine. Bed sores ought to be prevented.

The strength of the patient is to be maintained by judicious feeding with milk, glucose, egg, meat juice, fruit juice, especially of oranges. Water should be given freely. Glucose may be given with saline by mouth or intravenously. Keep the urine alkaline by giving soda bicarb. Urotropin up to 60 grams may be given per day.

Specific Treatment.—Serum therapy.—Draw the C. S. fluid as much as possible till the flow is just like normal, i.e., 60 drops per minute and inject intrathecally anti-meningococci serum about 10 c.c. less than the fluid which has been drawn—generally 30 or 40 c.c. is given.

In order to combat bacteremia anti-meningococci serum should be given intravenously also. The combined method of treatment will reduce the period of hospitalization.

There is no fixed rule as to the termination of serum treatment but it may be given daily intrathecally till the C. S. fluid is reasonably clear, then on every 2nd day till the pressure is normal and C. S. fluid is found to be free from *N. meningitidis* and also till the temperature has come down to normal. After a month, lumbar puncture should be done to see whether the C. S. fluid is clear or not, so as to avoid relapses.

Before discharging patients two nasopharyngeal swabs should be negative for *N. meningitidis*.

Prontosil by mouth or intramuscular injection, and serum intrathecally were also tried by me with good results.

Prognosis: If there is no treatment, 90 per cent die. With treatment by serum intrathecally the mortality was 40 per cent out of 33 cases admitted into the Infectious Diseases Hospital, Delhi, during my incumbency from April to October 1937. In the cases which came with pneumonia or with comatose condition the mortality rate was 99 per cent.

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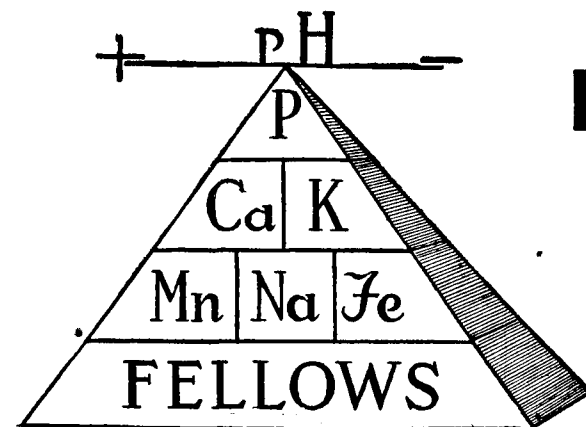
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The Year Gone By

A retrospect of medico-political events during the year nineteen hundred and thirty-eight does not fill us with hopes for the new year into which we are ushered by the whirligig of time. The year gone by has seen the autonomous provincial governments well on the saddle, but the high hopes of the profession that these popular governments will hearken to its needs and embark on schemes of extensive medical relief have not been fulfilled. In fact very few of the Provincial Ministries of Health seemed to have evolved a definite and forward policy in matters of medical education, medical relief and medical administration. They have been running in old grooves with brazen indifference and barren programme.

Of the few Ministries of Health which were active, that of Madras was the most active. But its activities were such that it has upset the existing order of things too rudely to be of benefit to the profession or to the public. The abolition of licentiate medical

education, the amendment to the Madras Medical Registration Act, and the contemplated Public Health Act were no doubt hailed with satisfaction, but the rest of the changes introduced by the Ministry were immensely unpopular. These were: the replacement of State-paid medical service by Honorary Medical Service, the prohibition of private practice to State Medical Officers, the proposal to retrench the existing meagre subsidies to rural medical practitioners, with a view, perhaps, to put them ultimately on an honorary basis, and the formation of a male-nursing cadre which has hitherto been chiefly the prerogative of women. We have protested in these columns against these measures but in vain. The Minister of Health seems to be so much obsessed with the philosophy of service and sacrifice on behalf of the poor millions of this country that he does not think for a moment how the medical men can live without even bread and water and how they can give medical relief while they themselves are on the verge of starvation. The net result of his administration has been the intensification of the existing unemployment among medical men with no real increase in the quality or the extent of medical relief to the people. He thinks that medical administration and medical relief can be built on the quicksands of honorary service. Reason and realism make no appeal to him, and, he wants us to believe that his wisdom and goodness alone are the best protection for the profession and the public.

The Bombay Minister of Health was fortunately not so rash and self-opinionated as that of his colleague in Madras, but his administration had nothing substantial to its credit. He introduced two bills in the legislature: one for consolidating the Ayurvedic and Unani practitioners and the other aiming against inefficient private nursing homes of which Bombay contains quite a good number. Both these bills have not yet been enacted into law: probably they will be passed during the course of this year. These are indeed beneficial measures, but they do not indicate any positive achievement. Bombay, Ahmedabad and Sholapur are the three chief industrial centres where the labourers are without proper medical care, and the Health Minister could have initiated a scheme of health insurance for their benefit. But he did nothing of the kind. Even on the question of a uniform standard of medical school education, he was sitting on the fence when the College of Physicians and Surgeons proposed a 4½ years' course instead of a five years' course necessary for recognition by the

Medical Council for India. It was only when the Bombay Branch of the All-India Medical Licentiates' Association protested vigorously against his attitude that he finally yielded and made the pronouncement that the Poona and the Ahmedabad medical schools would be raised to the status of University medical colleges with effect from the next academic year.

The U. P. Minister of Health was more patriotic than practical when she defended vigorously the ancient indigenous systems of medicine in her legislature, and she, true to her belief, outlined a policy of "establishing a net work of dispensaries all over the province with a central hospital in such a position that both the indigenous dispensaries and allopathic hospitals would work in union." The wisdom of this policy, we submit with due deference, is questionable, and we believe strongly that the Government will not be right in offering to the people any other than a scientific system of treatment. If Ayurveda and Unani are to be resurrected from the grave of oblivion and neglect into which history has thrust them, they have necessarily to be made a part of the existing University medical curriculum instead of bolstering them up separately from and independent of modern medical science. In the same speech she deplored that the Western system of medicine was degenerating into a sort of trade-unionism. Of course, this is not a fact either in India or elsewhere, but we shall pass by this criticism as our defence of the profession may be misunderstood as prompted by motives of selfishness and self-praise. When the Hon'ble Drs. Shiv Ram Vaid and Murari Lal raised a motion that the medical licentiates be given facilities for higher medical education at the Lucknow University and that the standard of the Agra Medical School be raised to the minimum required by the Medical Council for India, the Hon'ble Minister went off at a tangent with sweeping remarks against the century-old Agra Medical School and the medical licentiates who have been the bulwark of medical relief during the period of India's greatest suffering, and said rather mysteriously:

"The mere raising of the standard cannot solve the question which is not as simple as it appears on the paper. If it were so, the Congress Ministry would have done so by now."

We wonder what the Minister had at the back of her mind when she said this, and it is rather puzzling how she, holding the view that "it is useless to add to the present L.M.P.s", could still oppose the move to raise the standard of education at the Agra Medical School. We understand that she has appoint-

ed a committee to go into this question, and we still hope that she will finally reform the Agra Medical School after the University standard.

The other Ministries of Health, it may be said generally, worked on stereotyped lines. In the Punjab there was a Civil Surgeons' Conference which, among other things, recommended that only the poor patients should be treated in the Government hospitals and that rural medical relief should be extended by subsidising a large number of medical practitioners to settle in rural areas. What action the Punjab Government is going to take is still unknown, but we do hope that they would follow up the programme laid down by the Civil Surgeons' Conference, and at the same time raise the standard of the Amritsar Medical School, a reform which cannot be delayed any longer and which, for obvious reasons, is as urgent as medical relief itself. In Bengal no activity was visible, and the Bengal Minister of Health has yet made no pronouncement regarding his Government's policy towards the establishment of a recognised standard of medical education in the medical schools of his province. Bengal has got nine medical schools, the highest in any province, and it is time the Bengal Minister of Health tackles this question without any avoidable loss of time. Equally important are the problems of medical relief and Public Health in rural Bengal which is ridden with cholera, malaria and kala-azar.

One of the most outstanding events during the year under review was the righteous indictment of the Indian Medical Council by the Premier of Madras. If only the other provincial governments had followed suit, the unpopularity of the Indian Medical Council Act, as at present constituted, would have been so clearly manifest that the Government of India might have been forced to amend the Act suitably. We yet hope that during this year all the Provincial Governments would compel the Central Government to broad-base the Act on national lines, and to shake off the suzerainty of the G.M.C. over the Medical Council for India.

Another event of great utility to the nation was the inauguration of the campaign against tuberculosis by Lady Linlithgow. The response was generous and the total collections up to 1st October 1938 amounted to Rs. 57,36,422-11-4.

The Provincial Branches of the All-India Medical Licentiates' Association were very active and the year 1938 saw a number of provincial conferences—almost a record number

for any one single year during the last 32 years of their existence.

The Standing Committee of the Association met at Delhi on 1st October 1938 and urged the Government of India to establish uniform recognised minimum standard of medical education in all the medical schools and to affiliate these schools, if necessary, to the Provincial Universities. The Government of India Conference on medical school education was held during the 2nd week of November and decided to recommend the raising of the standard of medical school education and the establishment of an uniform qualification in such a way as to gain the recognition of the Indian Medical Council.

We hope to see during this new year a real integration of medical education in India. May we also hope that all the Provincial Governments will make the question of medical relief a chief plank in their activities? The top-heavy medical administration should be pulled down and a system of socialised medical relief should be adumbrated which will ease the acute unemployment among medical men while it will offer to the people greater medical amenities. The snags in the Provincial Medical Registration Acts and the Indian Medical Council Act should be removed by suitable legislation. The Government and the profession should, by a co-operative effort, make the people of this land healthier than what is unfortunately the case now. It is up to the popular Provincial Governments to give a lead in these matters, and help the profession in the discharge of its duties with self-respect and self-confidence, and above all, to keep it above want and starvation.

Conference Number

This year's Conference Number will be published, as usual, on the 15th of March. It will record the deliberations of the 29th Conference of the All-India Medical Licentiates' Association. To make this number lively and useful we have made arrangements for the publication of a brief summary of the transactions of its Scientific session as well as the discussions that took place in the Subjects Committee and the open session of the Conference.

A short summary of the proceedings of the 14th Conference of the Indian Medical Association will also be published.

Press Comments on the Presidential Addresses and on the resolutions passed by these Conferences will also be published as an additional, but interesting, feature. This will show the extent of interest which the lay press takes in medico-political matters.

CURRENT COMMENTS

(Under this heading topics of medical and medico-political interests will be discussed.)

Anti-Pneumococcus Serum

The treatment of lobar pneumonia with homologous anti-pneumococcus serum has been acclaimed on all hands as a distinct and definite improvement, and its success depends essentially on two factors: (1) the finding out of the serological type of pneumococci in any one given case, (2) the administration, very early in the disease, of the specific homologous serum. This involves an effective organisation which would undertake quick "typing" of pneumococci, and a supply equally early of the specific type of serum. Time is the very essence in the specific serum therapy in lobar pneumonia. At first serum was used on types I and II of pneumococci; later it was discovered that there were no fewer than twenty-nine different serological types. Till 1936 the horse serum was used exclusively, but later, attempts were made to substitute rabbit for horse as a source of serum. Rabbit's anti-pneumococcus serum is, of course, less costly, and Loughlin and others¹ claim as well that the unconcentrated and refined rabbit serum contains higher protective titres, is free from anaphylactic shock and reactions, and penetrates the vascular endothelium more readily and effectively than the horse serum. America, it seems, has perfected an elaborate organisation for the distribution of specific anti-pneumococci serum, and every hospital is equipped with facilities for quick "typing" of the serological strains of pneumococci. Is such an organisation possible in India, if not now, at least in the near future? We think it is not possible for various reasons, and hence serum therapy for lobar pneumonia in this country is not "practical politics." For one thing, we have not sufficient data which would indicate with any approximate accuracy as to the predominating "Type" in Indian pneumonia; for another, there is no laboratory in India which would help the practitioner in diagnosing the "types" within 24 hours of the submission of the sputum. At present, we have no other go but to fall back on the old methods of treatment. Even oxygen may not be available in rural practice. Sulphanilamide is still on its trial. Polyvalent anti-pneumococcus serum is generally used by city practitioners more as a gun-shot remedy than as one based on the appreciation of the type of the individual case. We hope that at least in hospital practice arrangements for specific

¹ Jour A.M.A., Aug. 6, 1938, pp. 497.

homologous serum therapy for cases of lobar pneumonia will soon be undertaken, and thus take advantage of what undoubtedly constitutes a distinct advance in the treatment of what Osler has characterised as "the Captain of the men of death."

Vitamin C and Whooping Cough

The inhibition of bacillus diphtheria and H. pertussis, *in vitro*, by the addition of ascorbic acid led some workers to apply this knowledge to clinical medicine, particularly in the treatment of diphtheria and whooping cough. Writers were not wanting who reported favourably on the successful use of ascorbic acid in the treatment of these conditions. On the strength of animal experiments, they believed that vitamin C (or ascorbic acid) specifically antagonises the growth of these organisms and inactivates its toxins. But Douglas Gairdner² tells a different story. The result of his treatment of 41 children with whooping cough, 21 of whom were treated with large doses of vitamin C and 20 served as control, is, according to him, that vitamin C in whooping cough has no appreciable effect on the course or the severity of this disease, and he states with perfect justification that the effect of vitamin C on this disease is at present unproven. This shows the danger of taking the results of animal experiments as too literally applicable in the case of men. There is no doubt that in acute infectious febrile diseases, there is a pronounced deficiency, particularly of vitamin C, but to connect this as cause and effect is not right scientific reasoning; much more dangerous is to make claims for it as a specific therapy in the treatment of diphtheria and whooping cough where early treatment with sera and vaccine is the only hope, at present, against their proving fatal.

Classification of Streptococci

Bradley³ maintains that old nomenclatures are a hindrance. The classification of streptococci from the point of view of their pathogenicity to man, he says, should be based on serological typing, and only those which give B. hæmolysis on horse-blood agar should be considered as pathogenic. We entirely agree, and it is obvious that a mere morphological and cultural definition of a given organism is incomplete unless its hæmolytic properties are determined by serological typing. In a recent survey of streptococcal epidemiology, Bradley found that streptococcus pyogenes and its various serological strains form a group which is most commonly pathogenic to man in temperate climate, and he states that in

any given epidemic a single strain of Str. pyogenes may produce agina, scarlet fever, erysipelas, cellulitis, lymphangitis, adenitis, otitis, sinusitis, meningitis, puerperal fever, septicæmia, etc. There has been no recent survey, in India, of streptococcal epidemiology and we are, therefore, not in a position to say, as definitely as Bradley does, that Str. pyogenes is possibly common in this country. Considering the high incidence of puerperal sepsis and throat infections in our country, it is time that such a survey is undertaken, so that streptococcal epidemics may be prevented as far as possible, and a fresh light may be thrown on its origin and spread.

Bed-Side Medicine

There is no denying the fact that bed-side medicine has receded to the back-ground after the advent of modern laboratory technique in diagnosis. The advances in such technique are so overwhelming and revolutionary that the student of medicine has lost, or is losing, the use of his natural faculties in the diagnosis of diseases. In other words, he has come to rely more on the laboratory report than on the clinical study of the case. Wasserman and Widal tests, X-ray diagnosis of fractures and abdominal lesions, hæmotological findings and urine analyses are no doubt necessary, but it would be foolish to subordinate clinical findings to laboratory report. They must supplement and not supplant the clinical diagnosis. Such a lopsided teaching is indeed deplorable, and is particularly unsuited to Indian conditions in as much as most of the practitioners are long-way off from the nearest laboratory or X-ray institute. This is a responsibility which medical institutions in India should be aware of and fulfil it in order that the qualified medical men may be able to serve the suffering public even under the most unfavourable circumstances. Besides, most of the Indian patients are too poor to pay for laboratory diagnosis, and it is, therefore, all the more necessary that the qualifying doctors should be helped to develop and practise the art of clinical diagnosis to the fullest possible extent.

Private Practice of State Medical Officers

The Madras Ministry of Health is proposing to deprive the privilege of private practice to State-paid medical officers on the ground that the large body of independent medical practitioners have been not altogether prosperous owing, it is alleged, to the competition by the former. This has not been substantiated by any statistical evidence, and is obviously based on mere impression. The Province of Madras has 6085 practitioners on the roll of the Provincial Medical Register. Out of these only 755 are paid medical officers of the Govern-

² B.M.J., Oct. 8, 1938.

³ Ibid.

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THE INDIAN MEDICAL PROFESSION*

BY

MAJOR-GENERAL SIR CUTHBERT SPRAWSON, C.I.E., I.M.S., (Retd.)

The medical profession of India has had peculiar origins, has peculiar conditions affecting it, and would seem to require peculiar consideration for its future. It would be bold to style this address "The Future of the Indian Medical Profession," for no one knows what the future may hold, but it is mostly of the present and the future I wish to speak and to consider the forces acting thereto, and we can at least say how we should like the future of the profession to develop and how we think it may best do so. To state that last objective first we may say briefly that we should like to see in India a medical profession numerous enough and skilled enough to convey relief on scientific lines to the sick in every part of India, and we should like to see a united profession able to speak with one voice, and that an influential voice, on matters affecting the health of the Indian people. Neither of these desirable aims is at present near realization.

There have always been medical men in India, but the genesis of the modern profession may be said to date from the establishment by the various provincial Governments in the country of medical schools and colleges to train Indian students in the accepted medical science of the time. The teachers were officers of the Indian Medical Service, and the training was developed on the lines of the British medical schools. The senior medical college is little more than a hundred years old, and we may conclude that the work of training was well done, because of the present high standard attained by these colleges, by the fact that they are now able in a large measure to train their own teaching staff and by the success of their graduates in after-life.

It makes one of the peculiarities of the profession in India that there was formerly a preponderance

of officers of Government among the leading practitioners of medicine, and except in the case of the largest cities it is still the case that the majority of the leading medical men are officials. Of recent years, however, the independent practitioners have so largely increased in numbers as to become a weighty influence. It is only about thirty years since Lord Morley expressed a wish to see the growth of an independent medical profession in India, and already among its members the independent profession includes men of eminence, and even research workers, who have contributed to the world's fight against disease. It may be anticipated that before long the independent element will assume a preponderating influence in the profession, which might be considered the logical position in a democratic country.

GRADUATES AND LICENTIATES

Another peculiarity of the profession in India, wherein it differs from nearly all other countries, is what I may call the disunity of the profession. I have referred to the establishment of medical schools as contrasted with medical colleges. The colleges train students for a university degree—graduates who can bear comparison with those of any country; the schools admit students of lower basic education, and give them generally a shorter training, ending with a licentiate. It is unnecessary to ask why these two divisions were made—there were good reasons at the time—but we are faced now with two classes so separate as almost to amount to a caste distinction. It is very difficult, almost impossible, for a licentiate to become a graduate.

That by itself is not peculiar, for it is difficult for a licentiate in Britain to become a graduate

* A Lecture delivered before the East India Association, London, with Sir Feroz Khan Noon in the chair, Dec. 1938.

unless he has previously been through all the examinations beginning with the preliminary arts test. But in India the separation is more compartmental and the distinction more emphatic. If the graduate and the licentiate enter Government service, as the best of both classes usually do, they enter different grades of that service on different rates of pay and with different functions and privileges; they receive different designations: one is called an assistant-surgeon and the other a sub-assistant-surgeon. In the registers of most provincial medical councils their names are entered in different parts of the register, and the licentiate cannot register with the Medical Council of India. The licentiate cannot join some of the local medical associations, which are reserved for graduates alone: similarly there are associations for licentiates only.

I do not adversely criticize this state of affairs; it has developed naturally according to the needs of the time. But it obviously gives rise not only to antagonism of the profession, but to antagonism; often not to a healthy rivalry, but to opposition and sometimes rancour. This is most undesirable; the energies of the profession should not be dissipated in internal strife, but devoted to awakening the mind of the people to matters of health and to leading them on to better things, and I believe it will be for the good of the profession, and therefore for the good of India as a whole, when the profession in India can speak with one voice.

Very recently I visited Russia, and I found that there also were two grades of medical practitioners. They have the graduates who after ten years of school training receive a medical education for five years, and then in smaller numbers they have a class called "feldshers," who have only seven years at school and then a medical course of three years. The feldshers are therefore probably less well trained than the Indian licentiates. This dual standard is a legacy from Czarist times, and the Soviet Government at first had a tendency to abolish the feldsher class; but owing to a great shortage of medical personnel they are now retaining them in increased numbers; but presumably as a temporary expedient only until they have enough doctors throughout all their areas. I shall have more to say about Russian analogies later.

OTHER RANKS

The position in India is further complicated by the existence of at least two other classes—in small numbers it is true; but a few words may be said about each of them. In some medical colleges there was formerly a class called "apothecaries," who were educated side by side with the undergraduates, but passed examinations of a lower standard. This diploma is no longer given, but several holders of it are still in practice. There is also the military branch of assistant-surgeons, who are educated at some medical colleges and receive a diploma, but no degree. There are several hundreds of this class still practising; but since the last four years all fresh entrants to this

service are compelled to do the full graduate course and take the degree so that after a year or so their numbers will gradually lessen and eventually disappear.

The distinction between the two main classes holds also throughout the independent profession as it does among those in Government service. The average graduate is of course a much better-educated man than the average licentiate; but there are many more licentiates than graduates. I have found it impossible to arrive at accurate figures of the numbers of either class. The provincial medical registers do not always classify them in this way, and the registers of the provinces of Assam, Bihar and Orissa register all men in one undifferentiated list. More confusing still is that while nearly all graduates register, a very large number of licentiates do not. Further, the information could not be obtained from the licensing bodies as they have no knowledge whether the men who have obtained diplomas from them are still alive. To make, however, a rough computation, I should say that while there are 12,000 graduates of Indian medical colleges, there are probably well over 30,000 licentiates.

Having detected what I consider to be an unhealthy spot, I feel I should propose a remedy. The remedy proposed is gradually to raise the standard of licentiate teaching until it approximates to that of the graduate, and then the differences should disappear. That will take a long time. It is not only a matter of lengthening the medical course and improving instruction; the preliminary culture must be higher, and both equipment and instructors must be better.

IMPROVED STANDARDS NEEDED

Three years ago I took advantage of the official position I then held to collect statistics from all the twenty-eight medical schools in India and to visit many of them. The Government of India published the results in a booklet, which shows my conclusion that none of the schools entirely attains the standard I think they should attain, although some of them are quite good. There is an appreciable difference, though not a very great one, between the best of the medical schools and an average medical college; but there is a great gulf between the best and the worst of the medical schools. In the booklet remedies to meet the deficiencies noted are also suggested. The roads to union in the profession and to improvement in its education are therefore much in the same direction—that is, to make the medical schools more efficient. The way is long and perhaps hard, but I see no other.

The Government of Madras, perhaps the most advanced of the local Governments in medical matters, apparently sees things in much the same light, for they have transformed their two medical schools into colleges. I sympathize entirely with that object, but am surprised that even in Madras the change-over could be made so rapidly. The schools in many other parts are far below this

possibility. Another thing that aids professional unity in some degree is the formation of local medical associations that admit all kinds of registered practitioners. These associations have mainly social and clinical meetings: the introduction of medico-politics to their discussions may lead to difficulty because of the diverse interests of the various classes that compose their membership.

So much for the production of a profession sufficiently skilled and for its union; we have now to consider how it can become numerous enough, or at least accessible enough to give relief to all the sick in the country.

When I say that the profession should be numerous enough, I am aware that there are some who think their numbers are already too great for the country in its present state, and that they would place some restriction on the entry of students to the medical course. For myself, I think it wiser to rely on the natural demand and supply for medical men, and, provided we could both educate and distribute them properly, I would welcome still larger numbers. I cannot regard the present numbers as excessive when we know that in Great Britain there is one registered doctor to about every 1,048 of population, whereas in India, counting all the grades, there is only one recognized medical man to about every 9,300 of the people. I will speak later of the poor economical state of many of the profession; but in any case everyone will agree that we should make medical attendance as accessible as possible to all.

THE SICK POOR

Here we come to the primary question whether India should consider it her duty or her aim to provide free medical attendance for all her sick poor. In Great Britain that has long been the case, and apart from all health-insurance schemes the Poor Law of England allows, and I believe now efficiently provides, free attendance for all who cannot afford a doctor. I have never heard it authoritatively stated whether India assumes a similar responsibility or not; presumably she does not though it may be admitted that the aim is a desirable one. But in any case it is impracticable in the near future, except in a very partial degree. The majority of the population probably never see a doctor at all, and that is chiefly owing to the inaccessibility of proper medical aid.

There is, however, a large number of qualified medical men of all grades in India who find it difficult to earn a living of the standard they have a right to expect after their long period of training. I have never heard of any one of them starving, but very often of financial difficulties and of unworthy circumstances.

There is an over-keen professional rivalry and more crowding than in England, and this competition helps to produce a low standard of medical ethics. The crowding is confined to the towns; in the rural areas there is a demand for more medical men. Practitioners will not readily, even when junior and even when partially subsidized, go to

practise in villages and the smallest towns. They say they cannot earn a living there; but the reasons seem to be more the social disadvantages of rural life for an educated man—he feels isolated—and still more the difficulty of educating his children properly in a village school.

These are real difficulties; though I cannot but think that the recent advent to India of the ubiquitous motor omnibus has done something to relieve the former complaint, and as regards the children, that the subsidizing authority might make for the children over ten years of age of their practitioners an arrangement of special terms for their education in boarding schools. The best method of inducing practitioners to work in villages seems to be that of subsidy. A living wage and free drugs are provided for one who will see at least twenty-five patients a day free of charge. The rest of the day he has to himself, for private practice if he can get it, and some get a good deal. The system works well enough in the Madras Presidency, where there are about 500 such subsidized practitioners, and I fail to see why it should not work in other parts. The subsidized practitioner is not regarded as a Government servant; he is an independent practitioner who receives a subsidy, and I consider the increase of this class should provide in time means of medical relief for millions of agricultural labourers and their families. At the same time it is necessary to regard this class as somewhat elastic and not to make rules too rigid: different areas may require special modification and sympathy must be given to the peculiar difficulties of individual cases.

A COMPARISON WITH RUSSIA

Probably the country that most resembles India in its medical problem is Russia. Here, again there is a vast area mainly agricultural that has hitherto been inadequately staffed by health and medical services, though now this is being rapidly remedied. In the Russia of 1913 there were 25,000 doctors, a number that was sadly reduced by subsequent disturbances and typhus epidemics. There are now 100,000 doctors for a population of 170 millions, allowing one doctor for 1,700 people, but this is considered insufficient, they aim at one doctor per 1,000 inhabitants, and so in addition to the retention of the feldsher class, to which I have already referred, very large numbers of new graduates are produced yearly. The actual numbers of medical students now in the Russian schools are about 96,000 undergraduates and nearly 45,000 feldshers. At least half the numbers are women. This is mass production, and the quality of much of the finished product may be questioned; but the position is regarded as a temporary expedient, and once the numbers are up more attention will be paid to quality.

Now the need of India for more extensive medical attendance is at least as great as that of Russia, and yet we do not seem able to accommodate even the comparatively small number of medical men we have, nor to distribute them where they are most wanted. I asked the medical

educationalists in the Soviet how they got their doctors to remote rural areas or to undesirable places. They said that every young graduate or feldsher was bound to go for the first year, or sometimes for three years, where he was sent, and that thereafter he could go where he liked. He received a living wage. Rural areas were said to be popular, and in undesirable places the young graduate would be given more pay or privilege such as a motor-car or a cow. I suggest to the provincial Governments of India that they may well consider the feasibility of similar concessions to subsidized practitioners in certain areas. In my opinion the provision of medical aid to remote parts has never been undertaken with sufficient resolution by local Governments in India, the only Government that has progressed at all in this direction is that of Madras.

STATE DOCTORS

There are others, however, who think that in India medical aid should be extended to village areas as far as possible by an increase in the number of those who are whole-time Government servants, and not by the employment of honorary aid or the use of a subsidy. They cite the greater reliance it is possible to place on a disciplined servant of Government and point to the fact that the tendency in Great Britain now is more to a scheme of State aid. That is indeed so; but two important points may be indicated: firstly, although the British Medical Association is now recommending for adoption in Britain an extension of State-arranged attendance that would bring about two-thirds of the population of Britain into the scheme, yet this scheme does not propose the employment of a large number of whole-time Government medical officers, but the allotment of cases to independent practitioners who will be paid by subsidy. It is in fact a more elaborate system of subsidized practitioners and consultants. Secondly, strict comparison between India and Britain in this respect is impossible, and whatever scheme for relief of the sick poor of India may ultimately be adopted there must in my opinion be first a stage of independent or subsidized attendance. A sort of health insurance may well be introduced in India by large industrial undertakings for their employees, but I cannot see how a similar scheme would be possible in the near future for the whole country.

THE NEW MEDICAL COUNCILS

The establishment of Medical Councils, comparable to the General Medical Council of Great Britain, has had an influence on the development of the Indian profession. Provincial medical councils, which have been working for about 25 years more or less according to the province, have registered many, but not all, practitioners of scientific medicine in their areas; but these provincial councils have not got through the amount of work that might have been expected of them. The Medical Council of India has been in existence for less than five years, but has done a great deal in that time. This Council keeps no register of

graduates, but has been instrumental in securing re-recognition of the degrees of Indian universities by the General Medical Council. All the medical colleges of British India except one are now so recognized.

The Medical Council of India has further been responsible for directing the attention of local Governments and Universities to defects which have been remedied, and can claim that their representations have induced the spending on colleges and hospital of very large sums of money which would not otherwise have been available. The Council is now engaged in negotiations for mutual recognition with dominions and foreign countries. This Council is of great use to graduates who wish to study in Britain or elsewhere abroad; it is of no use to licentiates. But this should not be regarded as such a hardship to the licentiate as has been represented. The licentiate rarely requires to study abroad; it is very difficult for him to do so in any case, because the General Medical Council would not recognize his grade of qualification. The licentiateship is intended more for practice in India itself, and registration with a provincial medical council is sufficient. If the licentiate wishes to practise in another province of India than that in which he registered, there are reciprocal arrangements between the various provincial councils by which he can do so.

MEDICAL ETHICS

I have referred already to the over-crowding of medical men in towns and the keen competition tending to produce a low standard of ethics: this important matter of the relation of doctors to their patients and to one another requires further notice. Medical ethics is now rightly made a subject of instruction to undergraduates during the concluding years of their course, and as a rule the young graduates go out into the world with a pride in their profession and a determination to maintain the good standards that they have seen by example and have been taught. I have several times had my old students come back to see me after a few years of practice telling me that things are very different from what they expected and that some of their professional brethren are given to various mean practices by which they hope to entice their colleagues' patients away from them.

As a general rule it is the older members of the profession who are the worst in this respect, and there is this bright spot about it; that though the standard of medical ethics in India does not yet attain to the standard of Britain, yet it is, I believe, getting better and better, and as the present product of the medical colleges, who are as fine a set of young fellows as one could desire, make their presence felt, so will the standard improve further. It is certainly by my own observation better now than it was 30 years ago. After all the high standard that obtains now in Britain is of comparatively recent growth. If works of fiction give a true picture of their times we have only to refer to the pages of "Pickwick" to see the standard of D. Bob Sawyer a hundred years ago. If we get

back a little further to nearly two hundred years ago we can study the quackeries of Ferdinand Count Fathom in Smollett's classical novel and realize that the Indian bazaar would have nothing to teach him. Doubtless these two characters are exaggerations of their times; but I have full confidence that the young Indian graduates of to-day will raise the ethical standard to the best of their ability, and with a higher education for the licentiates that their ethical standard will also be improved.

So far I have said nothing about that part of the profession engaged solely in preventive medicine; yet it is more important that the methods of science for the prevention of epidemics and infectious diseases generally should be understood and accepted by the people than that the advantages of modern medicine and surgery be appreciated. The adoption of methods of cure, however, is usually a necessary preliminary to gain the confidence of a people before the introduction of preventive measures. The acceptance of preventive methods therefore will depend upon the understanding and trust that are placed by the people on the curative methods, so that it becomes doubly important that they should accept the latter, as indeed they mostly do. Briefly, the public health side of the profession is increasing in numbers and in influence, and is well-trained to afford local Governments and other bodies the advice and executive ability to carry out improvements in the cleanliness of towns and healthiness of the countryside.

GENERAL CONCLUSIONS

From what I have said it may be understood that the medical profession in India, including all branches of it and both official and private sides, is on the whole a competent body containing many able physicians and surgeons, some of them possessing the highest qualifications obtainable; but it would be still more competent as a body were it not for the peculiar divisions into which parts of it are too widely separated and for the too urban distribution of its members. I have already suggested remedies to deal with these defects. Of the measures I have proposed I consider the most important is to devote more attention to the medical schools than they have had in the past. The medical colleges have of recent years had a good deal of attention paid to them, partly as a result of the formation of the Medical Council of India, and before that time due to a general desire to bring the Indian degrees on a par with those in Britain.

The colleges have had considerable sums of money spent on their improvement, and it is now due to the schools, which after all educate the great majority of the medical profession in India, that they also should be properly equipped and staffed—two things that very few of them at present can claim to be. Of almost equal importance to this I regard the enlargement of the number of subsidized practitioners in rural areas and further inquiries to the possibility of introducing this or

a similar system in parts where it has not hitherto been known.

I have great confidence in the future of the Indian medical profession. I believe that in time it will not only fulfil all the functions that are demanded of it, but will initiate many improvements in the health of the Indian people: perhaps some thought and action on the points I have mentioned may help its progress to that goal.

Pharmacy in India—An Exposition

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In course of his comments on the medical profession in India, as recently published in the *Indian Medical Review*, the Director-General, Indian Medical Service, refers to pharmacy in this country in the following terms:—

"A close study irresistably points to the pressing need for immediate improvement of the situation in regard to the profession of pharmacy in India and to the manufacture, sale and import of drugs included in the British Pharmacopoeia as well as of those which are known and approved.

Both Bengal and Madras have instituted advanced courses in Pharmacy, but they are not popular mainly because the prospects for future remunerative employment are meagre. The probable solution would be to insist upon a reasonable standard of general education, such as is guaranteed by passing the Matriculation examination of an Indian University, an adequate course of training, including apprenticeship of not more than 9 to 12 months and properly organised provincial examinations."

2. The Director-General admits the "pressing need for immediate improvement" but if the concluding words of his comment are meant to leave the initiative and subsequent executive action with the Provinces, it will probably take years for the whole scheme to mature, for the funds to be found in the present financial stringency, and for the final start to be given. Hence it is clear that the conclusion is directly in conflict with the previous admission of pressing need. In the circumstances, one or the other must stand. Apparently there is no *via media* unless immediate action is taken by the Central Authority, the details being left to be carried out by the Provinces so far as they are concerned and as their funds admit. As, however, the pressing need was fully established long ago by the findings of the Drugs Enquiry Committee (1930), we are afraid we make ourselves ridiculous by continuing to talk of pressing need and still refraining from pressing for immediate legislation.

3. The question would have been easy of solution if immediate legislation for the whole of India by the Central Government in respect of the subject under discussion were possible. The difficulty, however, arises from the fact that under the Government of India Act, (1935) the control of drugs and the practice of pharmacy being mostly provincial subjects, the Government of India are precluded on technical grounds from taking action

without the previous concurrence of the local Governments.

4. Even under the Reforms (1919), preliminary to the introduction of the new Act, the difficulty referred to existed. In fact, that matter received due consideration at the hands of the Drugs Committee. Nevertheless, in view of the public health and economic interests of the whole country (which were at stake in the pharmaceutical line), and as the abuses therein could not be checked, and a uniform programme, educational and administrative, laid down unless there was a uniform and simultaneous legislation throughout the provinces, it apparently occurred to the Drugs Committee that there should be Central Legislation to meet the situation effectively and with uniformity. Under the special powers vested in the Governor-General in Council Central Legislation in respect of provincial matters was also possible. Accordingly, Central Legislation was strongly and deliberately recommended by the Committee in their report of 1931.

5. It is more than seven years since the report was submitted to the Government of India and the question arises why despite pressing need so much time has been allowed to pass away without a final decision having been arrived at hitherto. The first instalment of orders on the report was issued two years ago by the Government of India with the result that a Central Drug Testing Laboratory financed by Central Revenues has been established in Calcutta to give effect to one of the recommendations of the Drugs Committee. The other main recommendations were (1) a comprehensive Drugs Bill dealing with both *imported* and *local* drugs and (2) a comprehensive Pharmacy Bill to regulate pharmaceutical practice and training, both the Bills operating concurrently and both being enacted by the Government of India apparently for the reasons mentioned above.

6. It appears that the constitutional and legal difficulty explained in paragraphs 3 and 4 swayed so long with the Government of India, for under the Constitution the responsibility of seeing to the purity of drugs is divided between the Central and Provincial Governments. So far as the Sea and Land Customs are concerned, the import of drugs is exclusively under the control of the Central Government. Accordingly, in response to the findings of the Drugs Committee, they introduced in the Central Legislature in October 1937, a Bill dealing with *imported* drugs only, leaving the question of *local* drugs (manufacture, sale and storage) and of pharmaceutical practice and education within the limits of the Provinces to be dealt with by the Local Governments. The Select Committee to which the *Import of Drugs Bill* was referred, considered the Bill to be inadequate and incomplete and public criticism was also loud and hostile. In these circumstances the Government of India had to withdraw the Bill early in 1938 and to ask for the concurrence of the local governments in the proposal for the introduction in the Central Assembly of a more comprehensive Bill

dealing with both *imported* and *local* drugs. It is understood that an All-India legislation by the Central Legislature in regard to drugs has been generally accepted by the Local Government. This, however, would not solve the problem in its entirety for the control of drugs is quite distinct from the control of pharmacists and of pharmaceutical education. And as pharmacists are the custodians of drugs, the effectiveness of drugs cannot be separated from the training given to and the efficiency attained by the former. Consequently, a comprehensive Drugs Bill, as desired, should include not only provision relating to drugs, but also to pharmaceutical training, the duties and the status of pharmacists, and how they are to be employed. This is exactly what the Drugs Committee recommended and what the public have so long been agitating for. This also covers the solution suggested by the Director-General, Indian Medical Service, himself in his comment. Any deviation from what is universally desired, would again lead to consequences which sealed the fate of the *Import of Drugs Bill*.

7. Then there is a further aspect of the matter to be considered. This is the question of expenditure and how it is to be met. The Drugs Committee were aware of this aspect and although they were unable to estimate the extra cost involved, they recommended certain financial measures, namely, the imposition of certain export and import duties on drugs and a levy of fees for registration, licensing and testing of samples, which the committee thought would produce sufficient revenue to meet the whole cost. There being no other practical alternative to the present one, which is a *self-supporting* and *beneficial* scheme of cultural and industrial education associated with public health and social service work, it is clear that it deserves to engage the attention of the whole country and to be taken up immediately.

8. The manifold aspects of the problem of control of drugs and pharmacy in India have already been discussed by the writer in various previous articles appearing in newspapers and periodicals. To add further to the articles, brochures, pamphlets and books published by him since 1917 is hardly possible or necessary. A brief resume, however, will be found in the opening paragraphs of the article on "Pharmacy in India" in the *Indian and Eastern Chemist* for May 1938, page 153. The writer's last article in the same Journal for November 1938, containing suggestions for economising expenditure in the event of the establishment of a College of Pharmacy in Calcutta was published editorially because of the importance of the subject.

9. My final remarks are therefore that there is no time to lose by referring the proposed imposition of export and import duties on drugs and of registration and other fees to Provinces for their respective opinions. Seven years have already been spent over the consideration of the Drug Enquiry Committee's recommendation. The pre-

vious concurrence of the Provinces in a comprehensive Central Legislation must be taken to cover all points. Therefore what remains to be done is to arrange for a debate in the Central Legislative Assembly during the first, second and third reading of the proposed Bill before it is finally placed on the Statute Book before the current financial year closes. The necessary financial measures have to be provided for in the annual Finance Bill and the Finance Department of the Government of India will have to immediately take all preliminary steps. It is clear that the Drugs Bill including Pharmacy must be passed by the Central Legislature. If the Bill has to be initiated by the Department of Education, Health and Lands, that Department, in collaboration with the Legislative and the Finance Departments, will have to issue telegraphic reminders, where necessary to the Provincial Authority.

10. My concluding suggestions are that a Central Pharmaceutical Council under the Government of India, as recommended by the Drugs Committee be provisionally created at once. In addition to necessary departmental work this Council will be able to control the expenditure, as also the funds to be raised by proposed impositions, and introduce economies wherever possible. It need hardly be said that the creation of the aforesaid Central Council will supply the needed driving force to stimulate the provinces and to help them to co-ordinate their separate efforts, and preserve a uniform standard and objective.

NOTES ON MADRAS PUBLIC HEALTH BILL

A. Viswanathan

The Minister of Health has introduced a Bill for "Advancing Public Health in the Province of Madras" on the 28th December in the Legislative Assembly, and after a brief speech by the Minister it has been referred to a Select Committee.

The Bill provides for the constitution of a Public Health Board for the Province, the Statutory recognition of the Director of Public Health, and the vesting of adequate powers in him for the effective discharge of his duties.

The criticisms so far levelled against the Bill are that (1) it is revolutionary, (2) it gives too much power to medical officers of health, and (3) it encroaches on the freedom of the Local Self-Governing Institutions. But none have so far objected to the principles underlying the Bill.

After all, though the present Bill is long and compendious, it is no more than a consolidation of the existing enactments, rules and regulations on Public Health which have almost lain dormant without being put into actual operation. This is, indeed, a sound justification for the introduction of a compact legislation by the Madras Legislature. Of course, there are a few new provisions in the Bill which have become necessary in the light of recent experience.

The complaint against penal clauses in the bill cannot be justified. The failure of previous enactments was chiefly due to the absence of such penal clauses, and to the non-enforcement of the same when present. It is not at all likely that a Congress Government will enforce the penal clauses before exhausting other methods of bringing home the nature and the consequences of offence against sanitary principles and observance.

Another complaint is that the Medical Officers of Health and the Director of public Health are armed with too much powers. This complaint arises out of the ignorance of the Public that epidemic, like war, has to be fought on all fronts, and that as no General can win a war without discipline among his soldiers, no health officer can succeed in quelling an epidemic without enforcing sanitary discipline among the population whom he serves. The Government is there to prevent and to control any possible abuse of power by the Health Officers.

A summary of the Bill is given below:

The proposal to introduce public health legislation in this Presidency has been under the consideration of the Government for many years. At one time, the view prevailed that it would be sufficient to make suitable additions and amendments to the Acts governing local bodies, namely, the Madras City Municipal Act, 1919, the Madras District Municipalities Act, 1920, and the Madras Local Boards Act, 1920, and amendments were drafted on that basis. It was however decided subsequently to introduce a compact separate Bill containing such provisions as were essential for the advancement of public health, existing Acts being left unaltered as far as possible. A draft Bill was accordingly prepared in 1929 but its consideration was postponed, pending the introduction of the constitutional reforms which then seemed to be imminent. The Bill was revised by the Director of Public Health in 1936-37 in the light of subsequent alterations in the statute law and other developments and the revised Bill reached the Government some months after the present Ministry assumed office. This Bill has undergone a careful and prolonged scrutiny, and important provisions have also been added to it.

2. It is recognized that some of the provisions, for example, those relating to mosquito control, abatement of overcrowding and venereal diseases, are of a somewhat advanced character and these provisions will be extended from time to time to such localities as may be ripe for them.

3. The salient features of the Bill are as follows:—

(1) The constitution of a public Health Board for the Province;

(2) The statutory recognition of the Director of Public Health and the vesting of adequate powers in him for the effective discharge of his duties;

(3) The taking of power—(a) to compel the employment of Health Officers by important local authorities; and (b) to fix the scales and the con-

ditions of service of the public health establishments employed by local authorities;

(4) Provision that local authorities should earmark a definite percentage of their income for public health expenditure;

(5) The imposition of an obligation on local authorities at the discretion of the Government to provide a sufficient supply of drinking-water; and provision for the compulsory levy of a water-tax for financing water-supply schemes;

(6) Effective provisions for securing proper drainage, and a sufficient number of public latrines, etc.;

(7) The prevention and abatement of nuisances;

(8) Adequate measures for the prevention and eradication of infectious diseases;

(9) The prevention, treatment and control of venereal diseases;

(10) Maternity and child-welfare measures;

(11) Mosquito control;

(12) The reservation of areas for residential purposes, control over insanitary buildings and the abatement of overcrowding;

(13) Registration of lodging houses;

(14) Food control; and

(15) Special provisions regarding fairs and festivals, including the levy of a pilgrim-tax in the case of water-borne traffic and of tolls on vehicles.

Proceedings of a meeting of the Punjab Medical Council held at Lahore on Saturday the 19th November, 1938

The President announced the expiry of the terms of Dr. Khem Singh Grewal and Dr. Gian Chand Blaggana with effect from the 25th May, 1938, and 8th June, 1938, respectively and the elections of the following members:—

1. Dr. Ram Chand Goulatia with effect from the 11th June, 1938, *vice* Dr. Khem Singh Grewal.

2. Rai Bahadur Dr. Mathra Dass with effect from the 8th June, 1938, *vice* Dr. Gian Chand Blaggana. also the resignation of Dr. Hakim Din and the nomination of Captain M. H. Shah, I.M.S. *vice* Dr. Hakim Din, with effect from the 8th November, 1938.

1. The proceedings of the last meeting held on the 9th April, 1938, were confirmed.

2. Considered the following items arising out of the proceedings of the last meeting:—

(a) *Item No. 4.* (Item No. 16 (i) of the agenda of the meeting held on the 13th November, 1937, reproduced below:—

Resolution passed by the Punjab Provincial Conference of Indian Medical Association held on the 12th October, 1937:—

THE CONFERENCE URGES THE GOVERNMENT TO ALLOW THE NATIONALS OF THOSE COUNTRIES ONLY TO PRACTISE IN INDIA WHICH HAVE RECIPROCITY TO ALLOW NATIONALS HOLDING INDIAN MEDICAL DEGREES TO PRACTISE IN THEIR COUNTRY.)

Decided that the Council bring to the notice of the Indian Medical Association that the matter in question is already under the consideration of the Government and their reply is still awaited.

(b) *Item No. 5 (a).* Sub-Committee appointed to revise the syllabus of the L.S.M.F. Examinations.

Decided that as the detailed syllabus is a matter for the Punjab State Medical Faculty and does not fall within the scope of the Punjab Medical Council, the Council need not take any action.

(c) *Item No. 5 (c).* Local opinion re-prosecutions under Section 23 of the Punjab Medical Registration Act.

Decided (a) on legal advice to prosecute a medical practitioner under Section 23 of Act II of 1916. (b) that Government be requested to take steps to remove the word "falsely" from Section 23 of the Act.

(d) *Item No. 6 (i).* Punjab Government letter No. 3184-M.38/22878, dated the 29th June, 1938, re-inspection of Medical Schools by the Punjab Medical Council, was read and recorded.

(e) *Item No. 7 (ii).* Report of the Sub-Committee appointed to revise by-laws framed by the Punjab Medical Council under Section 24 (2) of the Punjab Medical Registration Act, and to consider the financial position of the Punjab Medical Council.

The members of the Sub-Committee explained that they have not been able to meet so far.

Rai Bahadur Dr. Maharaj Krishna Kapur was elected on the Sub-Committee as an additional member.

(f) *Item No. 13.* The present market value of the Government Securities held by the Punjab Medical Council was brought to the notice of the Council by the President and it was decided that no action is called for at present.

(g) *Item No. 21.* Letter No. 6834-A, dated the 10th June, 1938, from the Inspector-General of Police, Punjab, reacceptance of medical certificates issued by private medical practitioners, as read and recorded.

(h) *Item No. 22.* Letter No. 1733-L.F., dated the 16th August, 1938, from the Chairman, District Board, Sargodha, re-certificates issued by private medical practitioners, was read and recorded.

(i) *Item No. 23.* Punjab Government Notification No. 3099-M-38/24977, dated the 20th July, 1938, amending the Schedule of the Punjab Medical Council, was read and recorded.

(j) *Item No. 1 of the proceedings of a meeting of the Registration Sub-Committee held on the 26th March, 1938.*

Read Punjab Government letter No. 2553-M-38/21924, dated the 20th June, 1938, stating that no action can be taken against practitioners registered in other provinces and who, when practising in the Punjab, style themselves as "Registered medical practitioners."

Decided that letter of Government be recorded and that the Government be addressed regarding the weakness of the position revealed.

(k) *Item No. 28.* By-laws regarding visitation of Examinations.

The Council considered the following suggestion of Government for insertion in draft Rule I:—

"The Committee shall consist of two members who shall be persons who have teaching experience in a recognised medical college or school".

Decided that the Council is in favour of the original draft rule II.

(l) *Item No. 19.* Office Building. The President explained the situation regarding the proposed Office building and the Council authorised the President assisted by two other members to continue further negotiations in the matter.

3. Considered the appointment of a member of the Registration Sub-Committee in place of Dr. Gian Chand Blaggana.

Rai Bahadur Dr. Mathra Dass was elected a member of the Registration Sub-Committee.

4. The appeal of a medical practitioner for the restoration of his name to the Punjab Medical Register was rejected.

5. Court judgments in 3 cases were recorded and it was decided that in one the explanation of the registered

medical practitioner is to be called for and placed before the next meeting of the registration Sub-Committee.

6. Decided that the Visitation Report on the L.S.M.F. Examinations be forwarded to the Punjab State Medical Faculty for the observations of the Examiners.

7. Formal approval to the raising of the price of rules and regulations from four annas to six annas per copy on account of higher rates of printing charges, was accorded.

8. Considered the recommendations of the Registration Sub-Committee held on the 29th October, 1938.

Decided (i) that the name of Dr. S. Konarski be registered;

(ii) that a registered practitioner at Ludhiana be informed that the Council considers that he has been at fault and that he be warned.

Subject to above, the recommendations of the Registration Sub-Committee were approved.

9. Supplementary Estimates for the year 1938 were approved.

10. Budget Estimates for the year 1939 were passed.

11. With regard to audit and inspection Note. Decided that as the transaction was made in good faith responsibility for the loss of interest on the purchase of Post Office Cash Certificates out of the Provident Fund cannot be fixed on any individual.

12. Decided that in view of the Government ruling the proposed inspection of the Ludhiana Medical School for Men, in February, 1939, be dropped.

13. Decided that the question of recognition of the Medical Degrees of Andhra University by the Punjab Medical Council be postponed pending a decision by the Medical Council of India.

14. Resolved that the following be added as paragraph 5 in the application form for registration:—

"When registered I promise to abide by the rules and regulations framed or to be framed from time to time hereafter by the Punjab Medical Council under the Punjab Medical Registration Act, Act II of 1916."

15. Resolved that an amount be charged for incidental expenses in connection with reciprocal registration which should be Rs. 5 as in Bengal, and that such amount be also levied from persons already registered under the British Medical Acts and who seek registration in the Punjab.

16. Resolved that the attention of the Government be drawn to the need for this Council to have powers to inspect any medical teaching institution included in or desirous of being included in the schedules referred to in Section 21 of the Punjab Medical Registration Act and that the attention of Government be drawn to the Bengal Medical Registration Act where the necessary provision exists.

17. Resolved that the functions of the Registration Sub-Committee be defined as follows:—

(a) consideration of applications for registration referred to by the Registrar.

(b) consideration of the cases of registered medical practitioners in which an enquiry is to be held.

(c) consideration of cases of alleged false certificates.

(d) consideration of cases of practitioners resorting to advertisement.

(e) consideration of cases of changes in names.

(f) consideration of cases of removal of names from Register.

(g) to supervise the publication of the Punjab Medical Register.

(h) any other business referred to it by the Council.

18. Considered the following resolution:—

"that the words "if approved by the President" in by-laws 7 and 8 be deleted and that by-laws 8 (a) and 8 (b) be deleted in toto."

Decided that the consideration of this resolution be postponed and the Registrar be asked to make enquiries from other Provincial Medical Councils in India, also from the Medical Council of India, as to what provision exists in their by-laws or rules under which the President may disallow a motion or amendment.

19. Resolved that the President address the Chief Medical Officers and Directors of Public Health of Provinces within the jurisdiction of the Council and also the Railway and Military authorities, as to the frequent occurrences of cases of medical men working under them who are not registered with the Punjab Medical Council, and request their co-operation in preventing this breach of Section 4 (2) of the Act.

20. Considered the following motion:—

"That with a view to effect economy and efficiency all the elections of the Punjab Medical Council be held once in three years."

Decided that the consideration of this resolution be postponed pending the deliberations of a Sub-Committee proposed to be appointed to go into the question of defects in the working of the existing Act.

21. Resolved that a Committee of the Council be appointed to consider and report upon the present defects in carrying out the functions imposed upon the Council in regard to registration, medical education and any other matters with which the Council is concerned. Further resolved that the members of the registration sub-committee be appointed as the members of this Committee.

22. Resolved that in view of the fact that quackery is rampant in this province, a sub-committee be appointed to make recommendations to check it, and that the members of the Registration Sub-Committee should go into this question.

SERVICE NOTES

P. S. M. S. OFFICERS, U. P., TRANSFERRED AND GRANTED LEAVE DURING SEPTEMBER AND OCTOBER, 1938

Dr. Salig Ram I, leave, to Gaura.

" Mahesh Chandra Sharma, Reserve duty, Aligarh, to Ikauna.

" Tula Ram Gupta, Ikauna, to District Jail, Saharanpur.

" A. H. Qureshi, District Jail, Saharanpur, to leave.

" Jagat Narain Mathur, R/D, Cawnpore, to Jail and Police, Unao.

" Govind Prasad, Jail and Police, Unao, to leave.

" C. S. Richards, R/D, Lucknow, to Ujhani.

" Hari Shankar, Ujhani, to Jail and Police, Mainpuri.

" Chheda Lal, Jail and Police, Mainpuri, to leave.

" N. S. Bhatnagar, R/D, Lucknow, to Bilgram, Hardoi.

" Debi Sahai, Bilgram, Hardoi, to leave.

" Ishtiaq Ahmad, Leave, to Tarabganj, Gonda.

" Chunni Lal, Tarabganj, Gonda, to leave.

" Anand Swarup Attrey, R/D, Partabgarh, to R/D, Gonda.

" Abdul Ghafoor, Nawabganj, Bareilly, to Sujauli.

" Shiva Dayal Agnihotri, Sujauli, Bahraich, to Nawabganj.

" Raghunath Dass, leave, to Mandha.

" Sri Datt Gairola, Mandha, Hamirpur, to R/D, Cawnpore.

" Shambhoo Prasad Srivastava, R/D, Rae Bareli, to Jail and Police, Fatehgarh.

" Madan Lal, Jail and Police, Fatehgarh, to leave.

" Pearey Lal Bhargava, leave, to Police Hospital, Etawah.

" Mohd. Zafrul Hasan, Police Hospital, Etawah, to Central Jail, Agra.

" C. P. Misra, Central Jail, Agra, to leave.

" Mohd. Shafi Siddiqui, leave, to Lalganj Dispensary.

" Vishwa Nath Singh, Lalganj Dispensary, Azamgarh, to Bansi.

Dr. K. B. Srivastava, Bansi, Basti, to Jail and Police, Partabgarh.
 „ Anand Swarup Attrey, Jail and Police, Partabgarh, to Reserve Duty, Partabgarh.
 „ Monohar Behari Lal, Anola, to Tilhar.
 „ Ambika Prasad Sinha, Reserve Duty, Dehra Dun, to Sub-charge, Moradabad.
 „ Lall Bahadur, Sub-charge, Moradabad, to leave.
 „ Adwaita Nand Deva, leave, to Reserve Duty, Lucknow.
 „ Triloki Sahai Saxena, Reserve Duty, Fatehgarh, to Central Jail, Fatehgarh.
 „ Syed Tassaduq Hussain, Central Jail, Fatehgarh, to leave.
 „ C. S. Richards, Baghpat, Meerut, 3 weeks (earned leave).
 „ Syed Nazir Hasan Zaidi, Khatema, Naini Tal, 15 days on average pay.
 „ Lall Bahadur, S/C, Moradabad, 2 months on average pay.
 „ Syed Tasaduq Husain, Central Jail, Fatehgarh, 4 months on average pay and $\frac{1}{2}$ average pay.
 „ Kunwar Bahadur Srivastava, Bansi, Basti, 3 weeks on average pay.
 „ Abdul Hai, Safipur, Unao, 4 months on average pay.
 „ Jwala Prasad, Jalalabad, Shahjahanpur, 10 days average pay 10 days ext.
 „ Mohammad Qasim Ali Khaga, Fatehpur, 1 month from 1-11-38 to 30-11-38.
 „ Bhawani Prasad Pandya, Atarra, Banda, 1 month from 16-10-38 to 15-11-38.
 „ Chheda Lal Sharma, Jail and Police, Mainpuri, 4 months from 25-10-38 to 24-2-39.
 „ Abdul Haque Qureshi, District Jail, Saharanpur, 2 months from 11-11-38 to 10-1-39.
 „ Govind Prasad, Jail and Police, Unao, 4 months from 14-10-38 to 13-2-39.
 „ Debi Sahai, Bilgram, Hardoi, (under consideration).
 „ Madan Lal, Jail and Police, Fatehgarh, 6 weeks from 4-10-38 to 14-11-38.

PUNJAB P. S. M. S. OFFICERS TRANSFERRED AND GRANTED LEAVE DURING SEPTEMBER, 1938.

Dr. Gurbaksh Rai, General duty, Civil Hospital, Jullundur, to Dunera Dispensary.
 „ Ghulam Ali Soofi, Dunera Dispensary, to Adhwal Dispensary.
 „ Prem Nath Aggarwal, on expiry of leave, to General duty, Mayo Hospital, Lahore.
 „ Mukhtar Ahmed, General duty, Civil Hospital, Amritsar, to Police and Sub-Jail Hospitals, Gujrat.
 „ Abdul Haq, Ferozepore-Jhirka Dispensary, to General duty, Civil Hospital, Gurgaon.
 „ Muhammad Daood, General duty, Civil Hospital, Mianwali, to Choa Saidan Shah Dispensary.
 „ Tehl Ram, General duty, Civil Hospital, Sargodha, to Sub charge, Civil Hospital, Rawalpindi.
 „ Jai Gopal Bahl, Sub charge, M. D. Hospital, Moga, to Borstal Institution, Lahore.
 „ Harjas Ram, Borstal Institution, Lahore, to Civil Dispensary, Hira Mandi, Lahore.
 „ Umar Hayat Khan, General duty, Civil Hospital, Dera Ghazi Khan to Shahr Sultan Dispensary.
 „ Qudrat Ullah, General duty, Civil Hospital, Jhang, to Canal Dispensary, Waryam.
 „ Sultan Singh, Sambrial Dispensary, to Kahna Nau Dispensary.
 „ Sita Ram Mohan, General duty, Civil Hospital, Sargodha, to Nurpur Dispensary.
 „ Charan Das, Granted extension of leave for 1 month.

Dr. Sardar Ahmed, L. S. M. F. (Pb.), General duty, Civil Hospital, Jullundur, engaged as a temporary Sub Assistant Surgeon.
 „ Abdul Ghani, on return from leave, to Kunjpura Dispensary, Karnal District.
 „ Bhagwan Das Mongia, on expiry of leave, to General duty, Civil Hospital, Lyallpur.
 „ Bal Mokand, on expiry of leave, to General duty, Mayo Hospital, Lahore.
 „ Megh Raj, 1st Class Senior, Kahna Nau Dispensary, Lahore District to Jail and Police Hospitals, Gurdaspur.
 „ Sant Lal Duggal, General duty, Civil Hospital, Ambala, to Police Hospital, Ambala.
 „ Babu Ram Sethi, granted an extension of leave for 1 month on Medical Certificate.
 „ Moti Singh, Shahabad Dispensary, to Malaudh Dispy.
 „ Bhawani Sahai, 1st Class Senior, on return from leave, to Jawalamukhi Dispensary, Kangra District.
 „ Chuni Lal Sharma, L. S. M. F., (Pb.), General duty, Civil Hospital, Amritsar, engaged as a temporary Sub Assistant Surgeon.
 „ Mohd. Razaurrehman Khan, L. S. M. F., (Pb.), General duty, Civil Hospital, Hoshiarpur, engaged as a temporary Sub Assistant Surgeon.
 „ Ali Muhammad, General duty, Civil Hospital, Multan, to Agricultural Reformatory Farms Dispensary, Kussamsar.
 „ Udhani Singh, Agricultural Reformatory, Farms Dispensary, Kussamsar, to Khaira Dispensary.
 „ Suraj Kaul Bakshi L. T. M., (Cal.), on return from leave, to Anaesthetist, Mayo Hospital, Lahore.
 „ Muhammad Ashraf, General duty, Civil Hospital, Gurdaspur, to Kot Naina Dispensary.
 „ Jagir Singh, granted 3 months extension of leave on Medical Certificate.
 „ Baij Nath, General duty, Civil Hospital, Gurdaspur, to Keylang Dispensary.
 „ Jamma Das Mehta, General duty, Civil Hospital, Banga, Services placed at the disposal of the Chief Medical Officer, Delhi Province.
 „ Abdul Haq, General duty, Civil Hospital, Gurgaon, to Mirpur Dispensary.
 „ Barkat Ram Datta, Mirpur Dispensary, to Adampur Dispensary.
 „ Girdhari Lal, 2nd Class Senior, Adampur Dispensary, to Mahilpur Dispensary.
 „ Bashir Ahmed, General duty, Civil Hospital, Montgomery, to Old Central Jail Hospital, Multan.
 „ Harjas Rai Datta, 2nd Class Senior, on expiry of leave, to General duty, Civil Hospital, Gurdaspur.
 „ Pritam Singh, on return from leave, to Sohawa Dispensary.
 „ Wahid Baksh Qureshi, L. S. M. F. (Pb.), General duty, Civil Hospital, Dera Ghazi Khan, Engaged as a temporary Sub Assistant Surgeon.
 „ Nawab Ali Qureshi, L. S. M. F. (Pb.), General duty, Civil Hospital Hoshiarpur, engaged as a temporary Sub Assistant Surgeon.
 „ Muzaffar Haq, L. S. M. F. (Pb.), General duty, Civil Hospital, Sargodha, engaged as a temporary Sub Assistant Surgeon.
 „ Faqir Muhammad Awan, L. S. M. F. (Pb.) General duty, Civil Hospital, Amritsar, engaged as a temporary Sub Assistant Surgeon.
 „ Sohan Lal Mohan, M. B., B. S., General duty, Civil Hospital, Ambala, engaged as a temporary Sub Assistant Surgeon.
 „ Nanak Singh Saigal, 2nd Class Senior, on expiry of leave, to General duty, Mayo Hospital, Lahore.
 „ Harcharan Singh, General duty, Civil Hospital, Lyallpur, to Kotla Dispensary.

Dr. Bal Mokand, General duty, Mayo Hospital, Lahore, to General duty, Civil Dispensary, Lahore.
 „ Muhammad Sultan Khan, Central Jail, Lahore, to Badli Dispensary.
 „ Muhammad Zakaria Khan, General duty, Civil Hospital, Karnal, to Hassanpur Dispensary.
 „ Fakhrud Din, General duty, Civil Dispensary, Lahore, to Central Jail, Lahore.

LIST SHOWING CHANGES AMONG MEN SUB ASSISTANT SURGEONS IN THE PUNJAB DURING THE MONTH OF OCTOBER, 1938

Dr. Abdul Hamid, granted extension of leave for 1 month.
 „ Hari Kishna Nangia, on expiry of leave, to General duty, Civil Hospital, Multan.
 „ Shadi Ram 2nd Class Senior, granted extension of leave for 2 months.
 „ Bashir Ahmad, General duty, Civil Hospital, Montgomery, to Old Central Jail, Multan.
 „ Nanak Chand Lakhnawal, on return from leave, to Jail and Police Hospitals, Sialkot.
 „ Kalyan Singh Makhania, D. T. M. (Cal.), on return from leave, to General duty, Mayo Hospital, Lahore.
 „ Udho Das, 2nd Class Senior, on return from leave, to Sub-charge, Civil Hospital, Rawalpindi.
 „ Faqir Chand, on expiry of leave, to General duty, Civil Hospital, Hoshiarpur.
 „ Rashid Ahmad Khan, L. S. M. F. (Pb.) General duty, Civil Dispensary, Lahore, engaged as a temporary Sub Assistant Surgeon.
 „ Dhian Singh Kung, Hassanpur, Dispensary to Kalanaur Dispensary.
 „ Gobind Ram, Kalanaur Dispensary to Police and Sub Jail Hospitals, Muzaffargarh.
 „ Imdad Ali, Police and Sub Jail Hospitals, Muzaffargarh, to General duty, Civil Hospital, Multan.
 „ Muhammad Nisar Jaffar, L. S. M. F. (Pb.), General duty, Civil Hospital, Muzaffargarh, engaged as a temporary Sub Assistant Surgeon.
 „ Panna Lal Khanna, General duty, Civil Hospital, Amritsar, to Attari Dispensary.
 „ Ali Hassan, Attari Dispensary, to Demonstrator in Anatomy, Medical School, Amritsar.
 „ Muhammad Abdur Rahman, M. B., B. S., Demonstrator in Anatomy, Medical School, Amritsar, granted combined leave for 6 months and 8 days.
 „ Fakhrud Din Khalid, Central Jail, Lahore, to General duty, Civil Dispensary, Lahore.
 „ Fakhrud Din Khalid, General duty, Civil Dispensary, Lahore, to General duty, Civil Hospital, Hissar.
 „ Ram Bhaj Madan, on expiry of leave, to Junior House Surgeon, Indian Private and Family Wards, Mayo Hospital, Lahore.
 R. S. Dr. Hans Raj Bhamli, Junior House Surgeon, Indian Private and Family Wards, Mayo Hospital, Lahore, services placed at the disposal of the Chief Medical Officer, Delhi Province.
 Dr. Kishore Chand, M. S. M. F. (Pb.), granted leave for 1 month on reversion from the Delhi Province.
 „ Tara Chand, on expiry of leave, to Kot Naina Dispensary, Gurdaspur District.
 „ Jagan Nath Khorana, Sukesar Hill Dispensary, Shahpur District, to General duty, Civil Hospital, Sargodha.
 „ Nur Ahmad, on return from leave, to Guhla Dispensary, Karnal District.
 „ Sardar Ahmad, General duty, Civil Hospital, Jullundur, to Central Jail, Montgomery.

Dr. Kartar Singh Dhillon, General duty, Civil Hospital, Ludhiana, to Sidhwan Bet Dispensary, Ludhiana District, Vice Dr. Hari Singh who retired from the service.
 „ Sher Muhammad Akhtar, L. S. M. F. (Pb.), General duty, Civil Hospital, Lyallpur, engaged as a temporary Sub Assistant Surgeon.
 „ Tehl Ram, Sub-charge, Civil Hospital, Rawalpindi, to General duty, Civil Hospital, Palampur.
 „ Muhammad Zaka Ullah, Sunny Bank and Jhicka Galli Dispensaries, Murree, to General duty, Civil Hospital, Rawalpindi.
 „ Muhammad Jalal-ud-Din, L. T. M. (Cal.), on reversion from Delhi Province, to General duty, Civil Hospital, Jullundur.
 „ Babu Ram Sethi, on expiry of leave, to General duty, Civil Hospital, Ambala.
 „ Rup Narain Narula, temporary, General duty, Civil Dispensary, Lahore, to General duty, Civil Hospital, Banga.
 „ Wahid Baksh Qureshi, temporary, General duty, Civil Hospital, Dera Ghazi Khan, to Jail and Police Hospitals, Dera Ghazi Khan.

ASSOCIATION NOTES

[Proceedings of meetings refer only to the All-India Medical Licentiates' Association unless otherwise stated.]

Anti-Indian Medical Council Act Day 20th September, 1938

We have received further reports of proceedings of protest meetings held in the various parts of the country. The places where such meetings were held are as follows:—Bhandara, Dibrugarh, Poona, Dipalpur, Nainital, Chittagong, Nadia, Nagpur, Jessore, Gauhati, Delhi, Dacca, Tinsukia and Mussoorie.

The purport of the resolutions passed was a vehement protest against the exclusion of Medical Licentiates from within the purview of the Indian Medical Council Act.

Properties of the Association, 1938

General Secretary's Office: Nothing more is purchased during this year. Hence same as mentioned on page 44, *Indian Medical Journal*, January 1938.

Managing Editor's Office: Everything ditto as appeared on page 44, *I. M. J.*, January 1938 plus the following purchased this year: (1) Double door wooden almirah 1—6' x 3' x 1½' plain top (24-6-1938)—Rs. 30/. (2) Five library books more. Review copies.

Finance Secretary's Office: Nothing more than what is mentioned on page 45, *I. M. J.* January 1938 issue.

Treasurer's Office: 1 punching machine, 6 trunks—3 broken, 3 locks, 1 typewriter, 1 brass seal, 21 rubber stamps, 1 pen rack, 2 iron paper weights, 1 wooden ruler (broken), 1 Bod. Kin. (pricker), 1 iron stamp stand, 1 dictionary, 1 letter balance (unserviceable), 1 table lamp, 1 table cloth (flannel), 1 table cloth (cotton), 1 sponge pot (broken), 1 pin cushion, 1 waste paper basket annas seven, 1 glass inkpot annas ten, 1 blotter annas four, 2 chairs Rs. 13/, 1 cupboard (almirah) Rs. 18/, 2 tables Rs. 27/, 1 rack Rs. 10/, 1 teapoy Rs. 2/4/, 1 cash box Rs. 1/6/.

Tinsukia Branch: 2 rubber stamps Rs. 2/2/, 2 box files Rs. 2/8/.

Dibrugarh Branch: 1 office almirah (gift to the branch), 1 office basket, 1 blotter (tin), 2 office rubber stamps, 1 stamp pad.

Standing Committee Meeting

Held on 1st October 1938 at the residence of R. B. Dr. Hari Ram, President of the Association. 18 members were present. Rai Bahadur Dr. Hari Ram, the President, presided.

A condolence resolution on the sad demise of Dr. A. N. Khosla, our late Treasurer, was moved from the chair and passed unanimously.

The General Secretary then narrated the reasons that led to the calling of the Standing Committee meeting. The Government of India, early in April, decided to hold a conference of representatives from the provinces, medical councils and examining bodies to decide on the future medical school education of India. The Association then immediately represented to the Government to invite their representatives and on the personal intervention of our worthy President R. B. Dr. Hari Ram, the Director-General, I. M. Service, accepted to invite two of our representatives to the said conference. As the Gauhati conference was postponed from October to December at the express request of the Assam and Punjab friends and as the mandate of the Association had to be given to their representatives attending the Government conference in November, it was decided to call the S. C. meeting to give the required lead in the matter.

The following resolutions were passed :

1. This meeting of the S. C. of the A. I. M. L. Association places on record its great sorrow at the sad and untimely demise of Dr. A. N. Khosla, our late Treasurer, and prays God Almighty that his soul may rest in peace. It further authorises the President to convey to his family its heartfelt and sincere condolences.

2. Resolved that taking into consideration the emergency that has arisen to give a definite opinion of the A. I. M. L. Association on the point of a uniform standard of medical education in India, before the Government of India Conference to be held in Delhi in the month of November 1938, it is necessary to decide this vital point by the Standing Committee held at Delhi on 1-10-1938 and this house is convinced that a uniform minimum standard of medical education as recognised by the Indian Medical Council should be introduced by the Government of India in all the medical schools and that further if our representatives are faced with the situation with either for an acceptance of the University degree course or the continuance of the present dual system of education with necessary improvements our representatives should support the University degree course and that the mandate decided by this house is in the strict conformation and within the limits of the resolution No. 5 of the Agra Conference.

3. Resolved that R. B. Dr. Hari Ram and Dr. A. D. Mukherjee be elected as representatives of the Association to attend the Government conference on medical school education to be held during November next.

4. Resolved that in case of a future war the Association offers the services of its members to His Majesty the King-Emperor and further resolved that a deputation headed by the President should wait on the Commander-in-chief to the Government of India and other officials concerned to request them to permit the military sub-assistant surgeons, who were once allowed to be members of the Association, to become members of the Association.

5. Resolved that the expenses of the S. C. meeting and the travelling allowances of the members who attended the same be sanctioned.

6. Resolved that the contingent bills of the Mymensingh and the L. P. H. Branches for the period of 1-1-38 to 31-7-38 and December 1936 to end of December 1937 amounting to Rs. 2-6-3 and Rs. 20-6-3 respectively be sanctioned and passed.

7. Resolved that the Managing Editor, *Indian Medical Journal*, be authorised to purchase an Adrema addressing machine costing about Rs. 800/- only for the use of his office.

8. Resolved that the new T. A. bill for the Association as suggested by the Treasurer and recommended by the Finance Secretary be approved and adopted.

9. Resolved that Dr. S. L. Sharma be requested to refer his complaint to the U. P. Standing Committee for its decision.

10. Read letter No. 1937 dated 24-9-38 from Dr. K. B. L. Varma an appeal against the Finance Committee resolution No. 192 retrenching an amount of Rs. 69-2-6 from his bills from May 1937 to April 1938 and resolved that the said amount of Rs. 69-2-6 retrenched by the Finance Committee be restored and paid to Dr. K. B. L. Verma.

11. The decision of the President in the C. P. election dispute was read and approved by the Committee meeting.

With a hearty vote of thanks to the chair, the meeting ended on 1-10-1938.

Resolution to circular No. 24 dated 8th September 1938. Replies received 21. For 19. Against 2.

"Resolved that the Standing Committee meeting of the All-India Medical Licentiates' Association be held at Delhi, on the 1st and 2nd October 1938."

Resolution to circular No. 25 dated 8th September 1938. Replies received 19. All for.

"Resolved that the contingent bills of the Mymensingh and Agra Branches for the period of January to December 1937 and 1st November 1937 to 28th February 1938 amounting to Rs. 2-7-0 and Rs. 6-1-6 respectively be sanctioned, and passed."

Bhandara (C. P.) : Meeting held on 19-9-1938.

(1) That this Branch deprecates the *modus operandi* of the election of a representative on the C. P. Medical Examination Board, Nagpur, as at present contemplated by the President and involving the re-election of an elected representative of a Branch by the Provincial Standing Committee.

In the opinion of this Branch meeting, applications should have been invited by the Provincial Committee (through the columns of a newspaper giving sufficient time) and these names be circulated to the different branches for nominations by the Branch. The Provincial Standing Committee should make scrutiny for selection of the competent candidates and then, these names of the selected candidates be sent to the different branches for final election. The candidates securing the highest number of votes will be eligible as a representative on the Central Provinces Medical Examination Board.

(2) The meeting further resolved that the period given by the President of the Provincial Standing Committee for submitting the report regarding the representative (before the 25th September 1938) on the C. P. Medical Examination Board for 1939 is too short.

(3) That this meeting shall finally elect the representative for the C. P. Medical Examination Board, Nagpur after the above resolutions are finally considered by the Provincial Committee Meeting.

20-9-38.—Resolved that the above Branch observes today as the All-India Anti-Indian Medical Council Act Day as a mark of protest against the non-inclusion of the medical licentiates of India by the Indian Medical Council on a common register.

30-9-38.—Resolved that the following office-bearers for 1938-39 be elected for the above Branch: Dr. G. R. Wyawahare—President, Ramlal—Vice-President, G. V. Dawoo—Secretary. Standing Committee members: Drs. G. V. Dawoo, G. R. Wyawahare and Ramlal.

4-10-38.—(1) Unanimously resolved that Dr. G. V. Dawoo be elected as a delegate to the All India Annual Conference of our Association to be held at Gauhati during the ensuing Xmas holidays. Dr. Ramlal be elected as a substitute in case Dr. Dawoo is unable to attend.

(2) The application of Dr. P. H. Sant of Bilaspur was placed before this meeting for the C. P. Medical Examination Board membership and it was resolved that no consideration could be given to it as it did not approve of the present *modus operandi* of the election to the C. P. Medical Examination Board before the new (1939) elections of the office-bearers from the different branches in this province are completed. (Vide rule No. 70 of the Rules and Regulations of the A. I. M. L. Association).

(3) Resolved that the resolutions of this Branch of 19-9-38 regarding the *modus operandi* of the election of a representative to the C. P. Medical Examination Board be circulated amongst all the branches in the province for their immediate and earnest consideration.

(4) Resolved that the present election of a representative on the C. P. Medical Examination Board be suspended due to the faulty method and that this Branch earnestly requests the President and the members of the C. P. Medical Examination Board to kindly consider the representative method in the light of the resolution passed by the above Branch.

(5) Resolved that the President of the Provincial Standing Committee will immediately take the resolution of this Branch of the 19th September 1938 into consideration in the meeting after due notice to the members thereof.

2-11-38.—Unanimously resolved that the above Branch strongly protests against the attitude of Dr. K. P. Sengupta, the C. P. Provincial President of the Association in characterising the tone of the resolution of the above Branch of 19-9-38 as unnecessarily "Rude"; and also against the irregularities and high-handedness committed by him during the election of Dr. P. H. Sant as a representative on the C. P. Medical Examination Board. This Branch is not at all satisfied with the evasive replies given by him to this Branch which be quite inconsistent.

Nagpur (C. P.) : Meeting held on 20-9-38.

Resolved that Drs. K. P. Sengupta and C. M. Jamadar are elected as delegates for the Gauhati Conference.

Resolved that Drs. S. C. Mukherjee and Upasene be elected as delegates in case Drs. K. P. Sengupta and Jamadar are unable to attend.

25-9-38.—Dr. K. P. Sengupta proposed Dr. Dawoo but nobody seconded him.

Dr. Sant was proposed as a representative in the C. P. Medical Examination Board by Dr. I. B. Basu and seconded by Dr. Dalve and supported by Dr. S. C. Mukherjee and passed unanimously.

9-10-38.—Dr. K. P. Sengupta was proposed for the chair. The annual general body meeting was held and the office-bearers of the above Branch were elected and other transactions were done.

Office-bearers for 1939 : Drs. S. D. Deshmukh—President, D. V. Pradhan—Vice-President, S. C. Mukherjee—Hony. Secretary and Treasurer, Baiharat—Joint Secretary. Managing Committee: Drs. Dongre, C. M. Jamadar and Kulkarni.

It was resolved that Drs. Dalve and Thergaonker be elected as members of the Provincial Standing Committee.

This meeting confirmed the resolution passed electing Drs. K. P. Sengupta and C. M. Jamadar for the Assam annual conference and in case of their inability Drs. S. C. Mukherjee and Upasene are elected.

2-11-38.—This Branch approves the resolution No. 2 of the Standing Committee meeting of the A. I. M. L. A., held on 1-10-1938, regarding medical education.

Dibrugarh (Assam) : Meeting held on 7-8-1938.

The minutes of the last meeting were read and confirmed. Read and filed letter Nos. 593 and 608-12 from the Secretary, Tinsukia Branch.

Resolved that the Civil Surgeon, Lakhimpur, the Chairman, Dibrugarh L.B. and the Secretary, Assam Branch, I.T. Association be requested to kindly allow the doctors serving under them to attend the monthly meetings of the Association.

18-9-38.—The annual report of the Branch as presented by the Secretary was discussed and adopted.

Resolved that the copies of the extracts from the annual report conveying thanks to the I.G.C.H. and to the Hon'ble Minister, I/C Medical Department be sent to them.

The following office-bearers were elected for the year 1938-39 : Drs. M. R. Chakravarty—President, P. M. Ganguly—Vice-President, S. P. Nath—Secretary, S. H. Das—Addl. Sec. Committee: Drs. K. L. Ghosh, Md. K. Rahaman, R. M. Ray, M. Barooah, S. C. Chakravarty and

Drs. K. L. Ghosh and M. Barooah are elected as delegates to the All-India conference to be held at Gauhati. If they fail, Drs. S. P. Nath and Md. K. Rahaman will represent this Branch.

Read the appeal of the General Secretary of the Reception Committee and all the members are requested to send their contributions.

Accounts for the months of June to August 1938 were scrutinised and passed. The budget estimate for the year 1938-39 was passed after discussion.

All the members are requested to contribute Re. 1 each annually as Branch subscription.

This Branch respectfully records its emphatic protest against the present policy of the authorities of gradually transferring to the local boards the best dispensaries of the Province which attained their present improved state and popularity due to the systematic and strenuous labour of the S.A.Ss. for years together and who always look upon them as prize posts for the good work done in the remote and outlying stations.

This Branch further views with great concern, that the local boards are providing the medical graduates in such dispensaries and urges upon the Government to reconsider the modifications of this policy and thus give an impetus to the members of the Subordinate Service.

Resolved that the copies of the above resolution be forwarded to the Civil Surgeon, Lakhimpur, Chairman, Dibrugarh L.B., I.G.C.H., Assam, Minister, I/C of the medical department.

Hissar (Punjab) : Meeting held on 25-9-1938.

(1) The minutes of the last meeting were read and confirmed.

(2) Considered letter Nos. 20, 21 and 22 from the General Secretary and letter dated 29-8-1938 from the Provincial Secretary. (a) Report on the working of the Branch approved. (b) Dr. S. L. Rawal elected as delegate to attend the next Gauhati conference and in case of his inability Dr. Kartar Singh should attend. (c) The budget estimate as prepared by the Hon. Secretary was approved.

(3) Read letter No. 2315 of 11th inst. from Dr. Kapoor to the G. Secretary suggesting change of venue of the next conference to Delhi. Resolved that the Branch wholeheartedly approves of the suggestion of Dr. Kapoor and that the venue may be changed, if there is no loss to the Association and if the Gauhati members agree to it.

(4) Read letter No. 8026/8/12 dated 11-7-38 a copy of the proceedings of the Inspector's meeting of the co-operative department held on 1-5-38 on the subject of training of the staff of the other beneficent departments in co-operation. Resolved that the Secretary may invite their representative at the meeting of the Association as desired by them for this purpose in future.

(5) Read letter from the Provincial Secretary to the members of the executive committee on the question of future medical education and how many members from the district shall attend the next annual dinner to be arranged at Lahore in X'mas next. The following doctors gave their willingness to attend the dinner: Drs. Jhanji Ram, S. L. Rawal and Raghunath Rai.

(6) Read letter No. 2337 of 17-9-38 from the P. S. Resolved that the Branch approved of the following names for the deputation to wait on the Hon'ble Health Minister in October next: R. B. Dr. Mathura Das, R. B. Dr. Hari-ram, Drs. Dal Singh, K. C. Wohra and M. L. Kapoor.

(7) Considered the letter No. 10 from the Jt. P. S. and the replies from the Hon. Secretary to the question in the above quoted letter approved. In addition stress should be made at the time of the deputation on: (a) Amalgamation of subordinate and rural medical services, so that many of the grievances of the rural M.Os. can be met, especially, transfer out of the limited sphere of one district, inasmuch as due to local troublesome circumstances arising, an officer cannot remain in service in one district without danger to his life and property and transfer is the only cure in such circumstances. (b) If for any reason the above suggested amalgamation be impracticable all the rural dispensaries should be considered as one unit under the Prov. Government and transfers, etc., should be effected throughout the province.

among the rural service. (c) Of all the D. B. dispensaries rural and urban should be transferred to the control of civil surgeons of the district board so that the rural medical officers may move in larger circle. (d) And in future new recruitment to the subordinate service should be effected from among the rural service, on the already drawing scale.

(8) Postage account bill of the Branch from 18-7-38 to 25-9-38 as checked was passed. Resolved that the bill be forwarded to the G. S. for payment.

(9) Dr. Hirjashal suggested that the *Indian Medical Journal* should be so printed that it should have Association matters quite separate from the reading matter and the Branch Secretary should convey the suggestions to the Editor, *Indian Medical Journal* to see into the matter.*

(10) The following office-bearers were elected for the year 1938-39: Dr. Jhanji Ran—President, Hirjashal—Vice-President, Chaman Lal—Cashier, S. L. Rawal—Secretary, Rajendra Nath—Jt. Secretary, Raghunath Rai—Auditor, Working Committee: Drs. Kartar Singh, Murli Dhar, Ram Lal, and Ganpat Singh.

(11) At 3 p.m. scientific meeting began. Dr. B. D. Taneja presided.

Following papers were read and discussed: (a) Blindness and its cause by Dr. Hardyal. (b) Certain complexities in the medico-legal practice by Dr. Rawal. (c) Corneal tattooing by Dr. Hardyal. Drs. Gopal Singh and Kanwar Mote Singh, Asst. Surgeon, Hissar, read and explained a case of heart block and a case of guinea-worm simulating cold abscess respectively.

The Civil Surgeon invited the suggestions on the Govt. scheme of extension of rural medical aid as to its practical aspect and how it can be made practicable. One section was of opinion that educated villagers should be trained in first aid and elementary diagnosis and treatment of daily ailments by equipping them to treat cases with first aid appliances and fool proof medicines just as is being done in the district of Gurdaspur. Another section was of opinion that subsidised practice in rural areas should be encouraged and that only from among such subsidised practitioners recruitment should be made to the rural and subordinate medical services.

Bombay (suburban): Meeting held on 25-9-1938.

Dr. S. S. Krishnan was unanimously voted to the chair. Dr. U. Shesharao, the Provincial Secretary, delivered the inaugural address. In the course of his speech, he observed that the members living in the northern part of the city who were experiencing considerable difficulty in attending the meetings of the far-off place in Bombay will now onwards find it easy to take part in the meetings and other functions. He concluded after wishing the Branch a long and useful career.

Following are the office-bearers elected unanimously: Drs. S. S. Krishnan—President, N. P. Narayana Iyer—Hony. Secretary and Treasurer. Committee members: Drs. G. T. Kshirasagar, P. G. Smart, L. K. Rao, S. N. Ganti, and N. N. Billimoria.

Lonavla (Bombay): Meeting held on 3-10-1938.

In the above meeting the following office-bearers were elected: Drs. M. G. Soman—President, B. G. Modak—Secretary.

Also Dr. B. G. Modak was elected as a delegate from this Branch to the ensuing annual conference to be held in December at Gauhati.

Mariani (Assam): Meeting held in the premises of Dr. K. Gogoi of Rangarajan T. E. with Dr. M. L. Dasgupta in the chair.

Proceedings of the last meeting were read and confirmed.

Read the letter of the Secretary, Reception Committee, Gauhati session about changes of dates of the conference and appeals for funds; noted and filed; the Secretary has already issued appeal for papers.

Dr. K. Gogoi or in his absence Dr. Nawab Dixit Ahmed has been elected as a delegate to the ensuing conference.

Contingent bill of Rs. 2-13-0 was passed.

* This is now being done with the beginning of this year. Ed. I.M.J.

A discussion on Atebriu, its uses and probable dangers was held.

Tinsukia (Assam): General Body meeting held on 18-9-38.

Minutes of the last meeting were read and confirmed.

This meeting thanks the following M. Os. for becoming patrons of this Branch: Drs. R. A. Barlow, P.M.O., Chabua and K. P. Hare, P.M.O., Hoogrijan.

Read all correspondence in connection with Messrs. Haverro Trading Co., and the members being satisfied with their explanation and assurance decided to close up the matter.

Read the proceedings of the Reception Committee of the 29th A.I.M.L.A. conference (Gauhati) held on 10-9-38 and also G. Secretary's letter No. 5408/38 dated 12-9-38 and filed.

This meeting records its most emphatic protest against the policy of withdrawing the L.M.Ps. from some of the best L. B. dispensaries and appointing medical graduates in their places. Almost all the L. B. dispensaries owe their present popularity and efficiency due to the ungrudging work done by the medical licentiates. These dispensaries had been served loyally by some of the best and experienced men amongst us and if the present policy continue they will be deprived of these prize posts. This meeting therefore requests the authorities to reconsider the whole affair and not to deny us these little privileges.

Drs. S. C. Barooah and D. C. Chakravarty gave some details of the satisfactory result of "Urea-sulphazide" of Union Drug Co., in purpural sepsis, erysipelas and other streptococcal infections.

5-10-38.—Minutes of the last meeting read and confirmed.

Monthly accounts for the month of September 1938 were passed for payment.

1-11-38.—Minutes of the last meeting read and confirmed.

Monthly accounts for October 1938 were passed.

Read G. S. circular No. 30 and discussed. This Branch approves resolution No. 2 of the Standing Committee meeting held on 1-10-38, regarding medical education.

Read P. S. circular No. 5 and it is resolved that as majority of the branches have not yet submitted the names of members for the standing committee, so, this Branch is of opinion that the election of office-bearers for the Provincial Branch be made on the eve of the All India Conference at Gauhati by holding a special meeting of the delegates and nominated members for the Standing Committee of the province.

3-11-38.—Dr. K. C. Dutta, I. M. D. was voted to the chair.

This meeting places on record its great sorrow at the sad demise of Dr. Satkari Ganguli of Bengal, who was a pioneer in the attempt for the uplift of the class and a very old member of the Assn., and prays to God that his soul may rest in peace. Moved from the chair and passed, all members standing.

Proceedings of the last meeting and the proceedings of the Managing Committee meeting held on 1-11-'38 were read and confirmed.

The Secretary read the annual report for the last year.

Resolved that the following office-bearers be elected for 1938-'39: Drs. K. C. Dutta—President, K. Adhikari—Vice-President, G. C. Sil—Vice-President, S. C. Barooah—Secretary, D. C. Chakravarty—Jt. Secretary, R. K. Patoi—Jt. Secretary. Managing Committee: Drs. S. C. Dutta, N. N. Bhaduri, N. B. Kar, S. N. Dutta, A. C. De.

Resolved that the following changes be made regarding election of delegates to the Gauhati conference in the resolution No. 10 of meeting held on 19-6-38:—Delegates: (1) Drs. N. B. Kar, (2) S. C. Barooah and substitutes (1) Drs. K. C. Dutta and (2) K. Adhikari.

Dr. H. C. Das, Dirial T. E. demonstrated a case of "Extensive gangrenous ulcer treated with cod liver oil dressing" only. He drew the attention of the house to the report of Dr. K. P. Hare, which appeared in the *I. M. Gazette* of August 1938 about the excellent result of cod liver oil treatment of such ulcers. In conclusion he recommended

strongly that cod liver oil dressing can safely be used in all extensive ulcers. Other members took part in the discussion.

Gauhati (Assam): Meeting held on 27-9-'38.

Resolved that the following gentlemen be elected as delegates for the ensuing All-India conference to be held in December: Drs. A. K. Sen and J. C. Medhi. In case one of them fails Dr. Md. Ubedulla should attend.

The following resolutions were passed unanimously to be moved in the All-India conference:

(1) That the S. A. Ss. in P. H. Dept. are to be promoted to the rank of Asst. Surgeons, as is being done in Assam Civil Medical department without any special qualifications.

(2) That the S. A. Ss. in P. H. Dept. be granted study leave and sent for L. P. H. and D. P. H. courses to specialise in P. H. subjects.

(3) That in view of the multifarious duties and increased responsibility of the P. H. S. A. Ss., it is urged that a qualified compounder be provided in each P. H. dispensary.

(4) That pucca government quarters be provided in each dispensary with sanitary latrine and potable water both for drinking and domestic purposes.

(5) That the authorities be urged to fully empower the qualified medical practitioners in Assam to check adulterated foodstuff in local market which are admittedly a danger to public health specially in rural areas.

(6) That the S. A. Ss. and Local Board officers in Assam be appointed as medical examiners of the L. B. schools.

(7) That the special pay and allowances granted to the S. A. Ss. in P. H. Dept. are unsatisfactory and insufficient in consideration of the arduous nature of the duty, compensation for loss of private practice and living in unhealthy and out-of-way stations, be raised to Rs. 50/ per mensem.

(8) That the practice of signing bonds during the confirmation of the S. A. Ss. in Assam Medical Service be abolished.

(9) That the retrospective effect of pay and allowance be given to the S. A. Ss. during confirmation as is being done in the case of Asst. Surgeons and also in other Government departments.

(10) That the pharmaceutical companies be requested to send qualified men as their representatives, because the non-medical men whom they send fail to give the satisfactory answers to the scientific discussions and clinical observations about the preparations and specialities of their companies.

(11) That the members of the above Branch send their message of congratulation to Dr. Sribas Chand Das, S. A. S., Malarialogist, Assam Medical Research Society, for attending the International League of Nations Course for higher studies in malariology at Singapore.

27-10-1938.—Resolved and passed solemnly, all members standing: That the members of the above Branch record their profound sense of loss at the death of Dr. Satkari Ganguli, I. M. P. of Bengal, who was a distinguished practitioner, worker and prominent member of the Association. That the G. Secretary be requested to arrange for commemorating the name of late Dr. S. Ganguli in a befitting manner.

That a copy of the letter dated the 24th October '38 from Messrs. Haverro Trading Co. Ltd., Calcutta, be sent to the Provincial Secretary, who will, on behalf of the province of Assam, inform the Managing Director, Haverro Trading Co. Ltd., to send "Bayer Bulletin" in English and not in Bengali because more than 80% of the licentiate doctors in Assam know Assamese, their mother tongue, better than Bengali.

30-10-'38:—Resolved that an amendment to rule No. 65 (d) be effected as follows: "That the Secretary of every Branch should be ex-officio member of the Standing Committee."

Resolved that the circular of the Provincial Secretary be read and the following office-bearers of the Province be provisionally suggested for 1939: Drs. B. B. Sengupta—President, S. N. Dutta—Vice-President, S. P. Nath—Secretary, K. L. Ghose, Assistant Secretary, K. C. Dutta—Auditor.

Resolved that with reference to the urgent circular No. 30 from G. S., Bombay, the resolution No. 2 was passed and

carried with the following additions and sent to the D. G., I. M. S., New Delhi: "So that there may not be any bar in the way of inclusion of the L. M. Ps. in the purview of the Indian Medical Council Act."

Reception Committee, 29th A. J. M. L. A. Conference, Gauhati. Meeting held on 15-10-'38.

Resolved that the following gentlemen be elected as delegates from the Reception Committee to the A. I. M. Conference at Gauhati: Drs. R. M. Kar, Sarat Chandra Chakravarty, Surendra Nath Dutta, G. S. Das failing Dr. Mohd. Khalilur Rohman.

That steps be taken to have the Assam Medical Act of 1936 amended, and the Council should be constituted by election only and to introduce joint electorate system.

That only one standard of medical education should be advocated in India.

That boycott movement should be immediately started against the life insurance companies which do not include the medical licentiates as their medical examiners.

That the authorities be urged to keep up one teacher and two demonstrators for each subject in the teaching staff of the Berry White Medical School, Dibrugarh, Assam.

That the registrar of all the Provincial Medical Councils should be a medical licentiate.

That a member from the Assam Medical Service (Junior) be appointed as Deputy Supdt. of the Berry White Medical School, Dibrugarh, Assam.

Resolved that the name of the Association be changed to "All-India Medical Practitioners' Association" just to give a deathblow to the caste system in the medical profession.

8-11-1938. - Read Chairman's (Dr. L. K. Barooah) address and scrutinised.

Resolved that accounts submitted by the G. Secretary of the Committee be passed from 16-10-'38 to 8-11-'38.

Resolved that the loud speaker installation be arranged if funds permit.

Resolved that only certificates of appreciation should be issued to the exhibitors of the scientific and general exhibition, and medals and certificates for health exhibition be issued if funds permit.

Resolved that 500 copies of each of the health number of *Amrita Bazar Patrika* and *Assamiya* be purchased for selling in the publicity branch.

Resolved that the rates of the exhibition be fixed as annas two and anna one for adults and children respectively.

Resolved that the visitors to the conference will have to pay half the actual cost.

Nadia (Bengal): Meeting held on 9-10-'38.

The proceedings of the last meeting were read and confirmed.

Resolved that the T. A. of Dr. K. R. Ray, who in anticipation of sanction attended the provincial meeting held in Calcutta on 24-9-'38, be sanctioned.

Dr. K. R. Ray who attended the Delhi standing Committee meeting narrated the affairs in full which was much appreciated by the members present.

The monthly accounts for September 1938 submitted by the Secretary were examined and passed.

Scientific discussions on Intestinal Obstruction and Peritonitis were made by the members.

Delhi: Meeting held on 28-9-'38.

The annual report was read and passed for putting before the general meeting.

Annual Report: (1st October 1937 to 30th September 1938).

This Branch held in all 17 meetings during the year including the joint meeting with Indian Medical Association to observe the Anti-Indian Medical Council Act Day, and 7 meetings were managing committee meetings and 9 were general meetings. All the meeting were fairly well attended.

Scientific papers on the following subjects were read in the general meetings: Sulphanilamide and its uses and Volkman's Ischaemic contracture by Dr. Khanchand

Wohra; Cholera by Dr. Qadir Bux; Gonorrhoeae by Dr. S. D. Vaid.

This Branch also invited the Punjab Prov. Conference which has held in Delhi on 30th April and 1st May 1938 under the presidentship of Lt. Col. R. H. Candy, I. M. S., Chief Medical Officer, Delhi. Complete report of the Conference has already been published in the *Indian Medical Journal*.

Membership has increased by 8 during the year. Members on 30-9-'37 were 27 and on 30-9-'38 were 35. R. B. Dr. Hari Ram was President during the whole of the year under review with Dr. K. C. Wohra as Secretary.

11-10-1938: - In the absence of R. B. Dr. Hari Ram, Dr. S. R. Singh was in chair.

Minutes of the last three meetings were read and confirmed.

Annual report of the Branch was presented and passed unanimously.

The budget of the Branch was passed as presented by the Secretary.

The Secretaries, Drs. K.C. Wohra and S. Ram Singh, who attended the meeting of the S.C., informed the members about the proceedings and also the resolution, regarding the medical education which was read out to the members. All the members agreed and welcomed it.

Resolved that Drs. S. Ram Singh and Parmanand Khanna be elected as delegates of this Branch to the Gauhati conference. In case any of the above delegates is unable to attend the conference, Dr. Bhaktawar Singh will attend.

Bombay: Managing Committee meeting held on 5-6-38. Minutes of the last meeting were read and confirmed.

Branch account for April and May '38 amounting to in all Rs. 18-13-0 was scrutinised and passed.

Dr. Agarwal's letter was read. It was decided to arrange for a clinical meeting on a Sunday afternoon during his stay in Bombay.

Circulars Nos. 12 and 13 from the General Secretary were directed to be placed before the general body.

It was decided to hold the annual dinner in August and a sub-committee consisting of Drs. Mastakar, Paranjpe and Shesharao was appointed to arrange for the same.

Managing Committee meeting held on 17-7-38. The minutes of the last managing committee meeting were read and confirmed.

Branch account for June 1938 was scrutinised and passed. Branch fund account was also scrutinised and passed.

Offer of Messrs. Martin & Harris to exhibit their medical film to the members of the above Branch was accepted.

The bill for Rs. 10 forwarded by the Hon. Secretary, Medical Association, Bombay North, being the amount payable by the above Branch towards the expenses incurred for submitting the subsequent memoranda to Dr. Gilder, Minister of Health, was passed for payment.

Managing Committee meeting held on 7-8-38. Minutes of the managing committee meeting held on 17-6-38 were read and confirmed.

Branch account for July 1938 amounting in all to Rs. 30-0-6 was scrutinised and passed. Branch fund account was also scrutinised and passed.

A letter from the Secretary, Family Fund, requesting the Branch to send a list of 15 members of the Family Fund who are prepared to take over the charge of the Fund was read and discussed. The Hon. Secretary was then requested to write to all the members of the Family Fund belonging to Bombay presidency enquiring them whether they would accept a membership of the proposed committee if elected.

As there were some suggestions from certain members of the Branch to postpone the annual dinner to Sunday the 11th September 1938, the question was considered and the matter was directed to be placed before the general body with the recommendation that the dinner may be postponed.

Managing Committee meeting held on 21-8-38. Dr. U. B. Narayanrao was unanimously voted to the chair.

The minutes of the managing committee meeting held on 7-8-38 were read and confirmed.

Letter from the Secretary, College of Physicians and Surgeons of Bombay intimating that a candidate possessing the diploma of L.C.P.S. (Bombay) should have held a residential appointment for a period of 6 months in Obstetrics in any of the recognised hospitals before he can be permitted to appear for the D.G.O. diploma examination of the College of Physicians and Surgeons of Bombay was read and discussed and the Hon. Secretary was requested to write to the recognised hospitals in Bombay enquiring whether they can accommodate L.C.P.Ss. going up for D.G.O. in their resident medical staff, and if so how many they can permit per term.

Managing Committee meeting held on 11-9-38. Minutes of the managing committee held on 21-8-38 were read and confirmed.

The Branch account for the month of August '38 amounting to Rs. 10-14-6 was scrutinised and passed. Branch fund account was also scrutinised and passed.

Reading of the annual report was postponed to the next meeting.

Managing Committee meeting held on 16-10-38. Minutes of the last meeting were read and confirmed.

Branch account for the month of September '38 amounting to Rs. 17-2-6 was scrutinised and passed. Branch fund account was also scrutinised and passed.

Annual report for the year ending 30-9-38 prepared by the Hon. Secretary was read, approved and directed to be placed before the general body for adoption.

Account for the third annual dinner was scrutinised and passed. The surplus balance of the subscriptions collected for the dinner Rs. 4-6-0 was directed to be paid to the Branch fund.

The circular from the Prov. Secretary asking the Branch to elect 2 representatives to the Prov. Standing Committee was read and referred to the general body for action.

The Bombay Government's Draft Bill regarding supervision of nursing homes was also directed to be placed before the general body.

General Body Meeting held on 5-6-38. Minutes of the last meeting were read and confirmed.

Dr. D. V. Venkappa was unanimously nominated as a candidate for presidentship of the Association for the ensuing year.

Reading of the paper on anemias was postponed due to the unavoidable absence of Dr. K. M. Shah.

General Body meeting held on 17-7-38. Minutes of the last meeting were read and confirmed.

Re. General Secretary's circular for final election of President of the Association for the ensuing year, the Branch unanimously elected Dr. D. V. Venkappa of Madras for the post.

Dr. K. M. Shah, L.C.P.S. (Bom.), D.T.M. (Cal.), read an interesting paper on "Anemias" and exhibited some interesting charts on the subject prepared by him specially for the purpose.

General Body meeting held on 24-7-38. The minutes of the general body meeting held on 17-7-38 were read and confirmed.

General Body Meeting held on 7-8-38. Minutes of the meeting held on 24-7-38 were read and confirmed.

Regarding the questionnaire, issued by the Bombay Medical Union, it was the general opinion of the Branch that its consideration must be postponed to some future date.

It was unanimously agreed that the annual dinner of the Branch must be postponed to Sunday the 11th September 1938 as per reconsideration of the managing committee.

General Body meeting held on 11-9-38. Minutes of the general body meeting held on 7-8-38.

Reading of the annual report, considering the resolutions to be moved at the conference, election of delegates to the

conference, and the election of office-bearers for the ensuing year were all postponed to the next meeting.

Regarding Branch fund the following resolution moved by the chair was passed unanimously: "This General Body meeting of the above Branch unanimously requests the members of the Branch to contribute a minimum of Rs. 2 per year to the Branch fund for meeting the incidental expenses at the meeting and further authorises the Hon. Secretary to make necessary arrangements for collecting this contribution."

Annual General Body Meeting held on 16-10-38. Minutes of the last meeting were read and confirmed.

The annual report for the year ending 30-9-38 was read and adopted.

The following resolutions moved by the chair and passed unanimously were directed to be moved at the ensuing annual conference of the Association at Gauhati:—

(1) Resolved that the Govt. of Bombay be requested to take early steps (a) to so amend the Bombay Medical Council Act as to make it thoroughly democratic and elected body under a common franchise of all the registered practitioners registered under the Act, (b) to move the Central Govt. to so amend the Indian Medical Council Act as to include amongst other things a more suitable arrangement for reciprocity and the inclusion of medical licentiates in its purview and (c) to abolish the medical schools and the L.C.P.S. course of medical education.

(2) Resolved that the Bombay Medical Council be requested to arrange the names of the medical practitioners registered under the Bombay Medical Act in one common alphabetical list.

(3) Resolved that a permanent secretariat of the Association be early established.

(4) Resolved that fresh negotiations be opened with the Indian Medical Association with a view to have their future conferences at one and the same place during the same week every year in order to afford opportunities for closer co-operations in all questions affecting the medical profession in general.

(5) Resolved that the Indian Medical Council, Provincial Medical Councils and the executive committees of the said councils be urged to throw open their meetings to the registered medical practitioners and the medical press representatives excepting during deliberations on penal cases.

(6) Resolved that the Family Fund authorities be asked to immediately transfer the Fund from Indore to Bombay.

(7) Resolved that all facilities be given to aspiring medical licentiates to appear for higher medical examinations in India.

Drs. G.G. Wadhvani, U.A. Rao, T.S. Daruwalla and Miss R. K. Mantri were elected as delegates of this Branch to the Gauhati conference. Drs. M.V. Hegde, A.D. Patel, M.E. Meherji and M.M. Shirali were elected as substitutes.

Drs. N.R. Karandikar and U.S. Rao were elected to represent this Branch in the Bombay Provincial Standing Committee.

Bombay Government's draft bill regarding supervision of nursing homes was read and discussed. It was then referred back to the managing committee for consideration and placing its opinion at the next general body meeting.

Office-bearers for the next year: Drs. N.R. Karandikar President, G. G. Wadhvani—Vice-President, U. Shesha Rao—Hon. Secretary and Treasurer. Members of the Managing Committee: Drs. T.S. Daruwalla, U.A. Rao, B.Y. Paranjpe, A.D. Mastakar, S.S. Kulkarni, K.M. Shah.

Dr. K. M. Shah spoke on "Anemias" and exhibited charts prepared by him.

The above Branch approves the resolution No. 2 of the Standing Committee meeting held on 1-10-38, regarding medical education.

Nasik (Bombay): The above Branch which came into existence in 1933, lapsed into inactivity till October 1937, when it was reorganised by the Provincial Secretary. A General Body meeting was called and Drs. Chitke and Joshi were appointed as President and Secretary respectively

for the current year. We held, in all, six meetings out of which four were fairly represented and two had to be adjourned for want of quorum. From time to time we passed different resolutions and sent them to their respective authorities concerned, most important of which were the following:

(1) Suggesting amendment to the Bombay Medical Act.

(2) Congratulating Dr. Rajan for abolishing the medical schools and stopping further recruitment to this class.

(3) Considered whether the time is ripe to amalgamate ourselves in the I.M.A., and it was of opinion that I. M. A. will not be able to champion our cause as much as our Association does.

(4) A petition akin to the monster petition sent to the Minister of Health by the Bombay Branch was sent to the Minister with signatures of the whole Nasik medical profession, condemning the extension of the L.C.P.S. course to 4½ years and again making a distinction between a licentiate and a graduate by only a small period of six months. We suggested abolition of the course as a remedy to the same.

(5) Considered whether we can call a second session of the provincial conference here, but it was found to be beyond our financial capacity to do so.

(6) One meeting was convened by us and held in collaboration with Nasik Medical Union to protest against the Indian Medical Council Act.

The Secretary was glad to note that since the reorganisation of this Branch we could increase the membership of the A.I.M.L.A., from 6 to 13. We collected the local subscription the amount being Rs. 19-4-0. Expenses: Stationery—8 annas, Typing charges—14 annas, Correspondence (stamps, etc.)—Rs. 3-9-0, Tea—12 annas, Wages of a peon to distribute our circulars—Rs. 10. Total Rs. 15-11-0. Balance of Rs. 3-9-0 on hand on 1-10-38.

30-10-38. The above Branch requests the Director-General of the Indian Medical Services to consider sympathetically the resolution No. 2 of the Standing Committee meeting held at Delhi on 1-10-38.

Madras: Managing Committee meeting held on 16-10-38.

The minutes of the previous meeting held on 28-9-38 were read and confirmed.

The accounts for the month of September 1938 aggregating to a sum of Rs. 10-13-6 were gone through and passed with instructions to recover half the printing charges from the Indian Medical Association, in connection with the Anti-Indian Medical Council Act Day.

In connection with the annual dinner of the medical licentiates the following members were proposed to be the organisers with powers to co-opt other members: Drs. G. Subbarayadu, G.J.N. Nayudu, U.D.G. Rao, M.S. Rao, and K. Rama Rao.

In the matter of election of delegates to the ensuing annual conference at Gauhati, Dr. K. Rama Rao was elected as the third delegate to represent Madras and this additional number is in view of rule No. 68 which permits a branch to elect three delegates when the strength of its membership is between 50 and 75. Drs. M. V. Suryaprakasa Rao and U.D. Gopal Rao were elected as substitutes. Dr. K.B. Bhujanga Rao's name as the delegate was deleted from the branch representatives as he would attend the conference in his capacity as Provincial Secretary, Madras.

Dr. A. Viswanathan, Editor, *Indian Medical Journal*, informed the house that the Standing Committee of the Association which met recently at Delhi to discuss the policy on the future of medical school education was for the establishment of a uniform minimum standard of qualification throughout India and for the adoption of the University model; and that this view would be placed by the representatives of the Association before the meeting of the medical education conference at Delhi.

The Branch approves the resolution No. 2 of the Standing Committee meeting held at Delhi on 1-10-38, regarding medical education.

Resolved that Dr. G. Subbarayadu, delegate from above Branch shall be empowered to move the necessary resolutions

tions regarding the Family Fund of the Association at the next Conference.

It was also resolved that a congratulatory message be sent to Dr. A. Sreenivasan, L.M.P., M.R.C.P., for his being appointed as the Honorary Physician, Government General Hospital, Madras.

24-10-38. - General Body Meeting.

A lengthy discussion took place on the proposed G.O. to restrict private practice to servicemen. Almost all the members took part in the discussion and the following resolution was passed unanimously and a committee was formed to draft a memorandum on the subject to be submitted to the Minister of Public Health, Madras.

This meeting of the above Branch views with concern, and disapproves the intentions of the Government of Madras in, their order prohibiting private practice of servicemen as the Association feels that though the prohibition may be desirable in the case of higher paid officials, it is a great hardship and injustice done to the underpaid members of the Subordinate Medical Service.

The meeting terminated with a vote of thanks to the Chairman, Dr. K.B. Bhujanga Rao, and the authorities of Gana Mandir for the permission given to use the hall for the occasion.

Travancore (Madras): Annual Report.

On the 5th May 1938 the medical licentiates in Trivandrum convened a meeting under the presidency of Dr. D.V. Venkappa, Provincial Secretary of the A.I.M.L. Association, Madras, when it was resolved to open a Branch of that Association in this State. To carry out the work of this Branch the respective office-bearers were elected consisting of Drs. S. Colappa Pillai—President, D.E. Thomas—Secretary. Drs. K. M. Kesavan, K. Varghese and N. Gopalakrishna Pillai as members of the Committee. The meeting resolved that, after the abolition of the L.M.P. course a suitable diploma such as M.C.P. & S. be instituted by the Government of Madras as per suggestion made by

Dr. D. E. Thomas. It was also resolved to approach the University authorities to give concession to L.M.Ps. who desired to take the M.B.B.S. degree.

On the 30th May 1938 a general body meeting was held under the presidency of Dr. S. Colappa Pillai for electing a President for the Madras Provincial Conference to be held at Vellore. It was resolved to vote for Dr. U. L. Narayanrao and the matter was communicated to the Provincial Secretary.

On the 25th June 1938 an ordinary meeting was held at the residence of Dr. D. E. Thomas in Trivandrum under the chairmanship of Dr. K. M. Kesavan. It was decided to vote for Dr. D. V. Venkappa for the presidency of the annual conference to be held at Gauhati, Assam, and it was resolved to depute Dr. D. E. Thomas to the Conference to represent the Conference. The members were entertained to tea after which there were lively discussions by the members on matters relating to medical licentiates. The meeting terminated with a vote of thanks to the chair.

In pursuance of circular No. 14 of the 1st July 1938 from the General Secretary a business meeting of the Branch was held on 15-7-38 at 5-30 p.m. in the Army Hospital quarters under the presidency of Dr. A. D. Daniel when Dr. D. V. Venkappa was unanimously voted for the presidentship of the annual conference from the list of nominations from different branches received from the General Secretary.

The Branch started only with 6 members on its roll. Through the efforts of the office-bearers its strength has been doubled. The Branch is thankful to the General and Provincial Secretaries for their helpful guidance and advice. We also take the opportunity to thank the Editor of the *Indian Medical Journal* for the regular supply of the journals for the members of this Branch.

In conclusion, this Branch hopes to turn out more useful work in the course of the next year.

CONSOLIDATED ACCOUNTS OF THE ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION

Receipts		AUGUST 1938		Payments	
		Rs. A. P.		Rs. A. P.	
To Subscription (old and new)	...	614 8 0	By Printing I. M. J.	...	591 6 0
„ Advertisement	...	1422 7 8	„ Establishment	...	440 0 0
„ Interest	...	12 9 0	„ Office Rent	...	60 0 0
„ Miscellaneous	...	143 6 0	„ Stationery	...	21 2 0
Total	...	2192 14 8	„ Travelling allowance	...	...
Balance from last month	...	62842 6 0	„ Postage, etc.	...	185 7 0
Grand Total	...	65035 4 8	„ Miscellaneous	...	40 8 0
DETAIL OF BALANCES					
New Loans	...	8200 0 0	„ Other Printing	...	32 8 0
5 Years Postal Cash Certificates	...	6511 14 0	„ Propaganda Work	...	220 8 0
G. P. Notes	...	10891 9 0	„ Expenses for Branches	...	114 1 0
Govt. Bonds 1943	...	5600 0 0	„ Furniture	...	...
6½% Govt. Bonds for Scientific Section	...	10000 0 0	„ Audit fee	...	...
With Dr. S. P. Sen Gupta, Ex-Manager	...	818 12 1	„ Payment to contributors	...	45 0 0
Postal Savings Bank, with President	...	1837 2 2	„ Advertisement commission	...	10 3 0
With Branches	...	472 8 3	„ Loan returned to:	...	...
With Editor:—			G. Secy. & F. Secy.	...	36 2 9
In hand	0 12 6		Rs. 30/- & Rs. 6-2-9		
In Bank	1901 6 9				
In Stamps	133 6 0				
With General Secretary:—		2035 9 3			
In hand	10 3 5				
In Bank	26 3 4				
In Stamps	5 0 0				
With Treasurer:—		41 6 9			
In hand	91 0 3				
In P. N. Bank	2303 8 0				
In P. S. Bank	14435 1 2				
Total	...	63238 6 11	Total	...	1796 13 9
			Balance in hand	...	63238 6 11
			Grand Total	...	65035 4 8

CONSOLIDATED ACCOUNTS OF THE ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION

Receipts		SEPTEMBER 1938		Payments	
		Rs. A. P.		Rs. A. P.	
To Subscription (old and new)	...	751 4 0	By Printing I. M. J.	...	603 2 3
„ Advertisement	...	1548 2 7	„ Establishment	...	390 0 0
„ Interest	...	461 9 9	„ Office Rent	...	60 0 0
„ Miscellaneous	...	...	„ Stationery	...	6 2 6
Total	...	2761 0 4	„ Travelling allowance	...	...
Balance from last month	...	63238 6 11	„ Postage etc.	...	184 6 9
Grand Total	...	65999 7 3	„ Miscellaneous	...	27 1 0
DETAIL OF BALANCES					
New Loans	...	8200 0 0	„ Other Printing	...	45 0 0
5 Years Postal Cash Certificates	...	6511 14 0	„ Propaganda work	...	25 0 0
G. P. Notes	...	10891 9 0	„ Expenses for Branches	...	136 5 0
Govt. Bonds 1943	...	5600 0 0	„ Furniture	...	...
6½% Govt. Bond for S. S.	...	10000 0 0	„ Audit fee	...	...
With Dr. S. P. Sengupta Ex-Manager	...	818 12 1	„ Payment to Contributors	...	5 6 0
Postal Saving Bank with President	...	2155 3 11	„ Reception Committee Gauhati	...	195 4 0
With Branches	...	550 13 3	„ Loan returned to	...	...
With Editor:—			Dr. D. V. Venkappa	...	8 3 0
In Bank	1922 15 1		Dr. Hari Ram (R.B.)	...	143 8 0
In hand	128 15 6				
In Stamps	13 3 0				
With General Secretary:—		2065 1 7			
In hand	36 8 11				
In Bank	45 7 4				
Advance to G. Secy. for T. A.	...	82 0 3			
With Treasurer:—		35 8 0			
In hand	27 2 6				
In P. N. Bank	2519 0 0				
In P. S. Bank	14713 0 2				
Total	...	17259 2 8	Total	...	1829 6 6
			Balance in hand	...	64170 0 9
			Grand Total	...	65999 7 3

CONSOLIDATED ACCOUNTS OF THE ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION

Receipts		OCTOBER 1938		Payments	
		Rs. A. P.		Rs. A. P.	
To Subscription (old and new)	...	495 5 0	By Printing I. M. J.	...	578 14 8
„ Advertisement	...	957 10 6	„ Establishment	...	410 0 0
„ Interest	...	...	„ Office Rent	...	60 0 0
„ Miscellaneous	...	2 4 0	„ Stationery	...	52 8 0
„ Loan from President	...	25 8 6	„ Travelling allowance	...	519 6 0
Total	...	1480 12 0	„ Postage etc.	...	195 1 3
Balance from last month	...	64170 0 9	„ Miscellaneous	...	61 13 9
Grand Total	...	65650 12 9	„ Other Printing	...	88 0 0
DETAIL OF BALANCES					
New Loans	...	8200 0 0	„ Propaganda Work	...	58 7 0
5 Years Postal Cash Certificates	...	6511 14 0	„ Expenses for Branches	...	83 15 3
G. P. Notes	...	10891 9 0	„ Furniture	...	1 10 0
Govt. Bonds 1943	...	5600 0 0	„ Audit fee	...	...
Govt. Bonds for S. S.	...	10000 0 0	„ Payment to Contributors	...	20 0 0
With S. P. Sengupta Ex-Manager	...	818 12 1	„ Reception	...	...
Postal Saving Bank with President	...	2155 8 11	Committee Gauhati	...	100 0 0
With Branches	...	480 9 9			
With Editor:—					
In hand	159 13 0				
In P. N. Bank	1379 8 5				
With General Secretary:—		1539 5 5			
In hand	78 7 5				
In bank	7 3 4				
With Treasurer:—		85 10 9			
In hand	21 7 9				
In P. N. Bank	2310 10 0				
In P. S. Bank	14805 14 2				
Total	...	17137 15 11	Total	...	2229 11 11
			Balance in hand	...	63421 0 10
			Grand Total	...	65650 12 9

All-India Medical Licentiate's Association Family Fund

STATEMENT OF ACCOUNT FOR THE MONTHS OF JUNE, JULY, AUGUST AND SEPTEMBER, 1938.

RECEIPTS	June 1938	July 1938	August 1938	September 1938	PAYMENTS				June 1938	July 1938	August 1938	September 1938
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.					Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Balance brought forward from last month's account	28 6 0	26 7 0	39 11 0	20 11 0	Office Establishment	...	...	...	25 0 0	25 0 0	25 0 0	50 0 0
By credit to call No.	...	...	...	...	Postage	...	...	...	...	20 0 0	...	10 0 0
" 177	...	...	1 0 0	...	Stationery	...	...	...	...	2 4 0	...	0 2 6
" 178	...	...	1 0 0	...	Printing charges	...	...	...	...	...	5 0 0	12 0 0
" 179	2 0 0	...	3 0 0	...	M. O. Commission	...	...	...	4 8 0	3 14 0	...	...
" 180	2 0 0	...	4 0 0	...	Miscellaneous charges	...	...	...	...	...	...	1 8 0
" 181	2 0 0	...	4 0 0	...	Deposits returned	...	...	...	3 0 0	3 0 0	...	...
" 182	2 0 0	...	4 8 0	...	Death calls paid	...	...	...	345 10 0	465 2 0	...	5 6 6
" 183	2 0 0	...	6 0 0	...	Deposited in P. O.	...	...	...	...	200 0 0	260 0 0	21 4 2
" 184	2 0 0	...	8 0 0	...	Savings Bank	...	...	...	...	...	145 4 6	...
" 185	2 0 0	7 0 0	9 0 0	...	Deposited in Premier	...	...	...	...	...	4 12 0	...
" 186	2 0 0	8 10 0	9 0 0	...	Co-operative Bank	...	...	...	...	...	...	...
" 187	2 0 0	9 0 0	8 12 0	...	Deposited in Imperial	...	...	...	...	...	...	...
" 188	...	25 0 0	22 0 0	...	Bank of India	...	...	...	...	...	...	...
" 189	...	72 0 0	81 0 0	...					378 2 0	719 4 0	440 0 6	100 5 2
" 190	...	79 0 0	81 0 0	...	Balance in hand	...	...	...	26 7 0	39 11 0	20 11 0	33 10 0
" 191	...	...	...	...					...	...	...	...
To further calls in advance	10 0 0	55 0 0	36 8 0	19 0 0					404 9 0	758 15 0	460 11 6	133 15 2
" Deposits	...	6 0 0	1 0 0	...								
" Admission fees	...	...	...	...								
" withdrawal from P. O.	351 8 0	464 14 0	145 4 6	21 4 2								
" Savings Bank	...	...	...	...								
" Interest	...	...	...	...								
	Rs. 404 9 0	758 15 0	460 11 6	133 15 2								

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COMPOSITION	INDICATIONS	DAILY DOSES:	
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MAGNESIUM	RICKETS	Powder	2-3 "
FLUORIN	LYMPHATISM	Dragees	2-4
ASSOCIATED WITH	MUSCULAR TWITCHINGS	Ampoules	1-2
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ment. Is it conceivable that this microscopic minority would be able to compete successfully against 5000 and odd private practitioners? That will be an absurd proposition and an unjust aspersion on independent medical practice. Besides, the paid services have been abolished by the Ministry with prospective effect and are being slowly replaced by honorary medical officers. Is it just that at this critical moment the Ministry should hit this vanishing tribe? That is not fair treatment to the existing members of the provincial and subordinate medical services who have been the pioneers in medical relief during the last one hundred years. Thirdly, is it right or proper that the Ministry should deprive the prerogative of the citizen in his choice of the practitioner? By all means, let the Ministry aim at stopping the corruption in hospitals, but to stop the practice of the medical officers is, to say the least, unjust, unfair, and untimely. The Minister seems to have taken the brief on behalf of the private practitioners without the latter asking for it, and the profession is none too grateful to him for his vicarious sense of duty and responsibility. He has the power to do what he pleases but he cannot escape the nemesis of retribution. The cry of the anguished members of the medical service is bound to smite his conscience some day or other. The writer of this comment is himself a private practitioner, and has tried his best to judge the issue on its merits. He holds no brief for the medical officers and they have not inspired him to state what he has stated in this comment. He has also convinced himself that the largest section of the private practitioners do not like the way in which the Ministry is trying to prop them up, as if they need this help. This only shows that the Ministry is drawing support to its measure more from imagination than from a popular demand.

Monthly Supplements

The first of a series of monthly supplements to the *Indian Medical Journal* is published along with this issue. They will be on the model of the Weekly Supplements of the *British Medical Journal* and will exclusively deal with medico-politics and allied subjects. They will also explain, from time to time, the objectives and policies of the All-India Medical Licentiates' Association, explore new methods to strengthen and to increase the influence of this organisation, and publish periodically the activities of its branches. We hope that our readers will appreciate and be benefited by this new venture in medico-political journalism.

CLINICAL NOTES

A Peculiar Case of Tetanus

• Dr. Kulajaranjan Roy, Krishnagar, Nadia Bengal.

A Hindu female patient named Bina aged about 16 years, unmarried, came to me with general anasarca for my advice. I examined her thoroughly and found nothing abnormal except that her heart was weak. Her liver and spleen were normal in size. She said that she got a slight fever on the day before she came to me, and general anasarca as the fever subsided. She said that she felt some tightness of jaws since last two days occasionally. On examination I found some unhealthy sores (itches) on both her legs.

In the evening she complained of severe headache for which her brother gave her a caffi-aspirin tablet with no effect. At about 8 p.m., she got epileptic-like fits. It relapsed again at about 9 p.m., when I was called. But before I went there the fit abated, but the patient could not speak though she was conscious. Then again at about 10 p.m. the fit recurred. Cold applications to the head were given. I suspected it to be a case of tetanus and advised the patient to bring in another doctor for consultation. But they did not care at first. Then at about 1 a.m., they called a doctor, but they did not think it proper to call me at that time. The doctor prescribed Veramon for the severe headache. During the night the patient got three more attacks of fits. Then early in the morning of the next day, they called me again, and also the doctor who attended the patient during the night. When we both were present and examining the patient, she started to have fits like epilepsy. My friend took them as epileptic fits but when I showed him the sores in her legs and related the history of tight jaws and the peculiar position of the patient during the fit, my friend agreed with me. At once anti-tetanic serum (10 c.c. of 3000 units of "Bhering Institute") was injected and 2 or 3 doses of chloral hydrate, pot. bromide and saturated solution of mag. sulph. were given to her by mouth. Fits did not recur and the general anasarca passed away gradually within 2 days. An ointment with sulphur and acid carbolic was given to apply to the sores after

(Continued at foot next page)

POST-GRADUATE ARTICLE

Cardiology

● Dr. Jai Gopal P.S.M.S., Dipalpur

(9)

Heart Block

AN ILLUSTRATIVE CASE

I was called to attend an unmarried girl aged 15 years suffering from hyperpyrexia. Her temperature was at the time of my visit 105.2°F and the pulse rate was exceedingly slow, viz., 80 per minute. The examination of her heart revealed pulmonary systolic murmur. There was no articular involvement throughout the period of her illness which lasted for about a week. During this period of her illness the temperature ranged between 104 and 105°F and the pulse rate persistently continued at 80. At the abrupt termination of her febrile state within thirty-six hours after my visit, the pulse rate dropped to 40 and continued its slovenly rate for several months unchanged and unaffected though the morning temperature was 96° or the evening rise amounted to 98°F. I saw her six months after her complete recovery when she was leading an active life, but the heart rate showed no change and was 40. A year and a half after this illness, she suffered a similar repetition of hyperpyrexia of almost the same duration and the heart beat and the pulse rate were identical viz., 80. Two years after complete recovery from attacks of fever her pulse rate continued unchanged at a rate of 40 although she was leading a life full of activity.

NATURE OF THE HEART BLOCK

Under normal conditions, as already studied under *physiological considerations*, the stimuli

(Continued from previous page)

proper washing. On examination of urine after three days a trace of albumin was found. But the patient was cured with no further treatment.

The case was obviously one of mild tetanus infection, but it is interesting to note how the symptoms of tetanus were masked by fever and anasarca. But for the unhealthy sores in her legs, one might not have been able to arrive at correct diagnosis.

originating in the sino auricular node are responsible for the regular and rhythmical contractions of the auricles and that the ventricles contract in response to the wave of contraction descending from the contracting auricles. If the junctional tissue between the auricles and the ventricles is diseased or its conductivity becomes otherwise defective, there is delay in the transmission of impulses and the result is a partial heart block. In case the conductivity is altogether abolished due to the widespread degeneration of the junctional tissue or else the continuity of the Bundle of His is broken by a lesion below the A. V. Node and at a point above its division into main branches, the waves of contraction in the auricle cannot be transmitted to the ventricles, and hence it does not respond. The Bundle soon awakens to its newly imposed responsibility in order to carry on the circulatory needs of the body, and the dormant faculty of originating impulses asserts itself with the result that the silent ventricles recommence beating. We know that the sensitivity and the rate of vital activity in the bundle is far below S. A. Node and the A. V. Node, therefore ventricles under these new circumstances beat in response to the intrinsic stimuli arising in the bundle and therefore at a rate not exceeding 30 per minute, and possibly it may be even below this. This condition is known as the complete heart block. In this condition though the auricles work at the normal rate of 72, the ventricles contract independently of a stimuli from the auricles and therefore at a rate of, say, 30 or so. There is disassociation of movements between the auricles and ventricles.

Thus two separate rhythms are maintained; one starts in and regulates the auricles and the other originates in and controls the ventricles. Although both the rhythms are regular, yet they are mutually independent of one another. Hence the systoles of auricles and ventricles vary in their time-relation instead of occurring in a normal sequence. Gaskell produced a similar condition experimentally by compressing the parts by means of a screw tourniquet.

By regulating the pressure on the junctional tissue he produced varying degrees of heart block at will and showed that if the compression is gentle there is delay in the transmission of stimuli from the auricles to the ventricles with the result that the interval between the systole of the auricles and the commencement of the ventricular contraction, termed as the *As-vs Interval*, is increased. If the compression is increased some of the impulses

from the auricles fail to reach the ventricles and similarly every second, or third, or fourth impulse may be obstructed at will by regulating the pressure. If the compression is increased to such a degree that no impulse can pass from the auricles to the ventricles, the ventricles at first stand still in a condition of a systole, but the inherent primitive rhythmic faculty of the Bundle soon asserts itself and its cells discharge the stored up energy and the ventricles recommence beating. The varying degrees of heart block akin to those produced by experimental compression may be produced by the diseased condition of the junctional tissue and may be grouped as follows:—

1. Under normal conditions, as we are aware, the ventricular systole occurs immediately after the cessation of the auricular systole and they are not separated by any pause. In the event of a defect in the conductivity of the junctional tissue there is an interval between the end of the auricular systole and the commencement of the ventricular contraction. This is known as prolongation of the *As-vs-Interval* and this phenomenon is generally seen in the early stages of heart-block. In a normal cardiac cycle the first sound of the heart is associated with ventricular systole and at the cessation of this the second heart sound is produced by the closure of the semilunar valves. This is followed by a long pause. The auricular systole which occurs at the end of the diastole does not produce a sound that may be audible provided the cardiac mechanism is *normal*, i.e., in an undisturbed cardiac mechanism the auricular systole is inaudible. When the *As-vs-Interval* is prolonged the muffled sound caused by the auricular systole which is not heard in a normal cardiac cycle is now heard. This sound associated with the auricular systole which occurs at the end of the diastole (immediately preceding the ventricular systole) causes reduplication of the first sound. If the interval between the auricular and ventricular systole is still further increased, the auricular contraction occurs in the early period of diastole and there is reduplication of the second sound instead of the first (Lewiss).

2. *Dropped beats*.—In a mild degree of heart block some of the impulses fail to reach the ventricles from the auricles and hence they do not respond and this is associated with missing of a beat. The pause thus produced between the two beats is double the period of a normal pause of a regular cycle.

The occasional missing of a beat is commonly seen among people of advanced age.

3. When the degree of the block is a little higher, there is frequency of missing beats. If every third auricular systole miscarries, the beats are grouped in pairs and the condition is known as *Pulsus bigeminus*. If every fourth auricular systole cannot be transmitted to the ventricles the beat is grouped in threes and this is termed as *pulsus trigeminus*.

"If the block is due to mitral stenosis and if the heart beat is grouped in twos, there will be presystolic and early diastolic murmur with the first sound of the first beat and none with the second beat, as the auricular and ventricular contractions coincide for the second beat of the couple and hence no blood enters the ventricles from the auricles" Lewiss.

4. When the block is of high degree every second beat of the auricles fails to reach the ventricles and in this condition the ventricles beat at exactly half the rate of the auricles. Hence if the auricle is beating at a normal rate of 72, the rate of ventricular response will be 36. This is known as 2:1 heart block. Similarly if the block is still more enhanced there may be 3:1 or 4:1 block and the heart rate or the pulse beat would be 24 and 18 respectively if the auricle is running a normal speed of 72, though such cases are rare and seldom seen except when associated with auricular flutter.

5. *Complete heart block*. This is a condition in which the impulses originating in the sino auricular node responsible for auricular contractions are not transmitted to the ventricles and they beat independently of the auricular contractions and in response to the stimuli originating in the Bundle. In this condition two separate rhythms are set up, one controlling the auricular movements and the second holds sway over the ventricular rate which work now at the idle rate of, say, 30 beats or even low. As the two rhythms are working quite independently of one another the condition is called as *Dissociation of auriculo ventricular rhythm*.

The diagnosis of the complete heart block is not a difficult affair, if the beat is thirty or below and is unaffected by exercise, inhalation of amyle nitrite or by a rise in temperature. The reason is that the nodal impulses do not reach the ventricle; and secondly the co-ordinating mechanism through the vagal and sympathetic fibres is no longer capable of retarding or accelerating the ventricular action. These nerves are capable of exercising their influence on the S. A. Node or the A. V. Node and if the lesion is below the A. V. Node their action is no longer exercised. The ventricles therefore maintain a slow rate of thirty or even below and this irrespective of the needs

of the body. Hence the ventricles fail to augment the circulation when demands are made upon the heart for increased circulation. The reason is that they are incapable of knowing that extra demands are being made upon it, because the messages arriving *via* sympathetic are stopped at the A. V. Node and the influence of this node is no longer being exercised owing to the lesion in the junctional tissue which obstructs the passage of impulses penetrating down the bundle. Hence they do not respond. During exercise or fever when the body requirements need an increase in circulation the heart rate cannot be increased. Similarly atropine which paralyses the vagal nerve endings thus allowing the sympathetic to hold complete sway over the heart's action, unhampered and unrestricted by the vagus, is not capable of increasing the circulation, because the influence of the sympathetic is no longer being exercised on the ventricles due to the lesion in the Bundle, which obstructs the impulses from reaching the ventricles. Besides this, there are other physical signs which if taken in conjunction with the persistent slow beat are helpful in confirming conclusively the presence of heart block and depend for their production on dissociation of beats in the auricles and ventricles.

When the contraction of the auricles coincides with that of the ventricles, the first sound is accentuated and when the auricles contract near the end of the ventricular systole, the second sound appears reduplicated or accentuated. Thus in beat to beat measurement there are definite and recurring changes in the intensity of either the first sound or the second sound. The rate of auricular contractions is manifest in the juglar pulsation. When the auricular systole coincides with the ventricular systole, no blood is pumped into the ventricles, hence the juglar pulsation is prominent and it occurs simultaneously with the accentuation of the first heart sound.

When the first and the second heart sound are clearly audible, a rough muffled sound due to auricular contraction may be clearly audible if it contracts during the prolonged diastolic period, because it has already been alluded to that the sound produced by the contracting auricle is inaudible in a normally acting heart, and is heard only if the *As-s-Interval* is prolonged. (Lewiss.)

AETIOLOGY

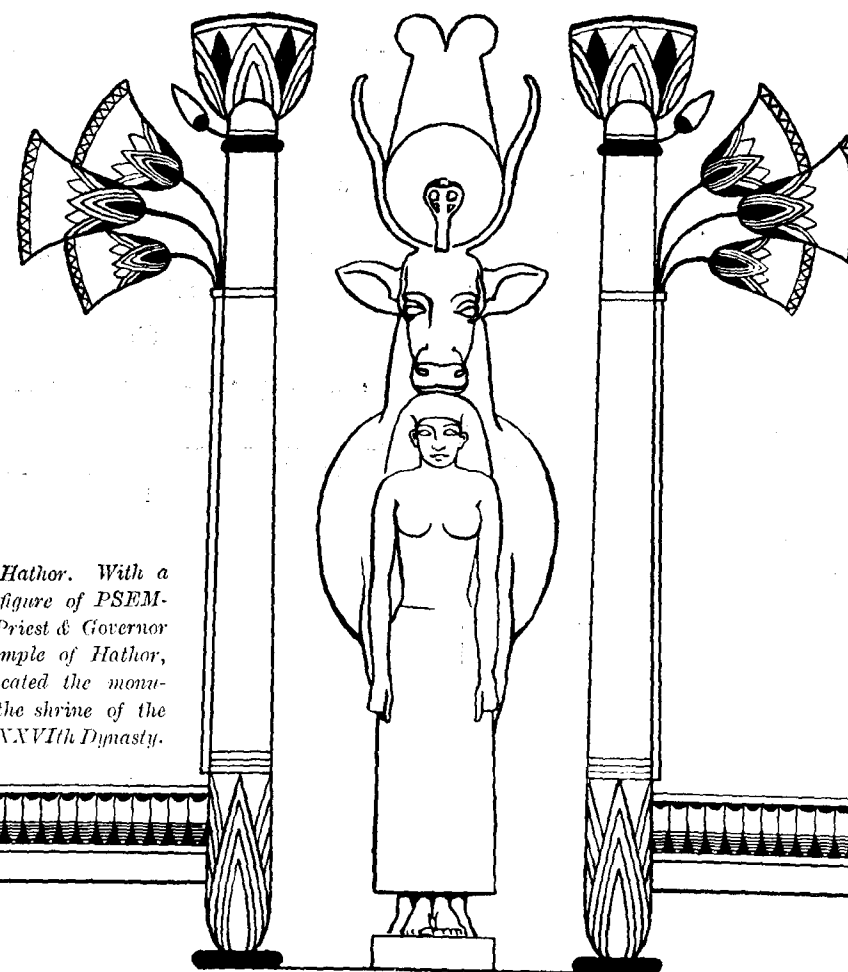
It is commonly seen in young adults and is not infrequent in advanced age. Due to the abnormality in the genetic system, cases of congenital heart block are known in the new born infants.

It is more frequent in men than in women. Acute rheumatism is responsible for its occurrence. In this condition there is associated acute or subacute inflammatory involvement of the myocardium and if the inflammatory processes are widespread, they may adversely affect the conductivity of the junctional tissue. In this connection it would be interesting to relate that no articular involvement occurred in the hyperpyrexia case cited in the opening paragraph of this article, though it is evident that the nature of the case was that of rheumatic infection. There are cases on record in which the symptoms depending upon heart block preceded the development of articular manifestations by a few days. The cases of partial block are seen during the course of relapsing or recurring febrile attacks from which the rheumatics generally suffer; and in them occasional dropped beats are encountered and their presence is the evidence pointing to myocardial inefficiency.

The other acute infections responsible for the production of heart block are pneumonia, typhoid fever, scarlet fever, diphtheria, and influenza and several other infections of great severity.

Sudden heart block may result from coronary occlusion or coronary haemorrhage particularly if the special branch of the right coronary artery which supplies the Bundle is affected. This condition is dangerous because there is a sudden and abrupt stoppage of the ventricles and if this cessation of ventricular action is prolonged beyond ten seconds, death is likely to supervene, if the bundle fails to come to patient's rescue by originating stimuli at its inherent rate of 30 per minute and independently of the auricular contractions. Sometimes the stimuli penetrate through some abnormal path and the ventricles recommence beating.

Chronic persistent heart block is seen, apart from persons subject to recurring and repeated attacks of rheumatism, among those suffering from syphilis. Gumma may affect the junctional tissue and impair its conductivity. Other chronic degenerative processes that occur commonly among elderly persons are responsible for the production of heart block. These degenerative lesions may affect the myocardium extensively or there may be a local involvement of the genetic system. Such lesion may be of the nature of a sclerosis, calcification, new growths and nodules. Atheromatous condition of the coronary vessels leading to fibrosis and other chronic inflammatory processes and ulcerations involving the bundle may be responsible for their causation.



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SYMPTOMS

1. *Heart block associated with acute infective conditions of severe nature.*—The symptoms are chiefly of the condition responsible for its development viz., influenza, pneumonia etc. In rheumatic heart block it has already been alluded to that cases are on record in which cardiac disturbance preceded the development of articular manifestations and even the febrile symptoms in certain cases.

2. *During transition from a light degree block to one of high grade.*—When a light degree block is being transformed, the ventricles stop during the period of transition and there are short attacks of syncope due to the cessation of heart beat. The syncopal fits may last from 3 to 7 seconds during which the patient is pulseless and becomes pale. As soon as the stimuli emanating from the contracting auricles are transmitted through an aberrant path, or if the cells of the bundle recover their inherent rhythmic faculty and discharge their stored up energy the circulation restarts and the patient regains his consciousness. These attacks of fainting are usually of brief duration and may be single, but sometimes recur frequently during the short period of readjustment when the block is being developed into one of high degree.

3. *The development of sudden heart block.*—This is a condition fraught with danger. In coronary occlusion or coronary haemorrhage affecting the genetic symptoms the sudden cessation of impulses in the part involved brings about the ventricular a-systole till the adjacent and unaffected cells of the genetic system recover from their disturbed harmony and restart the production of impulses. If the cell casualties in the genetic system are extensive, the blood circulation is established in response to the stimuli originating in the bundle. During this period of recovery which may be as long as 10 seconds and in exceptional cases even 15 seconds, the syncopal seizures associated with this condition are severe and death is likely to supervene. Depending upon the period of a-systole the period of unconsciousness is a prolonged one and the pallor of the skin followed by cyanosis, because during the long diastole the arterial blood had ample time to reach the venous system. The breathing is deep and stertorous or Cheyne-Stokes respiration may be present. In some cases apoplecticiform or epileptiform fits are super-added to the syncopal attacks. These are characterized by convulsions which are confined to the face and upper limb and these rarely spread beyond this. The tongue

is not bitten and there is no involuntary passage of urine.

These taken in conjunction with the absence of an aura are the points of differentiation in order to distinguish it from a typical attack of epilepsy. The attacks are precipitated without any warning, except that sometimes the patient may feel unusual slowing in his heart's action. The fits due to excessive heart slowing are termed Adams-Stokes' syndrome but they should not be taken as synonymous with heart block.

The fits of the nature of the Adams-Stokes' syndrome may be present in conditions other than heart block, whenever there is temporary suspension of heart's action, or when its action is exceedingly slow, and conversely there may be complete absence of the syncopal or epileptiform attacks when heart block is present even in its high degree.

4. *Heart block with myocardial efficiency unimpaired.*—If the person is young and the myocardial integrity is intact, the patient is symptom free so long as the activities do not exceed the cardiac output. But if the patient's activities exceed the cardiac output and repeated demands are made on the heart for increased circulation the heart though handicapped and incapable of increasing its rate begins to adjust itself to the changed conditions in order to satisfy the needs of the body. Due to heart block it is incapable of enhancing its rate; it therefore hypertrophies under the changed conditions demanding increased circulation. This is nature's first attempt to compensate for the deficiency caused by slow rate. The heart contracts forcibly and the outflow of the blood is increased, hence there is rise in the systolic pressure and it may be 170 or 180 mm Hg.

Due to the prolongation of the diastolic period, the arterial blood has extra time to reach the veins, hence the diastolic pressure falls. This extra amount of venous blood entering the heart means increased outflow in the arterial system. Thus more blood is available for the nourishment of the heart and this together with enhanced period of rest due to prolonged diastole is helpful in maintaining the efficiency of the heart. It is therefore when the myocardial tissues are healthy the adaptability of the heart to carry on its work efficiently is not impaired. Cases are on record in which persons with a block of 2:1 have lived a strenuous life enjoying full activity such as cycling, racing, and tennis playing for many years.

5. *Heart block with myocardial disability.*—When there is myocardial degeneration or

there is secondary dilatation of the heart, the output of the heart is deficient and this together with the slow rate of beat reduces the circulatory efficiency to such a degree that the various organs are deprived of adequate nourishment. The first organ to feel the pinch is the brain. Therefore patients are prone to attacks of giddiness, or brief fits of syncope or temporary loss of consciousness due to cerebral anaemia.

In complete heart block associated with wide-spread myocardial degeneration two effects are to be borne in mind. We know that in complete heart block the co-ordinating mechanism of the heart is held in abeyance and is incapable of augmenting the circulation to cope with demands of the body in times of extra stress. Secondly the hypertrophy of the heart is impaired and the myocardial reserve is fairly depleted owing to the degenerative lesion, hence the heart is incapable of compensating the loss in rate by increasing the output per beat. Under these circumstances if the person leads a moderate life and adjusts his activities in direct proportion to his circulatory efficiency, he remains symptom-free. But directly his physical exertion exceeds the myocardial output, unconsciousness supervenes due to the fact that the heart is incapable of augmenting the circulation, and the already depleted circulation, which is barely capable of meeting the body requirement under condition of least activity, is still further curtailed by the flow of blood being directed to the contracting muscles which are in action. This occurs at the expense of general circulation under the influence of vasomotor mechanism and results in cerebral anaemia which is responsible for the supervention of unconsciousness or a fainting fit. In this connection the case of a lorry driver cited by Dr. Williamson is interesting besides being instructive. This man's pulse rate persistently ranged between 28 to 34 and could not be accelerated under the influence of exercise. This man was picked up unconscious on more than one occasion whenever he attempted to run. At several clinical demonstrations to the post-graduates, this case showed no acceleration in his pulse rate after having been asked to trot round the lecture room at an increasing pace.

This man knew by experience the limitations of his myocardial capacity and as soon as he would feel giddy or suffer cramps in his legs or else show signs of sinking sensation or fainting, the experiment would be terminated. It is significant to note that his pulse rate

never rose beyond thirty-four at any one of the various demonstrations. This man died seven years after the commencement of his heart block. In his terminal illness of lobar pneumonia, the pulse rate never exceeded 36, and the temperature never rose beyond 100 throughout the period of his illness which lasted about 4 days.

PROGNOSIS

An established heart block, provided it is not progressive, is not dangerous if the myocardial integrity is intact. Such persons particularly if they are young are capable of leading an active life free from symptoms. The majority of cases of heart block are of mild degree and are therefore of a comparatively innocent nature. These patients survive for many years.

Sudden heart block associated with syncopal attacks is dangerous and death may take place during an epileptiform or apoplectic form of fits though such cases are rare. The persons suffering from fainting fits should be guarded against accidents to which they are liable.

During the transitional period when the block of lower degree is being transformed into one of a higher grade, the prognosis is uncertain and carries with it a grave possibility if the period of re-adjustment is a prolonged one. These patients are prone to fits of fainting.

When developed during the course of an acute infective illness, it is a sign showing myocardial involvement and such cases are temporary and there is likelihood of complete recovery. Persistent heart block with commencing heart failure symptoms is dangerous.

TREATMENT

When it develops during the course of an acute infective illness, rest is essential. Salicylates should be given in appropriate doses in rheumatic patients. Digitalis increases the block owing to its stimulating effect on the vagus nerve endings, hence it should be used sparingly and with caution. If in a case of heart block there are early signs of heart failure due to valvular defects or myocardial involvement or if dropsy is present and the heart block is complete, and ventricles contracting independently of the auricles the use of digitalis is not contraindicated, because under this condition it cannot do any harm. The reason is that in this condition the vagal control over the ventricles is abolished, hence digitalis therapy does not carry any risk. In fact its use in appropriate doses may benefit the patient by clearing the dropsy.

In persons with a clear history of syphilis, anti-syphilitic treatment should be vigorously tried. Mercurials, bismuth, iodides and Neosalvarsan therapy is beneficial and recovery is possible.

In syncopal attacks of the nature of Adams Stokes' syndrome the value of adrenalin hypodermically in 5 to 10 minim doses in raising the arterial pressure, especially in the splanchnic area, is great. It should be realised that the effect of the adrenalin is of a short duration, hence it should be repeated if required every hour or two hourly as the necessity arises, and in case of extreme necessity it should be given intravenously. Under its influence the arterial pressure rises and the heart rate is accelerated. Atropine in 1/100 grain doses should be tried hypodermically to increase the heart rate; but its value is rather doubtful, though there are cases on record in which it has increased the rate of ventricular contraction and thus relieved the symptoms. Besides this, several other drugs have been tried with a view to enhance the ventricular rate viz., amyle nitrite, strychnine and oxygen, but the results are not encouraging.

When the heart block is established and is not progressive and the person is able to undertake ordinary duties of life without suffering from fatigue or feeling of giddiness or fainting, rest or curtailment of bodily activity should not be enforced. On the contrary rest is essential if the lesion is active and progressive. In heart block when failure symptoms set in, the outlook is not very hopeful because in a heart which has ample time for coronary circulation and sufficient opportunity for rest during the prolonged diastole, any further slowing is impossible and we have no known means of increasing the force of the heart. All that we can do under the circumstances is to relieve the heart by eliminating all non-essential loads by curtailing the activities of the patient, but the outlook is gloomy.

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FOREIGN MEDICAL NEWS

Our London Letter

(From Our Own Correspondent)

RESISTANCE TO EXPERIMENTAL CANCER

Delivering the second Dixon Memorial Lecture at the Royal Society of Medicine, Sir Frederic G. Banting of Toronto said that the early experimental work on mammalian tumours demonstrated clearly that tumours in animals were identical with tumours in man in respect of mode of origin, age incidence, clinical course, mode of growth and infiltration of surrounding tissues. But there was a strict specificity and transplantation could only be carried out within the species. Rous and others (1910) found a number of sarcomas which would be propagated in fowls by means of a cell-free filtrate. But he found in his laboratory that some birds became resistant to Rous Sarcoma. This was possibly due to the fact that the plasma of Rous-resistant birds neutralised the cell-free active filtrates of a Rous tumour. It was also found that all the tissues of a resistant bird appeared to be resistant both to cell-free filtrates and to Rous tumour cells. This "resistance" might after all be a laboratory phenomenon unrelated to cancer of spontaneous nature. It might simply be an indication of reaction between host and tumour cells. If this were the complete explanation of the phenomenon of resistance, it could scarcely be imagined that the forces which destroyed a transplanted tumour could ever operate in natural cancer, in which the malignant cells had necessarily the same genetic constitution as the host. It might be that the forces which effectively rid an animal of spontaneous tumour might be a combination of intracellular and anti-viral immune bodies. The spontaneous cure of natural cancer was rare but there had been experimental tumours which could be propagated with cell-free filtrates and well therefore equivalent to spontaneous tumours, and these under certain circumstances regressed. "The question is," said Banting, "whether the regression is brought about by the development of immune bodies which destroyed the virus, or whether it is a more complex process, an interplay of various factors determining either an unlimited growth of the tumour or regression." The antigenic differences between host and malignant tissues might be sufficiently great to stimulate anti-bodies adequate to ensure the disappearance of even spontaneous cancers. "It is along these lines," he concluded, "that the greatest hope of cancer therapy lies."

RADIUM TREATMENT FOR CANCER

The publication on 30th Nov., of the Government Bill to provide facilities for the diagnosis and treatment of cancer gives added interest to the ninth annual reports of the National Radium Trust and the Radium Commission, which have now been published.

The Trust gives specifications of 56 new radium-containers delivered, measured and accepted during the past year. The Trust decided during the year to exercise the option to borrow a further 10 grammes of radium, making 20 in all. All the first ten grammes, with the exception of one very small consignment and a part of the second ten grammes, have been taken over by the Trust and put into use.

The report of the Radium Commission mentions the extension of Radium Beam Therapy, consequent on the provision of a second ten grammes of this loaned radium and states that Radium Beam apparatus is installed and working in hospitals at Birmingham, Aberdeen, Bradford, Edinburgh, Glasgow, Leeds and Sheffield.

It will be some years, it is noted, before survival rates are available to show statistically the results of this form of treatment but it is stated that thanks largely to the pioneer work carried out by the Radium Beam Therapy Research Institute, there is sufficient evidence to warrant large loans of radium, which have been made for this purpose, and the technique of treatment has already been standardised.

CROYDON TYPHUS EPIDEMIC

In the King's Bench Division, the Croydon Corporation was held legally liable for the typhoid epidemic which swept the district a year ago and caused 43 deaths. Mr. Justice Stable blamed the Corporation when he gave judgment in a test case, on which rested the fate of 200 similar actions. Negligence, he said, had been conclusively proved.

The action, the hearing of which lasted nine days, was brought by a father and his daughter, the latter having been seriously ill with typhoid for some weeks. The girl was awarded £ 100 and the father an agreed sum to cover expenses.

The judgment is being entered with costs against the Council. A stay of execution has been granted in view of an appeal.

The Judge said that it was obvious that contaminated water-supply was the cause of the typhoid outbreak.

Our German Letter

(From Our Own Correspondent)

CANCER MORTALITY

Most investigators on cancer mortality arrive at the same conclusion, namely that the increase in cancer is essentially a result of an aging of the population, together with an obvious improvement in the diagnosis of cancer. Of greatest interest in this connection is a recent publication by Hellmuth Haubold of the National Health Bureau in Berlin. He has worked up in great detail a sufficiently sizeable and reliable statistical material from ten large German cities having a total population of 9'4 millions, during the three decades 1901-1930. The crude mortality has increased as may be seen from the following table.

MORTALITY FROM CANCER					
Country	Year	Per 100,000 living inhabitants	Year	Per 100,000 living inhabitants	
Germany	1901	75	1930	123	
Denmark	1901	125	1930	143	
France	1906	70	1930	96	
Great Britain	1903	89	1930	145	
Switzerland	1901	123	1930	148	

In all these cities conditions predisposed toward a superior accuracy of the data: necropsis were required by law, and a large number of thoroughly trained physicians reduced to a minimum the likelihood of incorrect diagnosis.

But if the change of age groups is considered, cancer mortality in most age groups has rather *decreased* than increased as may be seen from the following table.

From 100,000 inhabitants of the same group of age in ten German large cities died from cancer.					
Decade		30-39 years of age.		40-49 years of age.	
		male	female	male	female
Prewar		2'5	5'0	11'7	18'3
Postwar		2'0	5'2	8'5	16'3
		60-69 years of age.		70 years and over.	
		male	female	male	female
Prewar		82'4	66'6	114'2	91'0
Postwar		76'2	63'9	129'3	108'0

The obvious increase of cancer mortality among persons 70 years and over is caused by a decline of the diagnosis of mortality from senile infirmities. Between the two decades compared, the latter declined 58'2 per cent among men and 53'8 per cent among women.

From all these data one may conclude that the danger from cancer is no greater to-day than in former years. Thus there must be no room for the mounting fear of cancer of the individual German. Neither, however, is there a ground for unfounded optimism. We will have a further increase in the actual number of cancer deaths as still more Germans are enabled to live some more decades beyond the 30th to 40th years of age. The increase of cancer mortality which is essentially caused by the change in the groups of age has by no means stopped so far. Therefore it is necessary to do everything possible to prevent and treat cancer.

CANCER OF THE LUNGS

Lymphogranulomas as well as bronchial carcinomas have increased in an appalling way all over the world. The latter form of tumours has appeared as clinical diagnosis not before 1900, while they form 28'05 per cent of all male carcinomas in 1930. Growths of the lungs are, according to Cramer, no real disease of the aged, but are most frequent between 40 and 60 years of age. Much more important than the tar content of automobile vapors is that of tobacco (5 gm. tobacco in 200 mg. tar for inhalation). By spectroscopic examination phenantrenes have been found in the tobacco; it is possible to produce papillomas and cancer of the skin in 95 per cent by painting the skin with them.

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FOREIGN MEDICAL NEWS

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Clinical symptoms of cancer of the lungs are shortness of breath, pain, cough, bleedings, signs of retraction, paralysis of the recurrent laryngeal and the phrenic nerves, pleural effusion etc. 80 to 90 per cent of the tumours are not treated before metastasis has occurred in the mediastinal glands. Empyema is early caused by obstruction of bronchi. Deep X-ray therapy of the lungs produces regularly fatal pneumonia in experimental animals when there is a general weak condition. Therefore a patient with cancer of the lungs has to be disintoxicated before he can stand X-ray therapy. Tumours with bronchiectasis must not be treated by X-ray therapy.

ALCOHOL AND SAFE DRIVING

This is a subject which is more and more important to the community. Prof. Sachsenberg, of Dresden, has conducted new blood tests and he announces the following results. There is still doubt about the amount of alcohol which makes a man incapable of properly controlling his motor car. Generally the limit for safe driving is an alcohol value of 1.5 per thousand in the blood in Germany, while this value is only 0.5 per thousand in Norway. Engineers, psychologists and physicians have co-operated in the Psychotechnic Institute of the Dresden Institute of Technology, to find out the amount of alcohol present in the blood which would produce physical impairment incompatible with the safe driving of a motor car.

Such an impairment was assumed if the driver after the intake of alcohol drove less safe than 90 per cent of all normal drivers. Many motor-car drivers as well as non-drivers underwent the tests and the blood examinations. The following values of the blood-alcohol-content were so high that the persons in question should not be permitted to drive a car.

With 0.2 per Thousand Alcohol Content of Blood	20 per cent of Persons Tested Unfit
0.4	40
0.5	49
0.6	(About 2 1/2 bottles of beer)
0.7	58
0.8	66
0.9	75
1.0	80.5
1.1	87.5
1.2	90
1.3	98
1.4 and over	96
	100
	(About 2 bottles of moderately heavy Rhine wine)

We see that already after the intake of two to three small bottles of beer half of all drivers are not able any longer to drive safely. And after finishing two bottles of moderately heavy Rhine wine any one who is responsible for the guidance of his motor car is a menace on the highway. There are exceptions, of course, particularly when the amount of alcohol in the blood is less than 1 per thousand. Such particular cases may be carefully checked by the methods of psychotechnic examination. The conclusion can be

reached from this research work that drivers may not consume even small quantities of alcohol before driving.

Our American Letter

(From Our Own Correspondent)

FINAL REPORT ON THE ELIXIR OF SULFANILAMIDE-POISONINGS

Last year the death of at least 76 persons from an uncontrolled Elixir of sulfanilamide in the United States has caused an unusual sensation. Now a final report of the American Medical Association Chemical Laboratory has appeared which is based on clinical research work as well as on animal experiments of E. M. K. Geiling, M.D., and Paul R. Cannon, M.D., of Chicago. The report verifies what had been found out soon after the startling deaths: that not sulfanilamide was the cause of the poisonings but the added Diethylene glycol.

By analysis, the A. M. A. Chemical Laboratory found the said preparation to be a 10 per cent solution of sulfanilamide in 72 per cent diethylene glycol, together with some colouring and flavouring agents. The makers of this product were unaware of its toxicity and distributed it freely without having tested it adequately on animals. Experimental animals given diethylene glycol exhibited the same clinical course and pathological changes in the kidney and liver as did those treated with similar doses of the Elixir or a "synthetic" elixir containing the ingredients in the same proportion as found by analysis in the poisoning elixir.

The pathologic changes were those of a severe chemical nephrosis with intracellular oedema of the epithelial cells of the convoluted tubules resulting in tubular obstruction by compression and by the intraluminal formation of casts. These changes in the kidney and liver were not due to sulfanilamide. Experiments are now in progress to determine the manner of excretion and the levels at which different species of animals can handle diethylene glycol. Dr. H. O. Calvery, Chief Pharmacologist of the Food and Drug Administration, Washington D. C., and his staff are conducting experiments which are in general accord with these observations.

The new Food and Drug Act is intended to prevent the introduction of new remedies which have not been satisfactorily tested on experimental animals. Still valid is a word of Leake which has been used in a discussion of drug policy presented before the Section on Pharmacology and Therapeutics of the American Medical Association some years ago: "There is no short cut from chemical laboratory to clinic, except one that passes too close to the morgue!"

ECONOMY IN MEDICATION

In the study of medical economics, economy in medication must not be overlooked. In large hospitals the saving result from cooperation bet-

2-2-35-2

ween prescribing physician and dispensing pharmacist is enormous. An unusually interesting article of B. Fantus, Chicago, in the Journal of the American Medical Association points out the possibilities in this field.

Of course by economy in medication, Fantus does not mean the use of inferior remedies, for the first principle of economy in prescribing is that the most efficient remedy is likely to be the cheapest. The second principle should be: among drugs of equal efficiency choose the least expensive. At present, hardly anybody seems to know how much it is necessary to pay in dollars and cents to secure a certain therapeutic effect.

In the following table is shown merely how much it costs to relieve pain, not the relative analgesic value. It is not even contended that more expensive agents might not be worth the difference in price; but it seems self evident that in a charity hospital one has no right to spend many times the money for a dose of pain-relieving medicine unless it can be clearly shown that the effect is definitely better than that of the cheaper remedy.

"DOSE—PRICE"—INDEX OF ANALGESICS

Name	Dose Gm.	Dose-Price Index.	Frequency per 10,000 R
Acetanilid	0.20	Unit	23.3
Scopolamine hydro-bromide	0.0006	3	1.3
Acetylsalicylic acid	0.30	4	453.8
Acetophenetidin	0.30	7	582.0
Antipyrine	0.30	12	9.1
Morphine	0.008	15	208.5
Aminopyrine	0.30	24	230.3
Opium	0.06	40	62.8
Phenobarbital	0.03	45	298.1
Codeine	0.03	65	1018.9
Neocinchophen	0.50	97	8.8
Allonal	0.15	145	72.0

Acetanilid is the cheapest of all analgesics but it has a relatively small usage, while codeine which is one of the most expensive of analgesics, is employed more than any other of those agents. The enormous use of codeine is due to its employment as an antitussic. Fantus states that its use as an analgesic might be greatly restricted in favour of morphine. In private practice, codeine has the advantage of being much less habit forming. This matter plays but a subordinate role in hospitals in which the supply of the drug is completely under control.

THE HORSE AND BUGGY DOCTOR

A Kansas country doctor, Arthur E. Hertzler, M. D., in his book "The Horse and Buggy Doctor" which is a best-seller all over the country, says that this account might have been written by countless thousands of old country doctors.

What has been the motive for medical progress, he asks? And here is his answer:

Doctors, like other human beings, wish to escape pain, defeat, failure. The death of a patient means all three of these. By the time a doctor reaches threescore years and ten his mind is full of tragic memories: the unexplained infection, the heart block, the thrombosis. Surgeons of long experience consciously or unconsciously long for the day when they shall do their last operation. Their successes,

though vastly predominant, come to be taken as a matter of course and are forgotten; their failures will not down.

A friend once found Dr. Condoyle, the great scientist, hard at work late at night. The friend remarked that he must love his work—the professor was then 80 years of age. "No", replied the old man, "it is not love of science that drives me. It is to drown my grief."

There is no consolation, Hertzler says, if a patient dies. Feeling the responsibility, the doctor has a greater urge to prevent its recurrence; and on such fundamental urges progress depends.

HEALTH ACTIVITIES UNDER SOCIAL SECURITY ACT

Nearly 3,000 persons had received postgraduate training in public health work up to June 30, 1937, and 1,300 more have been in training in 1938. They include 651 medical officers, 162 engineers, 1,540 nurses, 451 sanitation officers, 88 laboratory workers and 60 others. More than 200 medical officers had a full years' course in public health administration. Six States are completely covered by full-time health officers; 24 States had separate divisions for venereal disease control; 30 had full-time and 2 part-time officers for venereal disease control; 15 States have separate divisions for industrial hygiene.

HIS DIAGNOSIS WRONG: DOCTOR ENDS HIS LIFE

The body of a young doctor, who left notes expressing horror at an incorrect diagnosis he had made for a dying patient, was found in a Californian hotel. Like many a conscientious general practitioner, he believed—may be by mistake—he had made a faulty diagnosis. The doctor, 32 years old, who had been missing nine days from his home, had died from poison, leaving a written record of his feelings as death approached. "It is so peaceful and calm and so different from the mad chaos that I have left behind me", he wrote in his long "thesis on death". "(a patient) desperately ill, and I almost leaving him until his very last dying words, calling me back to his side, bringing the terrible realization that I have utterly and completely missed the diagnosis. All these are fearful monuments to my horrible ineptness as a practitioner. Surely there can be no good reason for my going on and maiming honest people just to eke out a living—to me general practice was just a life of mayhem and murder. I am not at all afraid of Death. Death is an old friend."

The first notation recorded the taking of fifteen grains of the poison. It mentioned: "No reaction". Similar notations of "no reaction" timed five and ten minutes later were followed with the exclamation: "What the hell!". Then came: "Here it comes. I guess I have a gastric retention, for everything except nicotine and alcohol."

NEW FEDERAL FOOD AND DRUG ACT

The new Federal Food, Drug and Cosmetic Act is to replace the Food and Drugs Act of 1906. The most noteworthy advance made by the new

(Continued at foot of next page)

INDIAN MEDICAL NEWS

(From Our Own Correspondent.)

INDIAN MEDICAL COUNCIL

The efforts made by the Medical Council of India to improve the standard of medical education in the country and to obtain reciprocal recognition of Indian and overseas medical degrees were explained by Major-General E. W. C. Bradfield, Director-General of the Indian Medical Service, in his presidential address to the meeting of the Council held here during October 25 and 26, 1938.

The President stated that inspections of the teaching facilities and of examinations in the subjects of physiology, pharmacology and anatomy in all the Universities had been completed and that the inspectors' reports had been forwarded to the Universities concerned for their observations.

All Indian Universities whose degrees are on the schedule of the Indian Medical Council Act had been requested to furnish full details of the courses of instruction at present given and of the examinations held in the subjects of Hygiene and Public Health and to offer suggestions for improving the teaching of these subjects, especially Rural Hygiene.

As a result of further negotiations for a scheme of reciprocity, replies had been received from Victoria, Prince Edward Island and Manitoba and these had been placed before the Executive Committee.

Information had been received that the Japanese authorities had no objection to the recognition in Japan of Indian medical qualifications in so far as they were recognised by the General Medical Council. As regards direct reciprocal arrangements, it was decided at the last meeting of the Council to request the Central Government to ascertain from the Japanese authorities which of

(Continued from previous page)

Act has reference to the introduction of new drugs. The act forbids the introduction, or the delivery for introduction, into interstate or foreign commerce of any new drug, unless an application has been submitted to the Secretary of Agriculture and has become effective. Any drug that is not designated solely by a name recognized in the United States Pharmacopeia, the Homeopathic Pharmacopeia of the United States or the National Formulary, must be labelled to show its common or usual name, unless it is dispensed on the prescription of a physician. Any drug that is not dispensed by a physician, dentist or veterinarian and that contains morphine etc., must show on its label the name, quantity and percentage of such substance or derivative and in juxtaposition therewith the statement "Warning—May be habit forming."

the Japanese medical qualifications were proposed for recognition by India. Information had been received that the Central Government had addressed H. M. Government's Ambassador at Tokyo on the subject.

Stanley Medical College.—"You are no doubt aware," proceeded Major-General Bradfield, "that the Stanley Medical School at Madras is to be raised to college standard and affiliated to the University of Madras. The Registrar of the University of Madras has supplied a copy of the report of the Commission appointed by the University to inspect the Stanley Medical School.

"The gradual up-grading of medical schools in India is a matter, which (I believe) will continue to attract the attention of this Council and I am sure you will agree that such an important advance will require our careful and sympathetic consideration.

"The duty placed upon us by the Indian Medical Council Act is the maintenance and control of the standards of uniform medical education in British India. The results of your labours are published in the printed records, and I would like to take this opportunity of bearing testimony to the disinterested spirit with which the problems presented to the Council have been approached and the real progress which has been made towards the establishment of a sound and acceptable standard of medical education in this country."

Among the decisions recorded by the meeting was one that such L.M.P. diploma-holders of Madras as had completed the five years' course and passed the Intermediate Examination might be exempted from passing the Pre-Registration Examination in Physics, Chemistry and Biology.

Vizag. Medical College.—The Council decided that a further inspection of the Medical College, Vizagapatnam, should be made in November-December, 1938. The Council noted with satisfaction reports of the improvements which had been effected in the building and in the teaching facilities.

It was also decided to recommend to the Central Government to amend the Indian Medical Council Act of 1933 so as to make a provision of the nature set out in Clauses A and B of Section 120 (1) of the Government of India Act of 1935. The proposed amendment, when carried out, would complete the scheme of reciprocity in regard to the recognition of British medical qualifications.

The Council decided that only those qualifications should be recognised for teaching appointments in clinical subjects to which recognition was accorded by the Council.

The Council noted the correspondence carried on with the following countries regarding reciprocity of the recognition of medical degrees: Victoria, New Zealand, Prince Edward Island, Nova Scotia, South Africa and Manitoba.

The Council unanimously confirmed Khan Bahadur Dr. K. A. Rahman as Secretary of the Medical Council of India with effect from November 1.

The next meeting of the Council will be held on February 27, 1939.

MEDICAL SCHOOL EDUCATION CONFERENCE

At the conference on medical school education held at New Delhi on the 7th November, 1938, with Major-General Bradfield in the chair, the following resolutions were passed:—

1. This conference recommends that one uniform minimum standard of training and qualification for practitioners of modern scientific medicine should be established throughout India at an early date and that this standard should be such as shall satisfy the requirements laid down by the Medical Council of India.

2. In accordance with Resolution No. 1 this Conference recommends that the standards of equipment and training in medical schools should be raised to those required for recognition by the Medical Council of India.

3. Until the requirements of the Medical Council of India can be fully met this Conference recommends that improvements be effected in the existing Medical Schools on the lines laid down in Resolutions Nos. 4, 5, 6, 7 and 8.

4. This Conference recognises that in some cases difficulties will be experienced in raising schools to the standard required by the Medical Council of India and recommends that in such cases improvements should be introduced gradually as circumstances permit, in the following stages of training: (i) General preliminary education qualifying for admission to medical schools, (ii) Preclinical scientific subjects, (iii) Clinical subjects.

5. This Conference is of opinion that, wherever it may be necessary to continue a medical qualification of the licentiate standard for some further period steps should be taken to introduce the uniform minimum standard of general education laid down by the Medical Council of India as a preliminary qualification for entrance to medical schools.

6. This Conference while recognising the Provincial Medical Councils are the Bodies responsible for supervision of Provincial medical education considers that full use should be made of their powers in order to standardise and improve education in medical schools.

7. This Conference recommends that no student should be allowed to begin the medical curriculum proper until he has attained the age of 17 years or will attain that during the first term of the curriculum.

8. This Conference desires to emphasise the importance of a better training in the subjects of midwifery and diseases of women during the medical school curriculum. This training in addition to courses of systematic instruction and clinical demonstration, should include practice and instruction at a prenatal clinic and should provide for the conduction of at least ten cases of labour under adequate supervision of a qualified medical officer.

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IMITATIONS

EXTRACTS

Toxic and Infective Jaundice.—C. E. LAKIN: (*B.M.J.*, Aug. 27, 1938 p. 437) while discussing its pathology proceeds on the assumption that the parenchymatous cells of the liver have nothing to do with the formation of bile pigment, that the pigment is derived from haemoglobin liberated from more or less effete red corpuscles and the transformation of haemoglobin into pre-hepatic bili-rubin is attributable to the activity of the reticulo-endothelial cells. Clinically, jaundice is staining of the skin and tissues by bile pigment and this state is produced in three different ways: (1) Gross obstruction to the escape of bile into the intestines with subsequent absorption of bile. (2) Excessive blood destruction leading to the accumulation in the blood stream of such a large amount of pre-hepatic bilirubin that the excretory function of even a healthy liver is overpowered—the so-called haemolytic jaundice. (3) Damage of the liver by drugs or microbial agents so that the liver is unable to work at its normal level—the so-called toxic or hepatogenous jaundice. Whereas in obstructive jaundice the sufferer is more likely to be jaundiced than ill, in toxic jaundice he is likely to be more ill than jaundiced, though deep jaundice is sometimes seen. Except in most severe cases the stools remain fairly normal in colour. Fever is usual but in acute yellow atrophy the temperature may be subnormal. Urine would show varying quantities of bile in addition to urobilin and albumin; blood-stained casts and sometimes red corpuscles are likely to be present while excretion of aminoacids may be raised. In severe cases, blood sugar also falls. Pathologically, the essential lesion in toxic jaundice consists in damage to the parenchymatous cells of the liver, associated, in some cases, with cholangitis. When the injurious agent acts upon the liver in massive doses, the case is usually clinically referred to as acute necrosis of the liver, acute toxic hepatitis or acute yellow atrophy. When the injurious agent is less virulent and reaches the liver in smaller amounts over a greater length of time, a much more gradual change is induced in the liver cell and a gradual replacement fibrosis results, with the production of chronic hepatitis or cirrhosis of the liver. Thus acute yellow atrophy at one end of the scale and cirrhosis of liver at the other fall into line.

Some Cardiological Fallacies.—Unfounded beliefs regarding cardiovascular disease appear to be so widespread, write Drs. Linnell and Thomson (*B.M.J.*, Aug. 27, 1938, p. 442), that they are worthwhile to discuss some of the commonest of them. (1) The dyspnoea of obese people is not often due to "fatty heart". The commonest cause is hyperpiesis. (2) Healthy heart is rarely injured by physical strain. (3) Displacement of the apex beat to the left, where this cannot be attributed to pulmonary causes, though suggestive of enlarged heart is not absolutely diagnostic. It may be due to scoliosis and a high diaphragm. (4) The heart is generally believed to increase in size with age, as a normal process. There is no evidence for this. It may even diminish in size. When it is found to be enlarged in old age it may be due to hyperpiesis, bundle branch block etc. (5) The idea that one can gauge the functional efficacy of a heart is altogether fallacious. (6) Mitral regurgitation, unaccompanied by mitral stenosis, seldom, if ever, occurs as a result of rheumatic endocarditis. Contrary to current teaching, a systolic murmur at the mitral area is the commonest murmur in mitral stenosis, not a pre-systolic. (7) Dizziness, faintness and syncope are not cardinal symptoms of heart disease. Neither is exhaustion or a feeling of tiredness a cardinal symptom of heart disease. It cannot be laid too strongly that the cardinal

symptoms of heart disease are two and two only: (a) shortness of breath on exertion, and (b) pain, usually retrosternal. (8) The pain of angina pectoris is typically retrosternal, not precordial, as is commonly believed. (9) Coronary thrombosis very seldom occurs as a result of syphilitic aortitis, in spite of the fact that in this latter condition narrowing of the orifices of the coronary artery is almost the rule. (10) That a patient's systolic B.P. reckoned in millimetres of mercury should equal 100+ his age in years is still an article of faith in many quarters. Mass statistics now available prove that this is not the case. The B.P. should normally rise only slightly with increasing age. This is evidenced by the fact that in normal people the increase between the ages of 20 and 60 is no more than 15 mm. (11) Atheroma is never a cause of high B.P., though there is little doubt but that the latter ultimately tends to atheromatous degeneration of the arteries. (12) Syphilis never causes general arteriosclerosis. The arterial involvement in syphilis is invariably focal. (13) Aneurism of the thoracic aorta scarcely ever causes dysphagia with regurgitation of food, although it may occasionally be accompanied by some discomfort in swallowing. (14) (Auricular) fibrillation is, curiously, very rarely associated with subacute bacterial endocarditis.

Sulphanilamide in Gonorrhoea.—Cokkins and Mc Elligott (*Lancet*, Aug. 13, 1938, p. 355) summarise their experiences of 633 cases of gonorrhoea with sulphanilamide as follows: (1) The experience of 491 male cases and 142 female cases analysed in this report shows that the best results with sulphanilamide treatment in gonorrhoea can be obtained only by a specialised technique of administration and that incorrect or haphazard chemotherapy is followed by a high proportion of failures. (2) With this optimum technique a permanent cure can be expected in 80% of male patients with one course of 3 weeks' treatment, although all manifestations of the disease usually clear up well within the first week. (3) Women seem to be more sensitive to minor toxic effects. (4) In complicated cases the curative action of sulphanilamide appears to be equally rapid and permanent. (5) A degree of immunity appears to be essential to the attainment of optimum results with sulphanilamide chemotherapy. Hence the importance of "timing" the chemotherapy correctly and combining it with vaccine treatment. (6) Failures and relapses can be attributed to (a) premature or inadequate administration of the drug, (b) prostatic enlargement in males, (c) secondary vaginitis in females, (d) and possibly too early provocation. (7) Serious toxic effects are rare but minor toxic effects are quite common. Even to these tolerance is often acquired.

The technique of administration which the authors advocate is:—For men:—(1) *Acute cases attending in first week of symptoms:* (a) Vaccine twice weekly (b) daily irrigations. Sulphanilamide is started 8—10 days after appearance of discharge and continued for a full three weeks. For cases attending after the first week of attack, the technique is the same but that sulphanilamide is started at once. (2) *Chronic cases:* The total period may be cut down to about 17 days while a mixed gonococcus vaccine may be used with advantage. For Women: Recent infections are treated with bi-weekly vaccine, and urethral and vaginal irrigations daily. No speculum and no cervical treatment are used. In presence of dysuria an alkaline sedative is given. Sulphanilamide is never commenced before the 8th day of symptoms. Administration is maintained for three weeks and must be continuous. In chronic cases similar chemotherapy is employed but Stovarsol pessaries are used from the beginning and a mixed gonococcal vaccine is given.

The Treatment of Lobar Pneumonia with Rabbit Anti-pneumococcus Serum:—Loughlin, Bennett and (Spitz *Jour. A.M.A.*, Aug. 6, 1938, p. 497) summarize their observations as follows: (1) 69 patients with lobar pneumonia caused by pneumococci of Types I, II, V, VII, VIII, and XIV were treated with homologous rabbit anti-pneumococcus serum. There were 5 fatal cases, 3 of type I and 2 of type II in all of which there was bacteremia and in all of which serum treatment was delayed until late in the course of the disease. No patient died when treated within the first ninety hours of the disease. The mortality rate for the entire series was 7.4%. (2) Forty patients were successfully treated with a single projected dose. (3) The blood stream was invariably sterilised when the projected dose has been administered. (4) There were no severe untoward reactions incident to the administration of the unconcentrated and refined rabbit anti-pneumococcus serum.

Vitamin E: Recent work:—*The Prescriber*, October, 1938, gives the following concise summary of recent work on vitamin E.

Although it has for several years been recognised that vitamin E is in some way concerned with reproduction, the exact nature and function of the vitamin have been little understood. During the past year or two, however, a considerable amount of work has been done on this vitamin and knowledge regarding it is becoming more definite.

Vitamin E is fat-soluble and exists in the leaves and seeds of certain plants, such as lettuce, watercress, etc. It is especially abundant in the embryo of wheat, and wheat-germ oil is the source from which it is obtained commercially, the non-saponifiable portion of the oil being used. Cotton-seed oil also contains a considerable amount of this vitamin.

Experimental work has shown that vitamin E is essential to the proper functioning of the reproductive process. Deficiency of this factor disturbs intra-uterine development and results in reproductive failure. Vitamin E was at one time styled the 'anti-sterility factor,' but this is inaccurate; its influence in combating sterility is questionable, but it does influence the proper exercise of the reproductive function, and its absence or deficiency apparently leads to habitual abortion. Its clinical application, therefore, lies in its use in preventing spontaneous abortion. Numerous cases have been reported in which wheat-germ oil has proved clinically effective in this respect. Women who have habitually aborted in the past, or in whom abortion is threatened, have benefited in a remarkable manner from the oral administration of wheat-germ oil. These are not isolated cases; authoritative and fully documented reports bear witness to its efficacy. A study of the literature shows that after such treatment successful delivery of full-time normal infants has occurred in about 80 per cent. of women subject to habitual or threatened abortion. The treatment does not affect women with primary sterility.

Physiology:—The actual part played by the vitamin is not fully understood, but experiments on animals show that it is essential for the normal development of the embryo. In the absence of this factor, foetal growth ceases at a certain stage, gestation comes to an end, and the dead foetus is resorbed. In human beings no direct association has been traced between a deficiency of vitamin E in the diet and the occurrence of habitual abortion, but it may be that individual requirements differ and that storage of the vitamin is deficient in some persons. No oestrogenic effect is produced by wheat-germ oil when it is given to castrated animals. The suggestion has been advanced that the vitamin has a controlling effect on oestrin, but this is mere supposi-

tion. Relationship with the endocrine organs has been suspected but little that is definite has been demonstrated. Rats rendered deficient in vitamin E have shown degenerative changes in the anterior pituitary and hypoplasia of the thyroid, and while these rats produced living litters they were unable to rear them unless fed with the vitamin (see *Prescriber*, May 1938, p. 156). From these data it is suggested that vitamin E is necessary for the normal functioning of the anterior pituitary, and that it is possibly a factor in the elaboration of its gonadotropic principle. Progesterin, the hormone of the corpus luteum, has also been found to be effective in habitual abortion. (see *Prescriber*, May 1938, p. 173), and this suggests a possible relationship between the vitamin and the corpus luteum: so far, however, this is pure speculation. Vitamin E is not galactagogue. Experiments reported from Germany show that its administration has no effect on the quantity of milk in the breast or on the growth of the infant.

Chemistry:—The chemistry of vitamin E has recently been studied very fully, and its synthesis is said to have been accomplished. In 1936 certain workers in California isolated from wheat-germ oil an alcohol having the physiological properties of vitamin E. This has been called α -tocopherol and its empirical formula is $C_{29}H_{50}O_2$. Two alcohols isomeric with this were isolated also: one of these (β -tocopherol) had some vitamin potency.

During the past twelve months or so much work has been done on the tocopherols. The chemical reports are extremely technical in character and are concerned mainly with the chemical structure of these compounds and of other compounds, from the same source. The knowledge thus acquired has rendered possible the standardization of preparations of wheat-germ oil and has led to the synthesis of α -tocopherol. This synthesis has only recently been announced by Swiss workers, and synthetic vitamin E is not yet a commercial product.

Clinical Application:—So far the only therapeutic application of vitamin E is the treatment of habitual abortion. For this purpose a concentrate of wheat-germ oil is employed, the synthetic vitamin not yet being available. This concentrate is supplied commercially under various names, such as Wheat Germ Oil (Brit. Colloids), Vitamin E Concentrate (B. Drug Houses), Viteolin (Glaxo), Fertiol (Vitamins Ltd.), Zygon (Squibb), etc. These are usually supplied in the form of capsules containing 3 minims of the concentrate, equivalent to about 5 gm. of the oil. The dose recommended for habitual abortion is one capsule daily throughout pregnancy; for threatened abortion four or five capsules as soon as symptoms appear, and thereafter one capsule daily until termination of pregnancy. The capsules have been said to deteriorate with heat, and it is well to store them in a cool place and to use them as fresh as possible.

It has been shown that wheat-germ oil is effective in about 80 per cent. of cases. That means some 20 per cent. of failures, and it is thought that these may be due to the use of deteriorated preparation, to inadequate dosage, or to personal idiosyncrasy, possibly endocrine disturbance. A few cases of idiosyncrasy to wheat-germ oil have been reported, such as rash and urticaria, but these do not seem to have been serious. Green foods (lettuce, etc.), although they contain vitamin E, do not replace wheat-germ oil in treatment of abortion.

As, already stated, the value of vitamin E in sterility is at best questionable, it has been suggested that a dose of one or two capsules may be given daily in such cases along with hormone treatment.

London Medical Exhibition October, 1938

The comprehensive selection of high-quality pharmaceutical products shown by Burroughs Wellcome & Co. provided ample evidence of the progressive policy of the firm. In addition to a range of established medicaments of world-wide repute, the exhibit included several recent introductions particularly worthy of notice.

Visitors were greatly interested in 'TABLOID' SULPHONAMIDE-P (Sulphanilamide) which occupied a prominent position in the exhibit. This new chemo-therapeutic preparation for the oral treatment of hæmolytic streptococcal and other infections increases in importance as its therapeutic value gains greater recognition. The specific chemotherapeutic effect of sulphanilamide on the hæmolytic streptococcus was demonstrated by means of an ingenious arrangement of illuminated photomicrographic transparencies, and in addition, the clinical use of the drug in such conditions as meningitis and in *B. coli*, *Pr. ammoniae*, and gonococcal infections of the genito-urinary tract was shown pictorially. Sulphanilamide is also available as 'WELLCOME' SULPHONAMIDE-P for oral or parenteral administration.

Several outstanding serological products were exhibited. Exceptional interest attaches to 'WELLCOME' REFINED DIPHTHERIA ANTITOXIN-GLOBULINS which combines the advantages of increased concentration (4000 Ehrlich units or more per c.c. with reduced protein content). It should be noted that 'WELLCOME' CONCENTRATED DIPHTHERIA ANTITOXIN-GLOBULINS is still available. Other recently-introduced products shown in this section were 'WELLCOME' WHOOPING COUGH VACCINE for administration as a prophylactic measure and 'WELLCOME' TETANUS PROPHYLACTIC FORMOL-TOXOID.

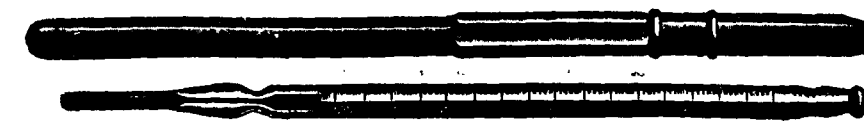
In addition to 'WELLCOME' INSULIN, which enjoys the distinction of being the first commercial product to be prepared with pure, crystalline insulin, a display of 'WELLCOME' PROTAMINE INSULIN (WITH ZINC)-SUSPENSION was shown.

Amongst digitalis preparations exceptional interest was taken in DIGOXIN, a pure, stable, crystallised glucoside isolated from the leaves of *Digitalis lanata*. The discovery of Digoxin, which resulted from pioneer researches carried out by Burroughs Wellcome & Co., gave clinicians a digitalis product of stability and of known chemical composition which can be used with the utmost confidence in all conditions requiring digitalis therapy.

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Specimens of 'TABLOID' NICOTINIC ACID, a product introduced for the treatment of pellagra, were noted with interest. 'Tabloid' Nicotinic Acid is of exceptional purity and is almost entirely free from secondary reaction products.



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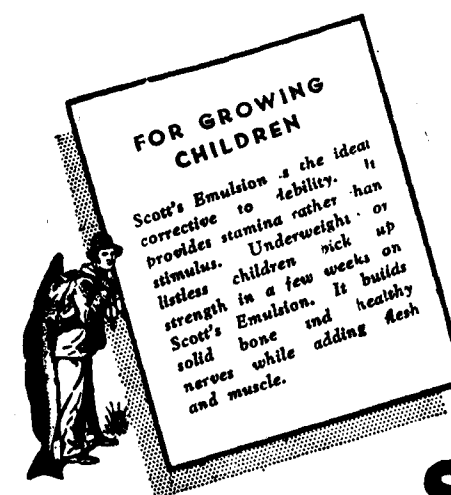
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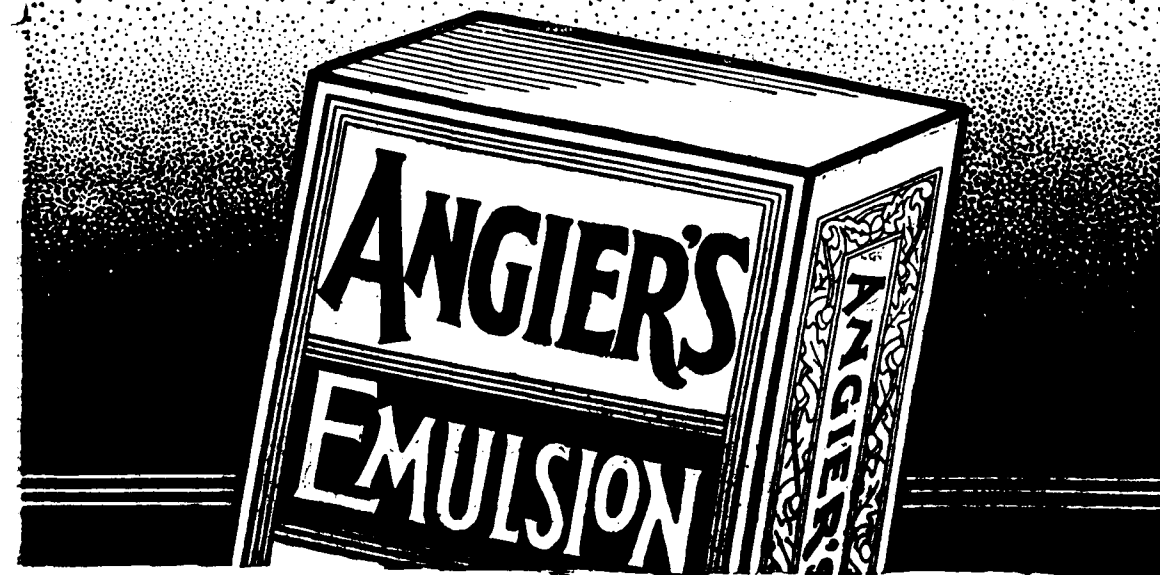
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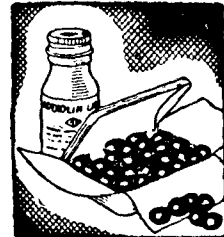
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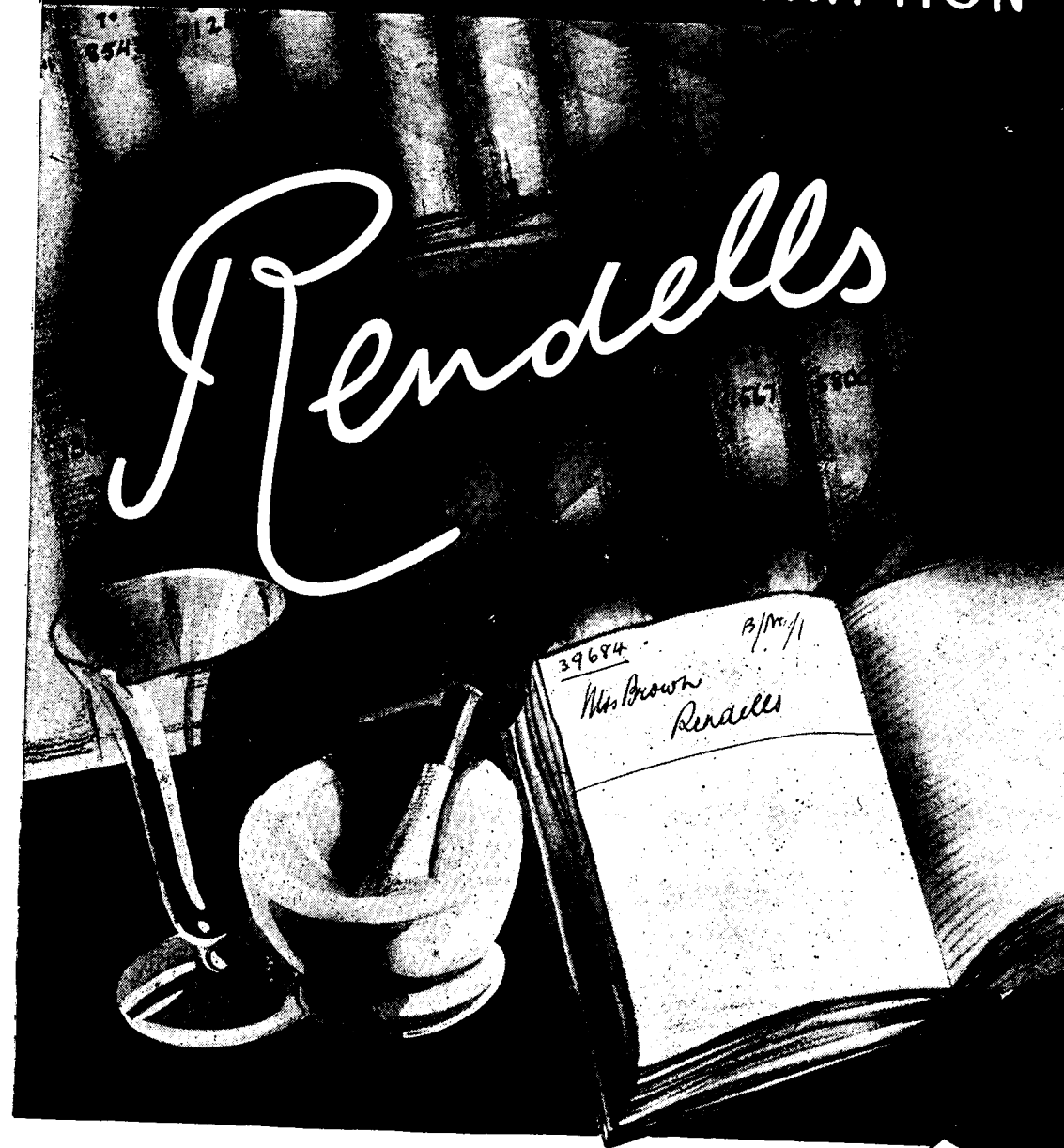
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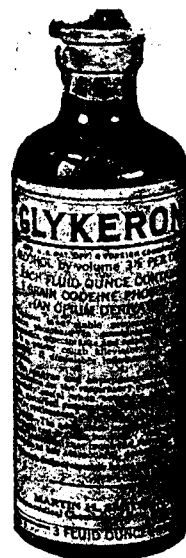
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